
DISCUSSION PAPER:
**EXPLORING OPTIONS
TO INTEGRATE CLIMATE CHANGE
INTO THE GOALS AND TARGETS
FOR POST-2015 DEVELOPMENT**

TABLE OF CONTENTS

Executive Summary	3
Overview of different options	8
Overview of advantages and disadvantages of different options	9
Introduction: climate impacts on development impacts on climate	10
Option 1: Embedding climate change action across all relevant SDGs	12
A. Climate embedded in a water goal	13
B. Climate embedded in a food and agriculture goal	15
C. Climate embedded in an energy goal	16
D. Climate embedded in a health goal	17
E. Climate embedded in global partnership goal	18
F. Essential climate targets for other goals	19
Options 2-4: climate goal options	22
Option 2: Including a 'plus climate change' goal	23
EXAMPLE: 'Disaster Risk Reduction (DRR) plus Climate Change' goal	24
Option 3: including a climate change goal: fulfilling the UNFCCC commitments	26
Target 1 – Reducing global greenhouse gas emissions fairly and equitably	27
Target 2 – Implementing national low-carbon development strategies	28
Target 3 – Implementing national adaptation strategies	28
Target 4 – Financing developing countries' adaptation and mitigation needs	29
Option 4: Including a climate change goal: preventing dangerous climate change	30
Target 1 – A collective global effort approach to staying below 2°C – setting a global carbon budget	31
Target 2 – Fair and equitable reductions in the carbon-intensity of economies	32
Target 3 – Building the adaptive capacity of countries to deal with dangerous levels of global warming	32
Target 4 – Protecting the most vulnerable populations from the impacts of climate change	33
Target 5 – Ensuring a climate risk-based approach	33
ANNEX 1 – Relevant UNFCCC commitments	34

EXECUTIVE SUMMARY

Climate change impacts on development impacts on climate change

Climate change is a driver of poverty, vulnerability and inequality, posing a mounting risk that cannot be ignored by the international community's efforts to end poverty and achieve sustainable development through the post-2015 process. Severe impacts on every continent and across the oceans are already being experienced, resulting in growing economic, environmental and social costs. The losses are already high, especially for poor countries and communities, and will increase the longer action is delayed. Global development goals aiming to eradicate poverty will be ineffective, even in the short term, if countries fail to accelerate their actions to address climate change.

The window of opportunity to tackle climate change is closing swiftly: CO₂ emissions will have to peak before 2020 and rapidly decline over the lifetime of the post-2015 framework. The 3rd Working Group for the 5th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) reported in April 2014 that it is still possible to keep global warming below 2°C - the level at which Parties to the UN Convention on Climate Change (UNFCCC) have agreed climate change becomes dangerous. But to do so will require deeper and faster cuts in emissions, with urgent action in key emitting sectors and settings. As a universal development framework with differentiated actions for all countries, the post-2015 framework can make an important contribution to our collective response to climate change.

Purpose and context of this paper

While there is general agreement that addressing climate change is a pre-requisite for ending poverty and sustainable development, there is less clarity on how it should be included within the goals and targets that will form the post-2015 framework. This paper presents four potential options for integrating climate change into the sustainable development goals (SDGs), outlining their respective advantages and disadvantages.

The first option explores mainstreaming climate change across all relevant SDGs. Options two to four present different versions of a climate change goal, intended to complement the mainstreaming approach. They include: a 'plus climate change' goal that combines climate change with a related topic; a climate change goal with targets based on existing UNFCCC agreements; and lastly a climate change goal with targets based on current scientific recommendations.

This paper does not propose a complete set of goals for the post-2015 framework but provides a comprehensive overview of approaches to addressing climate change through the post-2015 framework. It is also beyond the remit of this paper to answer questions on technology development and transfer, climate finance and financing for sustainable development. However, an outstanding task for interested parties is to equip climate-related goals and targets with appropriate, qualitative and quantitative indicators suitable for national contexts according to common but differentiated responsibilities.

Both this paper and *'Doubling Climate Ambition: how the post-2015 and UNFCCC processes complement each other'* are part of a series of discussion papers produced by environment and development organizations with the support of Beyond 2015 and CAN-International, two major global NGO networks on post-2015 and climate change.

Overview of options and recommended goals and targets

The graphic on page 8 provides an overview of how the different options sit together. A brief description of each option is provided below along with proposed goals and targets. The arguments for and against each option are summarized in the table on page 9.

Option 1 – Embedding climate change action across all relevant SDGs

This option proposes the mainstreaming of climate change across the post-2015 framework through the design of climate smart SDGs (see box below). A selection of examples, including water, food and agriculture, energy, health and global partnerships, are provided:

GOAL – SECURING SUSTAINABLE WATER FOR ALL

Target 1 – Ensuring sustainable access to water, sanitation and hygiene

Adopt effective, sustainable, scientifically-based and climate-sensitive management of water resources that facilitate access to sustainable water and sanitation for everyone, everywhere, by 2030.

Target 2 – Ensuring adaptation and resilience to water-related disasters

Increases investment in pro-poor adaptation to natural and human-induced water-related disasters by X% and ensure that water and sanitation services are built to locally appropriate, hazard-resistant standards.

Target 3 – Ensuring good governance and water stewardship

Build equitable, participatory and accountable water governance regimes and progressively improve and strengthen equitable water allocation systems.

GOAL – SUSTAINABLE AGRICULTURE TO SECURE FOOD FOR ALL

Target 1 – ensuring smallholder farmers' climate resilience

Supporting smallholder agriculture to become climate resilient by shifting x% of small holder agriculture to adaptive, low-carbon and eco-system based approaches.

Target 2 – Supporting agro-ecological solutions

Increase funding for agro-ecological models of production by x% by 2030

Target 3 – Ensuring market access for smallholder farmers

Provide an enabling environment for smallholders by increasing their access to markets by XX% by 2030.

Target 4 – Reducing food waste to reduce GHG emissions

Consumption patterns and food production systems transformed to reduce greenhouse gas emissions and food waste and losses, including by cutting food waste related to consumption and processing from 40% to 20% by 2020 and from 20% to 10% by 2030.

Target 5 – Increasing access to weather information

x% of farmers have access to reliable and regular weather information and early warnings of major climate events.

GOAL – SUSTAINABLE ENERGY FOR ALL

Target 1 – Achieving universal energy access

Universal access to reliable, affordable, safe, secure, and sustainable energy services.

Target 2 – Increasing energy efficiency

Annual global rate of improvement in energy intensity (energy/unit GDP) of at least 4.5%.

Target 3 – Increasing renewable energy

45% of all primary from renewable sources.

Target 4 – Phasing out fossil fuel subsidies

Phase-out of harmful and regressive fossil fuel subsidies by 2020 and reallocation of public subsidies to support clean, affordable energy access for the poorest.

GOAL – ENSURING HEALTHY LIVES AT ALL AGES

Target 1 – Providing universal access to healthcare

Ensuring universal access to quality healthcare with priority to poor and marginalised people by 2030.

Target 2 – Ending preventable deaths

End preventable morbidity and mortality through priority health interventions and actions on the social and environmental determinants of health.

Target 3 – Increasing knowledge on climate change impacts on health

Increase the % of national health education guidelines and outreach programmes that address climate change.

GOAL – FAIR RULES OF THE GAME FOR ALL ACTORS

Target 1 – Ensuring sustainability reporting

Ensuring corporate sustainability reporting and disclosure of carbon risk and sustainability information integrated into their reporting cycle, especially for publicly listed and large companies.

Target 2 – Funding low-carbon technology

Ensure that the need for banks, pension funds and insurance companies to rapidly reduce investment in fossil fuels and to accelerate investment in low-carbon technology, especially for energy and energy efficiency.

Target 3 – Transferring low-carbon technologies

In cooperation with the private sector, make available benefits of new technologies solutions for low-carbon development and climate adaptation.

Target 4 – Making investments work for the climate

Ensure that all development assistance is assessed to be 'climate sensitive', by tracking investment to ensure that they are disaster resilient, that they work for adaptation and they do not add to greenhouse gas emissions.

Under this option we also present climate change mitigation and adaptation targets designed for a climate change goal (see Options 3 and 4) that should also be integrated into other SDGs, regardless of whether a standalone climate change goal is included. Which set of targets is chosen depends on the level of ambition and climate protection countries aim for.

Option 2 – Including a 'plus climate change' goal

A 'plus climate change' goal combines climate change targets with those of another closely related subject into one shared goal. Several different combinations are possible. We have selected Disaster Risk Reduction (DRR) to illustrate this approach in a 'DRR and climate' goal. As with Options 3 and 4, the 'plus climate change' option should be in addition to, not instead of, mainstreaming.

GOAL – MANAGING DISASTER AND CLIMATE RISKS

Target 1 – Disaster Risk Reduction

Reduce the impact of disasters on poverty eradication and economic growth, including the impact on poor men and women.

Targets 2 to x – Climate change mitigation

See option 3 and 4 below for examples.

Targets x to x – Climate change adaptation

See option 3 and 4 below for examples.

Option 3 – Including a climate change goal based on existing UNFCCC commitments

The targets for this climate change ‘standalone’ goal include climate change mitigation and adaptation actions that have already been agreed through the UNFCCC process. The targets can also be used under Option 1, and as targets to make up a ‘plus climate change goal’ under Option 2. References to the relevant UNFCCC texts and decisions are provided in Annex 1.

GOAL – FULFILLING THE UNFCCC COMMITMENTS TO TACKLE CLIMATE CHANGE

Target 1 – Reducing global greenhouse gas emissions fairly and equitably

Greenhouse gas emissions peak globally before 2020 and decline rapidly by 2030 in line with the UNFCCC agreement to keep global warming below 2°C and in accordance with equity and its principle of common but differentiated responsibilities and respective capabilities.

Target 2 – Implementing national low-carbon development strategies

By 2020 all countries have implemented their economy-wide, low-carbon development strategies with defined mitigation targets for 2020 and 2030, as consistent with the global goal of keeping global warming below 2°C.

Target 3 – Implementing national adaptation strategies

By 2030 all countries have implemented adaptation strategies, programmes and plans that are in line with managing the impacts of dangerous climate change, and have mainstreamed them into all development strategies and programmes.

Target 4 – Financing developing countries’ adaptation and mitigation needs

By 2020, an additional \$100 billion (US) a year is available to developing countries from developed countries for adaptation and mitigation purposes, of which at least 50% is available for adaptation purposes¹.

Option 4 – Including a climate change goal based on scientific recommendations

The targets defined in this option are designed to deliver the scale and rate of action needed to prevent dangerous climate change as based on the latest climate science. It offers a higher degree of protection for development and lower level of climate risk than Option 3. These targets can also be used for mainstreaming in Option 1 or as targets for a combined ‘plus climate change’ goal in Option 2.

GOAL – PREVENTING DANGEROUS CLIMATE CHANGE

Target 1 – A collective global effort to staying below 2°C – setting a global carbon budget

Between 2015-2030 global cumulative emissions of greenhouse gases are limited to around 580 GtCO₂e, and global annual emissions have declined to less than 40 GtCO₂e/yr by 2020, and less than 24 GtCO₂e per year by 2030 to keep global warming between 1.5 and 2°C this century.

Target 2 – Fair and equitable reductions in the carbon-intensity of economies

By 2030 the carbon intensity of the global economy has fallen by x%, and all countries have achieved carbon intensity improvement rates of at least x% per year (CO₂e/GDP-ppp) against a historical baseline of x.

Target 3 – Building the adaptive capacity of countries to deal with dangerous levels of global warming

By 2030 all countries have the adaptive capacity to withstand an increase in global temperature of at least 2°C.

Target 4 – Protecting the most vulnerable populations from the impacts of climate change

By 2030 the most vulnerable populations within all countries are protected from the impacts of climate change.

Target 5 – Ensuring a climate risk-based approach

By 2020 all countries have science-based and participatory national climate risk assessments developed and mainstreamed into development strategies and programmes.

DEFINITION OF 'CLIMATE-SMART' AS USED IN THE CONTEXT OF THIS PAPER*

A 'climate-smart' post-2015 goal should ideally deliver for the three areas of 1) poverty eradication, 2) climate change mitigation and 3) climate change adaptation and building resilience.

**The term 'climate-smart' has been heavily criticised by some in the context of 'climate smart agriculture'.² We are currently reviewing the term and suggestions for better language are welcome. However, for the purpose of this paper we will use 'climate-smart' strictly as per this definition since other terms, including 'climate-proof', 'climate-resilience', 'climate-safe' and 'climate-positive', have been found to be insufficient alternatives. Whatever term is used, the important aspect is that the SDGs contribute to poverty eradication as well as climate change action.*

The post-2015 framework aims to end poverty, which can only be achieved when the priorities and aspirations of people experiencing the greatest poverty and marginalisation are front and centre. The post-2015 framework should promote an integrated approach to outcomes for both people and the planet to identify in advance potential benefits and trade-offs, and deliver sustainable, low emissions development in a socially just and equitable way.

Delivering under the three areas of poverty eradication, climate change mitigation, and climate change adaptation and building resilience does not mean that there should be three targets under each goal, with one referring to each area. Nor does it mean that every target should deliver on all three areas to the same level. But in its entirety the goals should contribute to all three areas.

Not all goals need to be climate smart to the same degree. For example, a goal on energy needs to be climate smart, but a goal on education potentially less so. Furthermore, not all goals will be able to contribute to all three areas to the same extent. For example, a goal on water might contribute more to adaptation than to mitigation.

'Climate-smart' development goals are no different to the sustainable development goals proposed at Rio+20 in that they should be universal in scope but differentiated by country context.

OVERVIEW OF DIFFERENT OPTIONS

Option 1: Embedding climate action across all relevant SDGs

WATER	FOOD & AGRICULTURE	HEALTH	ENERGY	GLOBAL PARTNERSHIPS	OTHER	OTHER
Climate-related target(s) on water	Climate-related target(s) on food & agriculture	Climate-related target(s) on health	Climate-related target(s) on energy	Climate-related target(s) on global partnerships	Climate-related target(s) on climate adaptation	Climate-related target(s) on climate mitigation

Option 2: Including a 'plus climate change' goal (example: DRR plus climate change)

WATER	FOOD & AGRICULTURE	HEALTH	ENERGY	GLOBAL PARTNERSHIPS	DRR + CC
Climate-related target(s) on water	Climate-related target(s) on food & agriculture	Climate-related target(s) on health	Climate-related target(s) on energy	Climate-related target(s) on global partnerships	Target(s) on mitigation
					Target(s) on adaptation
					Target(s) on DRR and resilience

Option 3: Mainstreaming with a climate change goal based on existing UNFCCC agreements

WATER	FOOD & AGRICULTURE	HEALTH	ENERGY	GLOBAL PARTNERSHIPS	CLIMATE CHANGE UNFCCC BASED
Climate-related target(s) on water	Climate-related target(s) on food & agriculture	Climate-related target(s) on health	Climate-related target(s) on energy	Climate-related target(s) on global partnerships	Target(s) on mitigation
					Target(s) on adaptation

Option 4: Mainstreaming with a climate change goal based on scientific recommendations

WATER	FOOD & AGRICULTURE	HEALTH	ENERGY	GLOBAL PARTNERSHIPS	CLIMATE CHANGE SCIENCE BASED
Climate-related target(s) on water	Climate-related target(s) on food & agriculture	Climate-related target(s) on health	Climate-related target(s) on energy	Climate-related target(s) on global partnerships	Target(s) on mitigation
					Target(s) on adaptation

OVERVIEW OF ADVANTAGES AND DISADVANTAGES OF DIFFERENT OPTIONS

TOPIC	ARGUMENTS FOR	ARGUMENTS AGAINST
Climate Change (CC) in post-2015 in general	<ul style="list-style-type: none"> • CC is the most critical challenge to development hence the new development framework must integrate climate action • Without addressing cc, poverty eradication and sustainable development, the two declared aims of the SDGs cannot be achieved • CC is a major driver of poverty, vulnerability and inequality • CC is a threat multiplier, exacerbating existing social, economic and environmental stresses • CC costs to economies is high and will increase further • Climate action is urgent and needs to be scaled up and accelerated • Strong visibility of climate change in post-2015 enhances policy coherence and can raise ambitions across both processes 	<ul style="list-style-type: none"> • Cc is the mandate of the UNFCCC • Including climate change can import difficult politics from the UNFCCC • Climate action can wait, economic development and poverty eradication have priority • Post-2015 is only a voluntary framework
Main-streaming climate change	<ul style="list-style-type: none"> • CC is a cross-cutting issue and impacts on most areas covered by SDGs • Tackling climate change needs a comprehensive response • Could improve integration of climate change into other policy areas 	<ul style="list-style-type: none"> • CC targets get lost in the overall framework • Risk of a patchwork approach to climate change that doesn't add up to sufficient action • Transaction costs of arguing for inclusion of climate targets in other goal areas • CC is only one of many issues that are meant to be mainstreamed in SDGs • CC treated as secondary issue
A stand alone climate change goal in general	<ul style="list-style-type: none"> • Increased visibility and framing of cc as development issue • CC is treated as a development issue in its own right • Puts CC high on public and political agenda • Focuses attention and resources on CC 	<ul style="list-style-type: none"> • Might encounter similar difficulties in reaching agreement as seen in UNFCCC • Needs to be in addition to, not instead of mainstreaming CC
A 'plus climate change' goal	<ul style="list-style-type: none"> • Relatively easy to apply • Leaves space for another priority goal area in the SDG framework 	<ul style="list-style-type: none"> • Risk of conflating climate change with another agenda and fudging the topics • Restricted number of targets lead to difficult prioritisation and trade-offs
DRR and climate change goal	<ul style="list-style-type: none"> • Includes inter-related challenges • Includes shared solutions 	<ul style="list-style-type: none"> • Not all disasters are climate-related • DRR does not require targets for climate mitigation (but could be included) • Both DRR and CC require discrete interventions and approaches
A climate change goal based on agreed UNFCCC commitments	<ul style="list-style-type: none"> • Reinforces existing UNFCCC commitments • Sends a strong signal to UNFCCC process on ambitions, importance and urgency • Should be easy to agree as it has been agreed already • Less interference from UNFCCC politics 	<ul style="list-style-type: none"> • Current levels of commitments insufficient for preventing dangerous climate change • Targets might need to be adjusted according to future agreements and commitments
A climate change goal based on science	<ul style="list-style-type: none"> • Very strong signal on ambitions • Lives up to the importance and urgency required to address cc • Matches aspirational and transformational tone of post-2015 agenda • Morally and scientifically the right thing to do 	<ul style="list-style-type: none"> • Politically most challenging to agree

INTRODUCTION

At the 2012 Rio+20 conference all countries agreed that climate change is a major obstacle to sustainable development and poverty eradication.³ This is supported by the experience of people living in poverty and vulnerability⁴, the major UN reports feeding into post-2015⁵ and the most recent assessments of climate change science prepared by the Intergovernmental Panel on Climate Change (IPCC).

This latter set of reports, released in late 2013 and early 2014, reconfirmed that climate change is real and happening right now⁶, that greenhouse gas emissions released by human activities are the primary cause, and that the world is on a pathway towards global warming of 4° C or more this century.⁷ They confirmed in no uncertain terms that those who are marginalised and economically and socially disadvantaged are disproportionately impacted by climate change⁸, directly through impacts on livelihoods, reductions in crop yields or water availability, or destruction of homes, and indirectly through, for example, increased food prices and food insecurity. Further, the reports concluded that climate change impacts will slow down economic growth, exacerbate inequalities, worsen existing poverty in most developing countries, and trigger new poverty traps in both developed and developing countries.^{9 10}

However, this same analysis showed that a 4°C, or even 2°C, warmer world is not inevitable. Avoiding this future is still possible, although the window of opportunity is rapidly closing. The global trajectory of greenhouse gas emissions must be reversed within this decade but this requires urgent action in all areas, including international development,¹¹ and the use of all of the political tools at our disposal, including the post-2015 framework.

For the post-2015 framework to end poverty by 2030 it must help to drive climate action in all countries without further delay, and enable those who are most vulnerable to climate change to respond to the impacts they are facing already. The evidence provided by the IPCC reports shows that even the fairly modest increase in global average temperature of 0.9°C experienced to date has undermined some of the development gains of the last two to three decades. Already with under 2°C of warming it will become increasingly difficult to attain the post-2015 objectives. For this reason, excluding climate-change-specific goals and targets from the post-2015 framework is not an option.

The purpose of this paper is to describe different options for including climate change in the post-2015 framework, and to facilitate a more informed and constructive debate by providing suggestions for possible goals and targets. The different options discussed include: the mainstreaming of climate change targets across the framework to make all relevant goals 'climate-smart' (option 1); and three different versions of a climate goal combined with mainstreaming (options 2-4).

The options outlined are intended to ensure that climate change is given the profile and urgency of action it warrants as one of the greatest risks to development of our generation. The options are not mutually exclusive. Ideally, the post-2015 development framework would have climate change targets integrated across the framework as well as include a stand-alone goal. However, recognising the political nature of this process, we highlight the benefits and trade-offs associated with each to help informed decision making.

It is important to note that this paper does not provide a complete and holistic post-2015 framework – gaps will remain for discussion and questions to be answered. For example, technology development and transfer, and finance are essential to making progress. However, these issues fall under the "means of implementation" discussions taking place in parallel to those regarding the goal framework.

This paper builds on a series of papers and events put together with the support of Beyond 2015 and CAN-International, two major global NGO networks involved in this agenda. The first two papers on cross-cutting climate change and the arguments for and against a climate goal were presented during a workshop in October 2013 in London and the Open Working Group on Sustainable Development Goals (OWG on SDGs) meeting in November 2013.¹² The previous version of this option paper¹³ was presented at the 7th session of the OWG on SDGs in January 2014 and this final paper is presented at a workshop for Member State representatives in April 2014 hosted by the French permanent mission in New York together with an additional paper looking into the potential mutual benefits of the post-2015 and UN Framework Convention on Climate Change (UNFCCC) process.

Climate change affects economic development

Scientific research has shown that climate change is due to greenhouse gas (GHG) emissions from human activities and its impacts are being felt now. We are already locked into a certain amount of global warming and any development from this point on needs to reflect that we are living in a climate constrained world and already

facing mounting costs of inaction on climate change. These economic, social and environmental costs increase the longer action is delayed making it increasingly difficult to end poverty within our lifetime, and to 'leave no one behind'. Development gains made to date will continue to be lost as climate change impacts worsen, further undermining the prospects for future generations.

Furthermore, climate change threatens everyone's economic security and hinders inclusive and equitable growth and development. Continuing to delay action only increases the costs of responding. In 2000 climate change caused economic losses estimated at close to 1% of global GDP¹⁴. By 2030, the costs of climate change and air pollution combined are projected to reach 4.2% of global GDP, with the world's least developed countries suffering losses of up to 11% of their GDP¹⁵. New research warns that 31% of global economic output (around US\$44 trillion) is likely to face 'high' or 'extreme' risks by 2025 due to global warming. Major economies will also take the hit, as extremes of weather and the associated damage could wipe 2% of the GDP of the US by 2030, while similar effects could cost China US\$1.2 trillion by the same date.¹⁶ On the other hand, the benefits of early action are many, including economically. Recent studies show that carbon reduction activities generate positive return on investment¹⁷ and can drive profit¹⁸.

Preventing dangerous climate change requires that all countries adopt low-emission development pathways before 2030¹⁹ so as to facilitate the peaking of global emissions as soon as possible, and drive the rapid emission reductions needed thereafter.²⁰ All 196 Parties to the UNFCCC have agreed to the need to reduce emissions, and some of the world's largest financial institutions, including the IMF, World Bank and OECD, have recently recognised the benefits of early climate action.

Despite this, progress has been too slow; countries' ambition levels remain too low and too little action has been taken. The post-2015 development framework could over the coming 15 years – provided it includes goals and targets that lead to climate action – play a pivotal role in guiding global efforts to eradicate poverty, and in shifting countries' development pathways so that they are sustainable, low-emission and climate-resilient.

Dispelling common myths on climate change in the post-2015 framework

One of the most common arguments used to justify excluding climate change targets or goals from the post-2015 framework is that they could introduce the difficult UNFCCC politics to the post-2015 negotiations. However, as we demonstrate later in this paper it is possible to frame both goals and targets in ways that avoid this potential conflict. Moreover, climate change is not the exclusive preserve of the UNFCCC; actions are also agreed through other fora including international cooperative agreements such as the Major Economies Forum, the G20 and the Climate and Clean Air Initiative. These support the objectives of the UNFCCC and so could the post-2015 framework.

Furthermore, and perhaps more fundamentally, the post-2015 framework is unlikely to lead to sustainable development if it fails to take climate change into account, and the work of the UNFCCC will not necessarily lead to sustainable development. One does not automatically lead to another, since not all development interventions entail low emissions or improve climate resilience and not all efforts to address climate change are pro-poor. Both processes and agendas can complement and support each other and improve policy coherence, if goals and targets and the actions initiated are consistent, or in some cases even identical. A post-2015 framework that includes action to address both the underlying causes and the impacts of climate change will send a strong message and act as a springboard for an ambitious and legally binding climate deal under the UNFCCC in 2015. This topic is further explored in a discussion paper '*Doubling Climate Ambitions: how the post-2015 and UNFCCC process can complement each other*'²¹.

Finally, it is also often argued that poverty eradication is a more urgent challenge than climate change, and that development is itself a solution as lifting people out of poverty gives them the tools to both mitigate and adapt. It has been suggested that once this task has been completed, the world can turn to solving the climate crisis. But research shows very clearly: the window of opportunity for preventing dangerous climate change has almost shut. Not taking this opportunity would also have devastating consequences on the preservation and restoration of ecosystems and services which is highly relevant for poverty eradication since most poor people's livelihoods greatly depend on them. Only goals, targets and indicators that address different aspects of climate change can bring about the concrete actions required. Excluding them would mean that the global framework tasked with ending poverty and driving sustainable development policy and action fails to address one of the most critical challenges to poverty eradication and sustainable development the currently facing the world.

OPTION 1: EMBEDDING CLIMATE CHANGE ACTION ACROSS ALL RELEVANT SDGS

WATER	FOOD & AGRICULTURE	HEALTH	ENERGY	GLOBAL PARTNERSHIPS	OTHER	OTHER
Climate-related target(s) on water	Climate-related target(s) on food & agriculture	Climate-related target(s) on health	Climate-related target(s) on energy	Climate-related target(s) on global partnerships	Climate-related target(s) on climate adaptation	Climate-related target(s) on climate mitigation

Poverty has many different dimensions. The purpose of the SDGs is to address those different dimensions – whether they are economic, social or environmental in nature – in each goal. Since climate change affects many crucial dimensions of human development, it needs to be integrated into each of the relevant SDGs.

Given that it is people in poverty who are most vulnerable to climate change, priority must be given to actions that help those most vulnerable to the impacts of climate change. Equity and environmental integrity must be at the heart of sustainable development goals, through pro-poor climate action that benefits the environment.

Only concrete targets and indicators will deliver concrete action. Targets that are generic, not measurable or vague will not drive progress. Targets under MDG 7 on environmental sustainability and MDG 8 on global partnership suffered these defects, meaning that many developed countries were often able to evade any implied responsibilities and avoid being held accountable.

Embedding climate change across the framework would contribute to identifying the actions needed within and across all sectors, potentially catalysing the transformations needed to achieve sustainable, low-carbon and climate-resilient development on a global scale. This applies especially to goals on economic growth. The systemic nature of climate change is becoming more and more evident and it is a false assumption that there is a choice between addressing climate change and driving economic development. This mainstreaming approach could ideally be complemented by a climate change goal (see options 3-4) that captures the global and national scale climate actions needed.

The risk of taking only a mainstreaming approach is that targets are spread across the framework, which could mean that important aspects of climate action may be inadvertently missed or given low priority.

There are also transaction costs associated with this approach. Each goal can include only a limited number of targets and indicators and climate change is just one of a number of issues competing for space. This is likely to mean climate targets will be included in some but not all goal areas leading to a patchwork of targets that may not add up to a coherent or sufficient framework of climate action. Furthermore, this approach treats climate change as secondary to all of the other issues addressed as goals. So while mainstreaming is a useful approach for potentially improving the sectoral integration of climate change, using mainstreaming alone doesn't necessarily lead to a globally or nationally coherent approach to climate change and could come at the cost of raising the political and public profile of climate change as a major barrier to poverty eradication and sustainable development in its own right.

To be effective in driving change the goals and targets defined in the post-2015 framework must be universal, concrete, well defined, and actionable but the enduring success of the post-2015 framework will ultimately also depend upon how 'climate-smart' it is.

DEFINITION OF 'CLIMATE-SMART' AS USED IN THE CONTEXT OF THIS PAPER*

A 'climate-smart' post-2015 goal should ideally deliver for the three areas of 1) poverty eradication, 2) climate change mitigation and 3) climate change adaptation and building resilience.

**The term 'climate-smart' has been heavily criticised by some in the context of 'climate smart agriculture'.²² We are currently reviewing the term and suggestions for better language are welcome. However, for the purpose of this paper we will use 'climate-smart' strictly as per this definition since other terms, including 'climate-proof', 'climate-resilience', 'climate-safe' and 'climate-positive', have been found to be insufficient alternatives. Whatever term is used, the important aspect is that the SDGs contribute to poverty eradication as well as climate change action.*

The post-2015 framework aims to end poverty, which can only be achieved when the priorities and aspirations of people experiencing the greatest poverty and marginalisation are front and centre. The post-2015 framework should promote an integrated approach to outcomes for both people and the planet to identify in advance potential benefits and trade-offs, and deliver sustainable, low emissions development in a socially just and equitable way.

Delivering under the three areas of poverty eradication, climate change mitigation, and climate change adaptation and building resilience does not mean that there should be three targets under each goal, with one referring to each area. Nor does it mean that every target should deliver on all three areas to the same level. But in its entirety the goals should contribute to all three areas.

Not all goals need to be climate smart to the same degree. For example, a goal on energy needs to be climate smart, but a goal on education potentially less so. Furthermore, not all goals will be able to contribute to all three areas to the same extent. For example, a goal on water might contribute more to adaptation than to mitigation.

'Climate-smart' development goals are no different to the sustainable development goals proposed at Rio+20 in that they should be universal in scope but differentiated by country context.

Under a framework in the post-2015 era, all countries must commit to deliverable actions. Climate-smart goals are no different to traditionally defined goals in that they should be universal in scope but differentiated by country context which is particularly relevant for action on climate change. They have to be implemented through participatory development to ensure that people in poverty can take decisions on their own development. Technology development and transfer, and climate finance are also essential to making progress. However, these issues need further extensive exploration and consideration which would go beyond the scope of this paper.

Having extensively discussed how mainstreaming climate action across the SDGs could and should look like in principle, we now present concrete examples for 'climate-smart' goals on water, food and agriculture, energy, health and global partnerships as well as essential climate targets to be embedded in other goals.

A. Climate embedded in a water goal

Water is the fundamental link through which the impacts of climate change will be felt by having either too much or too little water and at the wrong time. Globally, the occurrence of floods and droughts categorised as disasters is increasing. Impacts are felt from changing seasonal and higher intensity rainfall; increasing seasonality of river flows, modification of groundwater recharge patterns; and risk of significant reduction in the volume of reliable surface water resources²³. Over the 20th century large inland floods doubled in frequency between 1996 and 2005, compared to the 1950 to 1980 period²⁴.

Water in lower-income countries is primarily used for agriculture; in high-income countries it is used for energy. Whilst other stresses such as population growth, changing economic activity, land-use change and urbanisation are increasing threats to water resources and water-dependent services, climate change is a threat multiplier. Adaptation to the impacts of current and future climate change is essential and communities will be in a far better position to adapt to future climatic changes if they have access to safe water, sanitation and hygiene. Extending access to water and sanitation before climate change impacts increase in severity will also greatly

reduce the projected social, economic and environmental costs associated with adaptation. This places an even greater urgency on the goal of reaching everyone, everywhere, with water, sanitation and hygiene.

Approaches to water management will require a diverse portfolio that can ensure pro-poor responses to climate change in both rural and urban contexts while also addressing the challenges faced in high-income countries. Rural water security will be critical to 70% of the world's poorest 1.4 billion people reliant on small-scale agriculture in securing basic livelihoods²⁵. Urban and peri-urban areas will increase demand for water and increase threats to water quality through industrial effluents and poor domestic sanitation. The 5th Assessment Report of the IPCC states that 'heat stress, extreme precipitation, inland and coastal flooding, as well as drought and water scarcity, pose risks in urban areas with risks amplified for those lacking essential infrastructure and services or living in exposed areas.' Pro-poor, community-level adaptation projects (using existing approaches such as Water Safety Planning for example) that address underlying vulnerabilities and take a longer-term view represent sound operational responses to climate change²⁶.

Climate-sensitive forward planning and investment are essential to avoid maladaptive development pathways²⁷. Mainstreaming water security into national-level water infrastructure, development and management plans will support sustainable growth, misallocating these resources will limit future options for climate adaptation²⁸. To achieve this, institutions will need to be operating under a strong governance system and ensure accurate data is shared and accessible to all water users as part of the monitoring and accountability mechanisms of the post-2015 framework.

GOAL – SECURING SUSTAINABLE WATER FOR ALL

Target 1 – Ensuring sustainable access to water, sanitation and hygiene

Adopt effective, sustainable, scientifically-based and climate-sensitive management of water resources that facilitate access to sustainable water and sanitation for everyone, everywhere, by 2030.

Target 2 – Ensuring adaptation and resilience to water-related disasters

Increases investment in pro-poor adaptation to natural and human-induced water-related disasters by X% and ensure that water and sanitation services are built to locally appropriate, hazard-resistant standards.

Target 3 – Ensuring good governance and water stewardship

Build equitable, participatory and accountable water governance regimes and progressively improve and strengthen equitable water allocation systems.

How this goal delivers on poverty eradication, mitigation and adaptation

A 'climate-smart' water goal must focus on poverty eradication, resilience and adaptation through the extension of sustainable access to water, sanitation and hygiene (WASH) to everyone, everywhere by 2030. Where they exist however, opportunities should also be taken to reduce the energy intensity of water pumping and supply, or for avoiding lock-in to carbon intensive technologies, infrastructure and practices.

Target 1 highlights the fundamental link between water resource management and the extension of safe and sustainable water and sanitation services to everyone, in particular poor and vulnerable communities. Effective management of water resources will become increasingly important to water security and ecosystem integrity as water availability patterns become more unpredictable with climate change. Ensuring fair and equitable water access for all in a changing world requires priority being given to water and sanitation (an internationally recognised human right) which in turn is dependent upon the sustainable management of water resources to protect ecosystems and allocate water equitably between different uses. However, great care needs to be given to ensuring that infrastructure technologies provided are fit for the climatic and other conditions likely to occur by 2030 and beyond.

Any 'climate-smart' water goal must address adaptation and disaster risk reduction (Target 2) as increases in the incidence of water-related disasters are highly likely (and arguably already occurring). Poor communities in particular will require support in addressing their existing vulnerabilities and becoming more resilient to water-related disasters that are predicted to increase in frequency and intensity. Extending access to water, sanitation and hygiene needs to take a no-regrets approach to increasing resilience and supporting adaptation to climate change.

Target 3 addresses water governance and is directly related to climate change as the predicted hydrological changes will require strong, effective and equitable governance to make the difficult trade-offs required to allocate water resources fairly and sustainably. Sound governance regimes and transparent and participatory decision-making processes will also be required to implement adaptation, resilience and mitigation strategies and ensure that these are pro-poor.

B. Climate embedded in a food and agriculture goal

Climate change has profound implications for agriculture, food security and nutrition. The obstacles to ensuring the right to food are already significant and climate change is making it harder to overcome them, with latest estimates showing that impacts on hunger may be worse than previously thought and hit earlier than anticipated²⁹. The 5th Assessment Report of March 2014 shows that climate change impacts on the main staple crops more than anticipated and is likely to drive up food prices. This will reverse the fight against hunger, perhaps by decades. Further delay of action on adaptation and mitigation is not an option.

Meanwhile agriculture and land-use change have a significant role in the climate crisis³⁰ in terms of driving climate change and in providing solutions for mitigation and adaptation. The need to answer the food security, nutrition and agriculture challenges in a climate constrained world is critical, but must also be addressed carefully. Especially considering that the majority of the world's food is produced by smallholder farmers, who are the most vulnerable to climate change while being the least responsible for it. Agriculture has also a key socio-economic role in poverty alleviation, as it constitutes the main source of livelihood for the majority of the world's poor³¹.

It is imperative that sustainability is at the heart of any approach to climate-resilient agriculture and food security. Strengthening agricultural adaptation and developing agriculture models which bring strong benefits to food security with minimal emissions is crucial. Promotion of solutions, including agro-ecological models, improved and expanded irrigation systems, rainwater harvesting technologies, access to weather and climate information and disaster relief efforts, must be at the heart of the new sustainable development framework. An adequate enabling environment for sustainable agriculture, especially through responsible agricultural investments that factor in climate change and adaptation needs are also critical.

Building the resilience of smallholder farmers to intensifying environmental threats and investing in order to make them more food secure should be a priority for the post-2015 framework. A food and agriculture goal must be 'climate-smart', as defined earlier in this paper, in a way that adequately supports and strengthens smallholders' responsibilities, capacities and role with regard to the world's food security and contribution to low emitting agricultural patterns, while tackling emissions where they are the most important, i.e. in industrial food production. Existing suggestions for targets cover many critical issues, and are broadly welcomed. However, clear links to climate change need to be made.

GOAL – SUSTAINABLE AGRICULTURE TO SECURE FOOD FOR ALL

Target 1 – ensuring smallholder farmers' climate resilience

Supporting smallholder agriculture to become climate resilient by shifting x% of small holder agriculture to adaptive, low-carbon and eco-system based approaches.

Target 2 – Supporting agro-ecological solutions

Increase funding for agro-ecological models of production by x% by 2030

Target 3 – Ensuring market access for smallholder farmers

Provide an enabling environment for smallholders by increasing their access to markets by XX% by 2030.

Target 4 – Reducing food waste to reduce GHG emissions

Consumption patterns and food production systems transformed to reduce greenhouse gas emissions and food waste and losses, including by cutting food waste related to consumption and processing from 40% to 20% by 2020 and from 20% to 10% by 2030.

Target 5 – Increasing access to weather information

x% of farmers have access to reliable and regular weather information and early warnings of major climate events.

How this goal delivers on poverty eradication, mitigation and adaptation

This goal directly supports those who produce the majority of food and who also make up a big part of the world's poor population: smallholder farmers. Therefore achieving sustainable agriculture supports poverty eradication, now and in the long run.

Under a business-as-usual scenario, the increase in agricultural production will be accompanied by a rise in greenhouse gas emissions that will increase the risk of dangerous climate change, also putting food security further at risk. In turn, without significant measures to support adaptation of the agricultural sector to climate shocks, such as access to weather data, the right to food and consequently poverty eradication cannot be reached. The targets embed climate into the goal by supporting agricultural patterns that have low emissions while playing a significant role in world food security and poverty alleviation, such as agro-ecology or small-scale food production models. The agricultural sector is a priority for climate change adaptation and shifts to different agricultural models as suggested in this goal will contribute significantly to small holder farmers' capacity to adapt and build their resilience. Acting to reduce the current high food waste and losses will further allow the progressive elimination of agricultural emissions while increasing food security.

C. Climate embedded in an energy goal

Sustainable energy for all is essential to eradicating poverty and tackling climate change. Yet 2.7 billion people still live in energy poverty – 95% of them in sub-Saharan Africa or Asia. Over 1.3 billion people have no access to modern electricity, while 2.7 billion still cook on open fires³². More people (overwhelmingly women and children) die from indoor smoke pollution each year than from HIV/AIDS, tuberculosis and malaria combined³³.

Analysis by the International Energy Agency (IEA) suggests that to reach universal energy access by 2030, 55% of new electricity generation should come from decentralized, off grid sources - 90% of them renewable³⁴. Energy poverty and related issues within post-2015 cannot therefore be meaningfully addressed without increased support for decentralized (off-grid) energy provision. It is not feasible, affordable, nor desirable in many cases to connect rural populations to grids that are slow to deploy, prohibitively expensive, often unreliable, provide minimal long-term employment, and are mostly dependent on fossil fuels. Annual investments in the range of US\$36-41 billion will be needed to reach universal access³⁵.

The energy sector also plays the major role in climate change and hence has great potential to contribute to mitigation efforts. Energy is currently responsible for about 80% of global CO₂ emissions³⁶, with sectoral emissions set to double by 2030 under a business-as-usual scenario³⁷. The IEA recognised this potential recently when it called for an 'energy sector revolution' from 2020, shifting away from the fossil fuels that make up the majority of energy generation and consumption towards renewable sources and greater energy efficiency. The idea of a sustainable energy revolution is gaining momentum, with the UN's Sustainable Energy for All (SE4ALL) initiative aiming for universal energy access, doubling the share of renewable energy in the global mix and doubling the rate of improvement in energy efficiency³⁸. These targets are a good starting point but more ambitious action is needed³⁹. The SE4ALL renewable and efficiency targets should be increased, aiming at an annual global rate of improvement in energy intensity (energy/unit GDP) of at least 4.5% and for at least 45% of all primary energy needs to be met with renewable sources by 2030.

In addition, the post-2015 framework should incentivise governments to cut fiscal incentives for the production of fossil fuels and to report transparently on all fossil fuel subsidies⁴⁰. If pursued together, the targets proposed here are consistent with limiting global warming to below 2°C this century⁴¹.

On energy access, the SE4All Global Tracking Framework's Tier 3 indicators should be the minimum acceptable standard to qualify as having "access to modern energy services"⁴². Tier 3 tracks outcome-oriented factors such as quality of service – for example, having electricity available for a minimum of eight hours a day. It also addresses the range of poor people's energy needs holistically through a basic but respectable package of wider energy and cooking services. The implementation of this goal also needs to ensure that end users can participate in the design and delivery of energy services, to ensure that they are locally appropriate and meet end users' real development needs and wants⁴³.

All action should recognise the gendered dimension of energy poverty, which requires indicators to promote gender budgeting in energy planning, increasing collection and analysis of disaggregated data on energy and gender, and gender-sensitive energy governance, along with investments in energy services for enterprise development and strengthening women entrepreneurs' capacities to engage in energy value chains to promote economic empowerment.

Climate change is already impacting on our energy security by disrupting the systems for producing and transporting energy⁴⁴. Given that energy is crucial for human development, we recommend the post-2015 framework adopts outcome-based energy targets.

GOAL – SUSTAINABLE ENERGY FOR ALL

Target 1 – Achieving universal energy access

Universal access to reliable, affordable, safe, secure, and sustainable energy services.

Target 2 – Increasing energy efficiency

Annual global rate of improvement in energy intensity (energy/unit GDP) of at least 4.5%.

Target 3 – Increasing renewable energy

45% of all primary from renewable sources.

Target 4 – Phasing out fossil fuel subsidies

Phase-out of harmful and regressive fossil fuel subsidies by 2020 and reallocation of public subsidies to support clean, affordable energy access for the poorest.

How this goal delivers on poverty eradication, mitigation and adaptation

Access to energy is crucial for poverty reduction⁴⁵. Reliable, affordable, safe, secure and environmentally sustainable energy services for communities around the globe are central to ensuring their food and water security, sanitation, healthcare, education and for enhancing their productive activities and building sustainable livelihoods.

To eradicate poverty, support the adaptation of the climate sector to a changing climate and achieve the emissions cuts required to keep below the 1.5/2°C warming limit, a radical transformation of our energy system in line with the goal suggested above is needed within the lifespan of the post-2015 development framework.

The means of implementation for this goal should promote an approach to financing that recognises that energy service delivery to the poorest needs to be a combination of public-private partnerships, social enterprise initiatives and public-sector-financed aid or social support. In particular, low returns and perceived high risks make investment in decentralised energy access in low-income markets unattractive to mainstream private investors. The post-2015 framework should aim to incentivise innovative public partnerships with the private sector and civil society to deliver energy solutions that work for poor communities.

D. Climate embedded in a health goal

Climate change has huge and growing implications for our ability to ensure healthy lives for all across the globe, but particularly in developing countries with higher levels of poverty and lower coverage of health services. Given some climate impacts are already being felt and future impacts cannot be avoided, it is vital that health systems are strengthened to better understand and address how climate disruption affects human health.

- Climate change currently contributes to the global burden of disease and premature deaths and this will progressively increase with increasing disruption of the climate system and associated impacts.
- Climate-sensitive diseases are among the largest global killers. Diarrhoea, malaria and protein-energy malnutrition alone caused more than three million deaths globally in 2004, with over one-third of these deaths occurring in Africa⁴⁶.
- Estimates suggest that one-quarter of the global burden of disease can be attributed to environmental risks, including climate change⁴⁷.
- Recent studies suggest that the record high temperatures in western Europe in the summer of 2003 were associated with a spike of an estimated 70,000 more deaths than the equivalent periods in previous years⁴⁸.
- The direct damage costs to health (i.e. excluding costs in health-determining sectors such as agriculture and water and sanitation), is estimated to be between US\$2-4 billion/year by 2030⁴⁹.

The negative impact of climate change could have a severe affect on the health of whole populations and vulnerable and marginalised groups in particular. It is essential that those most affected, often also those who lack access to healthcare, are given access to health services without discrimination or the risk of falling into poverty as outlined in Target 1.

Target 2 combines the reduction of child and maternal mortality as well as under-70 mortality from non-communicable diseases and mortality rates from climate-sensitive diseases which would make good indicators for this target. Focussing on climate sensitive diseases, such as the vector-borne disease, diarrhoeal disease, malnutrition and weather-related disasters, will better enable countries to adapt to and combat the effects of climate change.

Climate change will deeply affect the underlying social and environmental determinants of health – clean air, safe drinking water, sufficient food and secure shelter – that lead to child and maternal mortality and the growth in non-communicable diseases. It is important to emphasise the interlinkages between health and other affected sectors (such as water and sanitation, agriculture/nutrition, urban areas) that will be crucial to enabling healthy lives.

Health systems promote and monitor healthy behaviours amongst the population, ensuring that the healthcare and education sectors build resilience of local and national populations to the impacts of current and future climate disruption. Factors such as education, health care, infrastructure, and also the issue of unequal access to these basic services, are crucial if resilience to climate change is to be built. National health plans that integrate climate action can prepare populations for effective adaptation to future climate disruption as outlined in Target 3.

GOAL – ENSURING HEALTHY LIVES AT ALL AGES

Target 1 – Providing universal access to healthcare

Ensuring universal access to quality healthcare with priority to poor and marginalised people by 2030.

Target 2 – Ending preventable deaths

End preventable morbidity and mortality through priority health interventions and actions on the social and environmental determinants of health.

Target 3 – Increasing knowledge on climate change impacts on health

Increase the % of national health education guidelines and outreach programmes that address climate change.

How this goal delivers on poverty eradication, mitigation and adaptation

Health is an important component of well-being and universal access to quality health services is a crucial component of poverty eradication. The IPCC predicts that the health status of millions of people will be affected by climate change, directly through changing weather patterns and extreme weather events, such as heat waves, floods and forest fires, and indirectly through changes in air quality, water, crop yields and agriculture, vector ecology and ecosystems. Many of the major killers such as diarrhoeal diseases, malnutrition, malaria and dengue are highly climate-sensitive and are expected to worsen as the climate changes⁵⁰.

Health is a vital component for building poor and vulnerable people's resilience and capacity to adapt to the changing climate. Ensuring access to quality health services is one of many ways to support this.

Further, improving health and emission reductions can go hand-in-hand. Steps to reduce greenhouse gas emissions could even have positive health effects. For example, by replacing open fuel wood, dung or charcoal stoves and heating in developing countries or promoting the safe use of public transportation and active movement – such as biking or walking.

Many low emission solutions improve air pollution (indoor and outdoor) and associated respiratory and cardiovascular diseases.

E. Climate embedded in global partnership goal

The new post-2015 development framework requires a new approach to global partnerships. The first step needs to be away from the donor-recipient world view presented in the MDGs, especially MDG 8 and towards embracing the universal agenda of the SDGs where all countries need to take action differentiated according to

their contexts and capacities to jointly address common and shared challenges. Secondly, the new and different roles and responsibilities of all actors – public and private sector as well as civil society – in development need to be taken into consideration.

The High-Level Panel on post-2015 agreed to push developed countries to honour their commitments on aid, reform trade, tax and transparency policies and better regulate the financial and commodities market to lead the way to sustainable development while developing countries seek to increasingly fund their own development. It also agreed that consumption and production patterns should be managed in more sustainable and equitable ways⁵¹. All these commitments have the potential to support climate actions.

It is very clear that for developing countries to respond to climate change effectively, the goals will have to establish a fair and equitable approach to effort sharing, as encapsulated in the Rio declaration principle of common but differentiated responsibility (CBDR). Additionally, it is understood that establishing agreements on means of implementation, including finance, technology and capacity building, are pre-requisites for most developing countries to deliver their commitments on climate change.

GOAL – FAIR RULES OF THE GAME FOR ALL ACTORS

Target 1 – Ensuring sustainability reporting

Ensuring corporate sustainability reporting and disclosure of carbon risk and sustainability information integrated into their reporting cycle, especially for publicly listed and large companies.

Target 2 – Funding low-carbon technology

Ensure that the need for banks, pension funds and insurance companies to rapidly reduce investment in fossil fuels and to accelerate investment in low-carbon technology, especially for energy and energy efficiency.

Target 3 – Transferring low-carbon technologies

In cooperation with the private sector, make available benefits of new technologies solutions for low-carbon development and climate adaptation.

Target 4 – Making investments work for the climate

Ensure that all development assistance is assessed to be ‘climate sensitive’, by tracking investment to ensure that they are disaster resilient, that they work for adaptation and they do not add to greenhouse gas emissions.

How this goal delivers on poverty eradication, mitigation and adaptation

It is important to address the most immediate needs of poor people urgently but this effort would be a meaningless gesture if the root causes of poverty and exclusion are left unchanged. The new global partnership is a fundamental building block for the structural changes required to address poverty and the space in which contributions and sharing mechanisms for means of implementation is located. A good starting point is to ensure fair and equitable rules of the game when it comes to governance, transparency, reporting and funding.

Equitable rules for global partnerships and means of implementation also will result in more environmentally-sound decision making and support economies to operate within a safe ecological space, thus contributing to climate change mitigation and adaptation. Arguably it is one of the most important contributions as it speaks to the structural causes of climate change and poverty.

F. Essential climate targets for other goals

Sections A. to E. above each present a ‘climate-smart’ goal on water, food and agriculture, energy, health and global partnerships. In addition to these sectorally focused climate targets, targets aimed at driving global or national actions on climate change are needed.

This section F presents two alternative sets of essential climate targets which need to be included in other goals, for example on poverty eradication, means of implementation, sustainable consumption and production, economic growth, infrastructure or industrialisation or even in the above outlined goals, especially the one on global partnerships (to avoid confusion we have not included the targets in the global partnership goal above).

These targets specifically related to climate mitigation and adaptation are essential for both poverty eradication and sustainable development. The two alternative sets listed below are defined in terms of the national- and global-level actions needed to address climate change, and each stack up to the range of actions needed to address climate change comprehensively across the SDG framework. Care would be needed to ensure these minimum targets are not lost during the mainstreaming process. These targets would be in addition to those defined above which are aimed at addressing the climate change dimensions specific to sectoral goal areas.

Given that it is people in poverty who are most vulnerable to climate change⁵², priority must be given to supporting those countries that are most vulnerable to the impacts of climate change to adapt, and to enabling the low-income countries to make the necessary transition to a low-carbon economy. This doesn't in any way let the high-income and high-emitting countries off the hook. In a universal framework aimed at sustainable development as well as poverty eradication, focus is also needed on driving the rapid emissions reductions needed in those countries that have already reaped the economic benefits of emitting greenhouse gases into the atmosphere.

The decision which set of targets below to choose from depends on the level of ambition that is intended to be achieved. The explanation for the difference between the two sets of targets can be found in the chapters on options 3 and option 4.

SET OF ESSENTIAL CLIMATE TARGETS FROM OPTION 3: FULFILLING THE UNFCCC COMMITMENTS TO TACKLE CLIMATE CHANGE

Target 1 – Reducing global greenhouse gas emissions fairly and equitably

Greenhouse gas emissions peak globally before 2020 and decline rapidly by 2030 in line with the UNFCCC agreement to keep global warming below 2°C and in accordance with equity and its principle of common but differentiated responsibilities and respective capabilities.

Target 2 – Implementing national low-carbon development strategies

By 2020 all countries have implemented their economy-wide, low-carbon development strategies with defined mitigation targets for 2020 and 2030, as consistent with the global goal of keeping global warming below 2°C.

Target 3 – Implementing national adaptation strategies

By 2030 all countries have implemented adaptation strategies, programmes and plans that are in line with managing the impacts of dangerous climate change, and have mainstreamed them into all development strategies and programmes.

Target 4 – Financing developing countries' adaptation and mitigation needs

By 2020, an additional \$100 billion (US) a year is available to developing countries from developed countries for adaptation and mitigation purposes, of which at least 50% is available for adaptation purposes⁴⁷.

ALTERNATIVE SET OF ESSENTIAL CLIMATE TARGETS FROM OPTION 4: PREVENTING DANGEROUS CLIMATE CHANGE

Target 1 – A collective global effort to staying below 2°C – setting a global carbon budget

Between 2015-2030 global cumulative emissions of greenhouse gases are limited to around 580 GtCO₂e, and global annual emissions have declined to less than 40 GtCO₂e/yr by 2020, and less than 24 GtCO₂e per year by 2030 to keep global warming between 1.5 and 2°C this century.

Target 2 – Fair and equitable reductions in the carbon-intensity of economies

By 2030 the carbon intensity of the global economy has fallen by x%, and all countries have achieved carbon intensity improvement rates of at least x% per year (CO₂e/GDP-ppp) against a historical baseline of x.

Target 3 – Building the adaptive capacity of countries to deal with dangerous levels of global warming

By 2030 all countries have the adaptive capacity to withstand an increase in global temperature of at least 2°C.

Target 4 – Protecting the most vulnerable populations from the impacts of climate change

By 2030 the most vulnerable populations within all countries are protected from the impacts of climate change.

Target 5 – Ensuring a climate risk-based approach

By 2020 all countries have science-based and participatory national climate risk assessments developed and mainstreamed into development strategies and programmes.

How these targets deliver on poverty eradication, mitigation and adaptation

These targets are defined to meet global and national needs for climate change mitigation and adaptation specifically. Given the direct and indirect impacts of climate change on those that are marginalised and economically and socially vulnerable the implementation of these targets would have direct and indirect benefits for poverty eradication that increase over time due to reductions in climate change and its impacts. However, as we noted at the beginning of this paper, climate action is not necessarily pro-poor, so care would be needed to ensure that the design and implementation of targets are based on the principles of equity, fairness, and capability as well as urgency. Meeting these targets could be defined as successful only if they contribute to direct development benefits for poor, vulnerable and marginalised communities.

Of course, overall tackling climate change is crucial to manage current and future risks for poor people's well-being – and in some cases their survival. Direct impacts on their livelihoods include food security, nutrition and agriculture, access to energy, water and sanitation, health and income poverty. Indirect impacts include education, gender equality, peace and security and jobs⁵⁴.

OPTIONS 2-4: CLIMATE GOAL OPTIONS

Option 1 outlined in great detail how climate action can be mainstreaming meaningfully into the post-2015 framework, using water, food and agriculture, energy and global partnerships and listing additional essential climate targets that need to be mainstreamed. The following options 2 to 4 each present a different version of a climate change goal that could be integrated in the goal framework in addition to mainstreaming across all other relevant goals.

The different options for climate change goals in addition to mainstreaming are:

- Option 2: A ‘plus climate change’ goal, with the concrete example of a ‘DRR plus climate’ goal as one possible combination.

WATER	FOOD & AGRICULTURE	HEALTH	ENERGY	GLOBAL PARTNERSHIPS	DRR + CC
Climate-related target(s) on water	Climate-related target(s) on food & agriculture	Climate-related target(s) on health	Climate-related target(s) on energy	Climate-related target(s) on global partnerships	Target(s) on mitigation
					Target(s) on adaptation
					Target(s) on DRR and resilience

- Option 3: A climate change goal based on UNFCCC commitments made to date.

WATER	FOOD & AGRICULTURE	HEALTH	ENERGY	GLOBAL PARTNERSHIPS	CLIMATE CHANGE UNFCCC BASED
Climate-related target(s) on water	Climate-related target(s) on food & agriculture	Climate-related target(s) on health	Climate-related target(s) on energy	Climate-related target(s) on global partnerships	Target(s) on mitigation
					Target(s) on adaptation

- Option 4: A climate change goal with targets on actions required to address climate change according to scientific recommendations.

WATER	FOOD & AGRICULTURE	HEALTH	ENERGY	GLOBAL PARTNERSHIPS	CLIMATE CHANGE SCIENCE BASED
Climate-related target(s) on water	Climate-related target(s) on food & agriculture	Climate-related target(s) on health	Climate-related target(s) on energy	Climate-related target(s) on global partnerships	Target(s) on mitigation
					Target(s) on adaptation

Whichever option is chosen, the value of a climate change goal is that it tackles climate change as an issue for development in its own right and gives it the prominence it deserves as one of the greatest global barriers to ending poverty and sustainable development. This profile will help to increase its visibility as an issue for development and to focus political attention and resources on the actions needed.

As mentioned in option 1 of this paper, a stand-alone climate change goal does not however preclude the need for climate change mainstreaming as ‘climate-smart’ goals are likely to provide the necessary additional support for achieving the objectives of a climate change goal. The two approaches are complementary and serve slightly different purposes. While mainstreaming treats climate change as secondary to another goal area, it facilitates its integration across different issue areas, and drives the specific sectoral actions needed. A climate change goal on the other hand articulates the climate actions needed as well as communicating the critical importance of climate change to development.

Ensuring that other goals also include climate-relevant targets will be critical for guiding the transformations necessary, particularly in the energy, agricultural, transport, manufacturing and forestry sectors.

Successfully addressing climate change depends on raising political ambition and the public profile of climate risks, and increasing action to reduce carbon emissions across all sectors and in all countries. A climate goal would send a strong signal to the UNFCCC that an ambitious, globally binding climate deal that avoids dangerous climate change and facilitates a rapid transition to low carbon development is essential for sustainable development and ending poverty.

OPTION 2: INCLUDING A 'PLUS CLIMATE CHANGE' GOAL

WATER	FOOD & AGRICULTURE	HEALTH	ENERGY	GLOBAL PARTNERSHIPS	DRR + CC
Climate-related target(s) on water	Climate-related target(s) on food & agriculture	Climate-related target(s) on health	Climate-related target(s) on energy	Climate-related target(s) on global partnerships	Target(s) on mitigation
					Target(s) on adaptation
					Target(s) on DRR and resilience

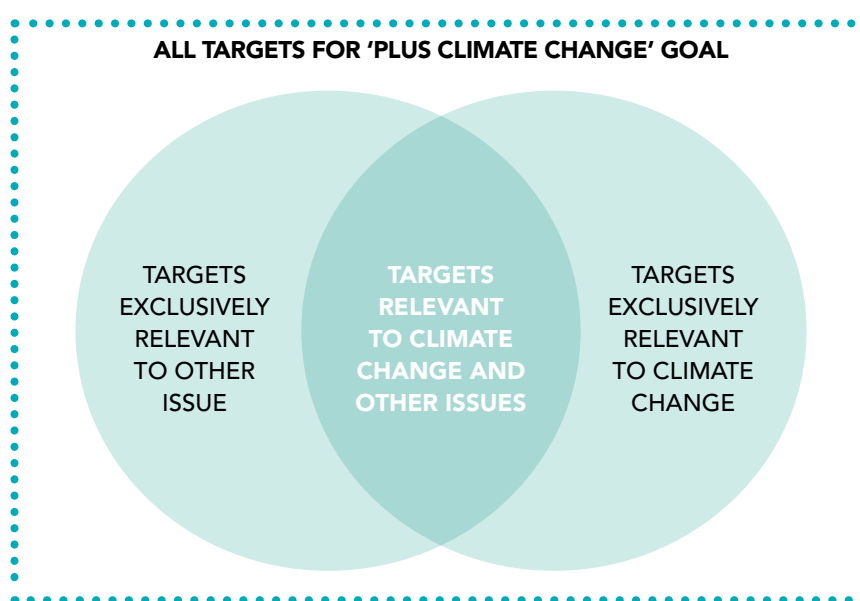
This option presents the first of three versions of a climate change goal in addition to mainstreaming. It suggests combining a climate goal with another related goal, for example, Disaster Risk Reduction (DRR), and is intended to be in addition to mainstreaming.

The most substantial difference to a 'climate-smart' goal as described in option 1 is that it has 'climate' in the goal title. This would have the benefit of raising its profile in the overall framework. On the other hand, merging two issues risks undermining the credibility of each issue as a development challenge in its own right. Another problem is the risk of climate change becoming conflated with the second issue in the goal, potentially reducing the political imperative for climate action.

The minimalist approach to option 2 is to simply add 'climate change' to the title of a goal that already includes climate-related targets to show that tackling climate change is key to successful implementation of the goal in question. However, this minimalist approach risks ignoring targets that are important but not already part of the goal.

A more coherent 'plus climate change' approach would be to not only add climate change to the goal title but also add targets that are not already covered in the goal. This would include all of the targets necessary for climate action, but would pose a (surmountable) challenge in terms of how to bring two issues together in a joined-up way. It also limits the number of possible targets as they have to be shared across two issues in one goal.

Selecting targets for a more coherent 'plus climate change' goal can again be approached in two ways. Either the targets address only issues that are relevant for both topics covered in the 'plus climate change' goal (the overlapping area of both circles in the graphic below) or the targets cover everything relevant for each issue (represented by the dotted square in the graphic below). The latter approach seems preferable because it avoids important issues being left out and supports comprehensive action. Since there is – as mentioned – a limited number of targets, it might require tough decisions on priorities and trade-offs.



Several combinations for 'plus climate' goals are possible. One example – DRR plus Climate Change – is provided below for illustrative purposes.

EXAMPLE: Disaster Risk Reduction (DRR) plus Climate Change goal

Disaster Risk Reduction (DRR) is an obvious candidate for a 'plus climate change' goal. The difference of a 'DRR plus Climate Change' goal compared to a 'climate-smart' would be that it has 'climate change' in the goal title.

According to the UN task team, addressing the dual and inter-related challenges of climate change and disaster risk is likely to be critical to the success of the post-2015 framework. Climate change will lead to more frequent and more intense extreme weather events⁵⁵ that have the potential to further escalate existing and causing additional humanitarian crises. Over the last 30 years there has been an evolving recognition that action on climate change and disaster risk reduction are an integrated part of sustainable development. Following several UN agreements, such as the Hyogo framework, the UNFCCC and the Rio+20 conference, disaster risk reduction and climate change action, including mitigation and adaptation, are seen not only as an imperative to protecting development investments but also an opportunity for a transformative shift.⁵⁶ Recent analysis has shown that high levels of poverty will still be seen in 2030 if a business as usual approach to poverty reduction, disaster risk reduction and climate change continues.⁵⁷

Disaster risk management and building resilience against climate induced shocks and stresses would therefore be a good combination for a 'plus climate' goal in the post-2015 framework. Already 7 out of 10 disasters are climate related^{58,59}.

While mortality rates from disasters are decreasing (due to DRR), the number of disasters as well as the number of people affected by disasters is increasing and so are the related economic losses, placing vulnerable communities at greater risk of falling into and becoming trapped in poverty.

While climate change is a driver for weather-related hazards, not all disasters are climate-induced. It is important to ensure that those disasters are also covered in the 'DRR plus climate change' goal, taking the approach recommended in the graphic above to encompass all issues relevant to both components of the merged goal. Targets on addressing global warming, however, could sit awkwardly under a 'DRR plus climate change' goal.

The 'DRR plus climate' goal below is made up of one target specifically related to DRR and placeholders for essential climate targets on mitigation and adaptation to be selected from the target lists in option 1.F.

GOAL – MANAGING DISASTER AND CLIMATE RISKS

Target 1 – Disaster Risk Reduction

Reduce the impact of disasters on poverty eradication and economic growth, including the impact on poor men and women.

Targets 2 to x – Climate change mitigation

See option 3 and 4 below for examples.

Targets x to x – Climate change adaptation

See option 3 and 4 below for examples.

How this DRR target will help to deliver on climate change adaptation, mitigation and poverty reduction

Climate change will lead to more frequent and more intense extreme weather events⁶⁰ which will likely cause more disasters and have the potential to further escalate existing and cause additional humanitarian crises. Such disasters, especially those linked to drought, can be the most important cause of impoverishment, cancelling progress on poverty reduction. By 2030 up to 325 million extremely poor people will be living in the 49 most hazard-prone countries in South Asia and sub-Saharan Africa⁶¹ and when disaster strikes poor countries and people are hit harder.

Target 1 proposed here is framed around reducing the losses due to disasters of the poorest and most vulnerable people and countries and could promote increased investment in DRR and climate change adaptation.

This target on disasters balances two mutually-reinforcing elements. Firstly it takes a people-centred approach, as required by a framework with poverty reduction at its heart. Reducing the impacts of disasters on poor people and hence on poverty levels is identified as a core ingredient for a disasters target. Secondly, the target has a focus on economic growth in recognition that economics and finance are key drivers of both public and private actions. Investment portfolios and trajectories need to change substantially in order to bring environmental and social impacts in balance with economic benefits, and avoid business-as-usual that would lead to unacceptable levels of disaster risk. This economic focus is relevant to developing, emerging and developed economies alike.

They could also provide additional support for climate change adaptation to reduce losses from climate-change-related disasters. As there is a limit to how far climate change can be adapted to, improved recording of disaster losses could also promote increased efforts on climate change mitigation.

OPTION 3: INCLUDING A CLIMATE CHANGE GOAL: FULFILLING THE UNFCCC COMMITMENTS

WATER	FOOD & AGRICULTURE	HEALTH	ENERGY	GLOBAL PARTNERSHIPS	CLIMATE CHANGE UNFCCC BASED
Climate-related target(s) on water	Climate-related target(s) on food & agriculture	Climate-related target(s) on health	Climate-related target(s) on energy	Climate-related target(s) on global partnerships	Target(s) on mitigation Target(s) on adaptation

Like the previous option 2 the objective of this and the following climate goal (option 4) is to raise the visibility of climate change as a key issue for sustainable development and poverty eradication, and to accelerate the actions needed for tackling it. Unlike the previous option, which incorporated climate change with another related goal area, options 3 and 4 treat climate change as a distinct issue in its own right. Option 3 is based on existing UNFCCC agreements and option 4 on the actions actually needed to prevent dangerous climate change. The difference between them is related to the levels of political ambition and the level of climate risk that countries are prepared to accept.

The goal and targets proposed here are based directly on the agreements that have already been reached by the 196 Parties to the UNFCCC and so should not be politically controversial or duplicate the ongoing climate negotiations. However, because of this they are unambitious and will not deliver the scale or rate of changes needed to prevent dangerous climate change as it is currently defined under the Convention. This option therefore carries with it a higher level of climate risk and provides lower climate protection for those communities who are the focus of the post-2015 framework, i.e. those living in poverty.

The value of a goal framed in these terms is that it reinforces the need for countries to implement the commitments they have already made, and puts climate change in the poverty eradication frame, recognising that the implementation of both processes post-2015 and UNFCCC will need to be closely coordinated or combined, (at the national level. It could also reduce the risk of the UNFCCC politics interfering with the post-2015 negotiations. *However, it must be emphasised this is a low-ambition goal option, that is not in keeping with the aspirational and high-ambition nature of the post-2015 framework.*

UNFCCC BACKGROUND

The ultimate objective of the UNFCCC is to *stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system*⁶² in Cancun (2010). Parties agreed that achieving this objective requires that global warming be kept to below 2°C of the preindustrial temperature. They also agreed to review this temperature goal with a view to strengthening it to 1.5°C⁶³.

According to the latest IPCC report the 2°C temperature goal will be exceeded unless additional efforts are made to constrain emissions.⁶⁴ The pledges made by UNFCCC parties in Cancun, without additional mitigation, would likely lead to global mean temperature increases higher than 2°C this century⁶⁵.

The principles (Article 3) and commitments (Article 4) of the UNFCCC also provide important context to the decisions taken by Parties, and so for the targets proposed below. All Parties have committed to cutting their greenhouse gas emissions and addressing climate impacts. According to the Convention's Principles, all Parties have the right to sustainable development, and all actions must be taken on the basis of equity and in accordance with Parties' common but differentiated responsibilities and respective capabilities. However, it is also agreed that developed countries should take the lead in combating climate change, should provide the financial resources required by developing countries for implementation, and facilitate their access to environmentally sound technologies. Furthermore, developing country implementation commitments are caveated by provisions that state that they are dependent on developed countries meeting their commitments to provide financial, technology transfer, and capacity-building support to them, and that economic and social development and poverty eradication are their first and overriding priorities. This hasn't however prevented some of the progressive developing countries from agreeing ambitious national mitigation and adaptation targets. Costa Rica for example has committed to becoming carbon neutral by 2021, and the Maldives by 2020⁶⁶.

The targets proposed below are based on the decisions taken under the Convention to date. See Annex 1 for the relevant text.

GOAL – FULFILLING THE UNFCCC COMMITMENTS TO TACKLE CLIMATE CHANGE

Target 1 – Reducing global greenhouse gas emissions fairly and equitably

Greenhouse gas emissions peak globally before 2020 and decline rapidly by 2030 in line with the UNFCCC agreement to keep global warming below 2°C and in accordance with equity and its principle of common but differentiated responsibilities and respective capabilities.

Target 2 – Implementing national low-carbon development strategies

By 2020 all countries have implemented their economy-wide, low-carbon development strategies with defined mitigation targets for 2020 and 2030, as consistent with the global goal of keeping global warming below 2°C.

Target 3 – Implementing national adaptation strategies

By 2030 all countries have implemented adaptation strategies, programmes and plans that are in line with managing the impacts of dangerous climate change, and have mainstreamed them into all development strategies and programmes.

Target 4 – Financing developing countries' adaptation and mitigation needs

By 2020, an additional \$100 billion (US) a year is available to developing countries from developed countries for adaptation and mitigation purposes, of which at least 50% is available for adaptation purposes⁶¹.

Target 1 – Reducing global greenhouse gas emissions fairly and equitably

Greenhouse gas emissions peak globally before 2020 and decline rapidly in-line with the UNFCCC agreement to keep global warming below 2°C and in accordance with equity and its principle of common but differentiated responsibilities and respective capabilities.

Parties to the UNFCCC have recognised that climate change is “one of the greatest challenges of our time” and the need to keep global warming below 2°C (this century)⁶⁸ for preventing dangerous climate change⁶⁹. They have also agreed that “deep cuts in global emissions are required”⁷⁰ and that this will require the “peaking of global and national emissions as soon as possible”⁷¹ – with developed countries needing to peak sooner than developing countries⁷². While Parties have agreed that they will work towards identifying a timeframe for global peaking of greenhouse gas emissions “based on the best available scientific knowledge and equitable access to sustainable development”,⁷³ so far no agreement on a deadline has been formally reached.

In line with these decisions we propose a target on the peaking and decline of global greenhouse gas emissions. We recognise that while Parties have not formally agreed on a peaking date or on the total level of emissions reductions needed, they did, in the Bali Action Plan⁷⁴, in the context of achieving the ultimate objective of the Convention, refer to a table provided in the IPCC Fourth assessment report (4AR) which provided figures for the global reduction in CO₂ emissions that would be needed by 2050 (50-85% below 2000) and the date by which they would need to peak (2000-2015) to keep global warming below 2-2.4° C. The timeframe of 2020 is proposed because although this is later than the 2015 deadline specified in the IPCC 4AR, it is unrealistic to set a target for the year in which the post-2015 framework starts.

Obviously how much progress is made on reducing emissions at the global level will depend on how much progress is made at the country level. The differentiated national level targets will need to reflect the UNFCCC's ultimate objective of keeping global warming below 2°C, as well as its principles and commitments. The principle of equity and *common but differentiated responsibilities and respective capabilities* would need to be respected, alongside the commitment that developed countries should take the lead in reducing their emissions and providing the necessary financial, technological and capacity support to developing countries⁷⁵. According to the Cancun Agreements, this would mean that developed countries as a group need “to reduce their CO₂ emissions by 25-40% below 1990 by 2020”⁷⁶, while developing countries would need to “deviate their emissions relative to business as usual emissions in 2020”⁷⁷.

If Parties agree to revise the global temperature goal in 2015 the target figures will need to reflect this.

Target 2 – Implementing national low-carbon development strategies

By 2020 all countries have implemented their economy-wide, low-carbon development strategies with defined mitigation targets for 2020 and 2030, as consistent with the global goal of keeping global warming below 2°C.

The means by which countries should implement their emission reduction commitments were agreed by Parties in Cancun (2010). A supporting target aimed at driving national level implementation is proposed in line with this agreement. Parties have recognised that addressing climate change *requires a paradigm shift towards building a low-carbon society*, and the role that low carbon strategies can play in delivering sustainable development⁷⁸. To support this they have agreed that “*developed country parties should develop low-carbon development strategies or plans*”⁷⁹, and *encouraged developing country parties to do the same*⁸⁰. These have been defined as forward looking national economic development strategies that encompass low-emission and or climate-resilient economic growth⁸¹, and are the key strategic policy mechanisms by which countries can deliver the emission reduction commitments they have made or will make in the future⁸².

How national low-carbon development strategies are defined and implemented, and over what timeframe, will determine whether the global temperature target can be met. We recognise that implementation is a long-term process and, for many countries, is likely to extend well beyond 2030. By focusing on implementation, this target aims to encourage countries to move beyond the development of strategies to implementation as soon as possible. Moreover, economy-wide strategies for emissions reductions over the medium to long-term (i.e. 2015-2030/2050) are needed and, while this would go beyond what many countries have done to date, it would be in keeping with the Convention principle that policies and measures should *be comprehensive, cover all relevant sources, sinks and reservoirs, and comprise all economic sectors, and that they be integrated with national development programmes*⁸³.

Target 3 – Implementing national adaptation strategies

By 2030 all countries have implemented adaptation strategies, programmes and plans that are in line with managing the impacts of dangerous climate change, and have mainstreamed them into all development strategies and programmes.

Even if emissions are reduced, a certain amount of warming is already locked into the climate system – and the impacts of past emissions are already being felt⁸⁴. At least 50,000 people were killed during the 2011 east African drought⁸⁵ and an estimated 70,000 people died during the 2003 European heatwave,⁸⁶ which were at least partially due to climate change.

Defining global targets for adaptation that reflect what has been agreed through the UNFCCC is difficult because Parties have not agreed to a global long-term goal for adaptation in the same way that they have for mitigation. Parties are however committed to *implementing national programmes and measures to facilitate adaptation and to cooperating in preparing for adaptation*⁸⁷. Parties also agreed in Cancun to “*enhance action and international cooperation on adaptation*”⁸⁸ through (amongst other things) “*planning, prioritising and implementation, impact, vulnerability and adaptation assessments, research, development and capacity building, and strengthening institutional capacities and enabling environments.*”⁸⁹

Further, they defined which countries should get priority support: *funding for adaptation will be prioritised for the most vulnerable developing countries, such as the least developed countries, small island developing States and Africa.*⁹⁰

This target aims to support these decisions and to ensure that by 2030 all countries, but particularly those that are most vulnerable to climate impacts (LDCs, SIDs and African countries), have implemented national adaptation strategies that are appropriate for managing the impacts of dangerous climate change. National strategies should be defined in terms of the national level impacts projected to occur under at least 2°C of global warming (or more if countries consider there is a realistic risk that global warming will be higher than this). This is an important point because temperature increases are not uniform across the world with some regions experiencing greater than average increases (and others less). In subtropical Africa and the northern Sahara for example, temperatures are projected to rise at 1.5 to 2 times the global rate.⁹¹ Evidence of this is already being seen with parts of Africa, Asia, north America, and south America experiencing surface temperature increases of up to 2.5°C between 1901-2012 despite the global average surface temperature increase of only 0.89°C.⁹²

Achieving this target will be dependent on how much progress is made against Target 4. The target proposed is also in keeping with the principle that policies and measures should *be integrated with national development programmes*⁹³.

Target 4 – Financing developing countries' adaptation and mitigation needs

By 2020 an additional \$100 billion (US) a year is available to developing countries from developed countries for adaptation and mitigation purposes, of which at least 50% is available for adaptation purposes.⁹⁴

This target recognises that for developing countries to make substantive progress in implementing their mitigation and adaptation commitments, developed countries must fulfil the commitments they have made under Article 4 of the Convention, and in COP decisions, to provide financial, technological and capacity-building support.

In Copenhagen and again in Cancun, developed country parties committed *"in the context of meaningful mitigation actions... to mobilise jointly USD100 billion a year by 2020 to address the needs of developing countries."*⁹⁵ Parties also agreed that funding should be scaled-up, new and additional, predictable and adequate. However this money has been slow to materialise leaving an ever-growing commitment gap.

This target also specifies the need for at least 50% of climate finance to be allocated to adaptation so as to reinforce the decisions taken in Cancun (and subsequently) that the allocation of climate finance *needs to be balanced between adaptation and mitigation, and that funding for adaptation for the most vulnerable developing countries (LDCs, SIDS, Africa) will be prioritised*⁹⁶.

In Doha it was again emphasised that *"adaptation must be addressed with the same level of priority as mitigation"*⁹⁷.

OPTION 4: INCLUDING A CLIMATE CHANGE GOAL: PREVENTING DANGEROUS CLIMATE CHANGE

WATER	FOOD & AGRICULTURE	HEALTH	ENERGY	GLOBAL PARTNERSHIPS	CLIMATE CHANGE SCIENCE BASED
Climate-related target(s) on water	Climate-related target(s) on food & agriculture	Climate-related target(s) on health	Climate-related target(s) on energy	Climate-related target(s) on global partnerships	Target(s) on mitigation Target(s) on adaptation

A different option more in keeping with the aspirational and transformational ambitions of the post-2015 framework would be a goal that speaks to the concerns already articulated by over 100 countries including the least developed countries, small island developing states, other low-lying countries, and African countries;⁹⁸ for them the threshold for dangerous climate change sits closer to global warming of 1.5°C than 2°C. Others, including the Executive Secretary of the UNFCCC⁹⁹ and members of the climate science community¹⁰⁰ have supported this call.

This goal is framed less around the commitments Parties have made under the UNFCCC and more around the actions needed if the global goal of keeping global warming below 2°C is to remain within reach. This goal option is undoubtedly the most politically controversial as it goes beyond what Parties have agreed to under the UNFCCC. It is, however, the most appropriate option technically and morally. After all, the post-2015 framework is meant to be a universal framework for meeting the critical global challenges to poverty eradication and sustainable development. When considered in this context, there is no doubt that the framework should include high ambition climate change targets, that if implemented would prevent dangerous climate change and provide protection from its impacts. This goal includes the same elements as in option 3: greenhouse gas emissions must be reduced rapidly globally, climate impacts addressed and climate actions integrated within all national development mechanisms. But a business-as-usual approach won't deliver what is needed. Higher ambition, global collaboration and better defined targets are required for there to be a realistic chance of preventing dangerous climate change. Obviously success also depends on how well climate action is embedded in other goal areas.

The targets proposed under this option place a limit on the total greenhouse gases to be emitted globally over the lifetime of the post-2015 framework by setting a global carbon budget. It sets out an emissions reduction pathway that, if agreed, could keep global warming within 1.5-2°C this century. Countries will need to agree how the global carbon space should be allocated between them in keeping with the principles of equity, common but differentiated responsibilities and respective capabilities. We suggest that national carbon intensity improvement targets be set, but recognise that there are many approaches to choose from.

Countries will also continue to need to reduce their vulnerability to climate change by building their adaptive capacity, and developing risk-management strategies for those threats that can't be adapted to. Ensuring that all countries, but developing countries in particular have the financial and technological capacity necessary to deliver emissions reductions and adaptation will be central to the delivery of this goal. This will require greater coordination between development and climate change financial mechanisms and donors, more partnerships and a larger role for the private sector.

GOAL – PREVENTING DANGEROUS CLIMATE CHANGE

Target 1 – A collective global effort to staying below 2°C – setting a global carbon budget

Between 2015-2030 global cumulative emissions of greenhouse gases are limited to around 580 GtCO₂e, and global annual emissions have declined to less than 40 GtCO₂e/yr by 2020, and less than 24 GtCO₂e per year by 2030 to keep global warming between 1.5 and 2°C this century.

Target 2 – Fair and equitable reductions in the carbon-intensity of economies

By 2030 the carbon intensity of the global economy has fallen by x%, and all countries have achieved carbon intensity improvement rates of at least x% per year (CO₂e/GDP-ppp) against a historical baseline of x.

Target 3 – Building the adaptive capacity of countries to deal with dangerous levels of global warming

By 2030 all countries have the adaptive capacity to withstand an increase in global temperature of at least 2°C.

Target 4 – Protecting the most vulnerable populations from the impacts of climate change

By 2030 the most vulnerable populations within all countries are protected from the impacts of climate change.

Target 5 – Ensuring a climate risk-based approach

By 2020 all countries have science-based and participatory national climate risk assessments developed and mainstreamed into development strategies and programmes.

Target 1 – A collective global effort approach to staying below 2°C – setting a global carbon budget

Between 2015-2030 global cumulative emissions of greenhouse gases are limited to around 580 GtCO₂e, and global annual emissions have declined to less than 40 GtCO₂e/yr by 2020, and less than 24 GtCO₂e per year by 2030 to keep global warming between 1.5 and 2°C this century.

This idea of a global carbon budget is not new¹⁰¹ but the recent discussion of it in the IPCC's Fifth Assessment Report (5AR) has given it renewed scientific legitimacy¹⁰² and provides a useful framing for the level of ambition that countries need to be aiming for to keep global warming within 1.5°-2°C this century. By agreeing to keep global warming to below 2°C, countries have in effect agreed that global greenhouse gas emissions need to be constrained, as the point at which global temperature stabilises over the long term depends on the total amount of greenhouse gases emitted over time. When emissions peak and how high are also important factors because higher emissions in earlier decades imply lower (and possibly negative) emissions later on¹⁰³. Staying below 2°C requires emissions to peak globally at the latest between 2014 and 2020¹⁰⁴, and a rapid decline in emissions thereafter. The earlier the peak occurs and the lower the emissions, the more possible it will be to meet 1.5°C.

In keeping with the highly ambitious nature of this goal we have proposed a target that would give a greater than 66% chance of staying below 2°C and could keep a 1.5°C goal within reach, by suggesting that a carbon budget be established for the lifetime of the post-2015 framework, and, annual emission targets for 2020 and 2030. We suggest a carbon budget for 2015-2030 of about 580 GtCO₂e¹⁰⁵. This is based on a budget of 715 GtCO₂/1050 GtCO₂e for all greenhouse gases (GHG) for 2012-2050, (and a total budget of 780 GtCO₂ /1390 GtCO₂e for all GHG for 2012-2100). It should be noted that this is a more conservative budget than that given by the IPCC in the 5AR for a 66% probability of staying below 2°C, and is within the range of the budgets provided for achieving 1.5°C (refer box). In line with this budget we propose annual emission targets for 2020 and 2030 of less than 40 GtCO₂e, and 24 GtCO₂e respectively¹⁰⁶.

According to the IPCC 5AR, to have a 66% probability of stabilising at 2°C this century, the total amount of CO₂ emitted between 1870-2100 needs to be limited to about 1000 GtC/367- GtCO₂¹⁰⁷. If non CO₂ gases (from RCP 2.6) are included, the size of the budget reduces to 790 GtC/2900 GtCO₂¹⁰⁸ which, for the period 2012 to beyond 2100, translates into a budget of 1010 GtCO₂¹⁰⁹.

But the probability of stabilising at 2°C or below also depends on other factors, such as how emissions reductions are distributed over time, whether non-CO₂ greenhouse gases are included, and whether negative emissions are required. The IPCC estimates for example that global CO₂e emissions would need to be reduced by 70-95% compared to 2010 levels by 2050, and 110-120% below 2010 levels by 2100, if 1.5°C is the global goal¹¹⁰.

In designing this target we chose to follow the “emergency mobilisation pathway” for staying below 2°C outlined by EcoEquity (2014)¹¹¹. This approach establishes an all greenhouse gas budget for 2012-2100 of 780GtCO₂, requires an early peak for emissions and larger reductions sooner rather than later over the budget period, and doesn't rely on negative emissions. Our budget proposal falls within the range given by the IPCC as having a 50% or more probability of keeping global warming to 1.5 °C,¹¹² and well within the range they propose for a 66% probability of limiting global warming to within 2°C.

How the carbon budget should be allocated between countries (and over time) is a political issue best dealt with through the UNFCCC in line with equity and in accordance with its common but differentiated responsibilities and respective capabilities principle. But cutting global emissions to the levels suggested above will require action by all countries, across all sectors, and significantly greater commitments than have currently been made under the UNFCCC. At the same time, the development needs of the least-developed and other low-income

countries must be met, and growth in emissions for these countries over the short-term will be necessary. Immediate and rapid reductions are needed by the rest of the world to offset this growth, alongside the mobilisation of the financial and technological support needed by developing countries to develop low-carbon and climate resilient economies.

Target 2 – Fair and equitable reductions in the carbon-intensity of economies

By 2030 the carbon intensity of the global economy has fallen by x%, and all countries have achieved carbon intensity improvement rates of at least x% per year (CO₂e/GDP-ppp) against a historical baseline of x.

The proposed target aims to reduce the carbon intensity of the global economy through the decoupling of carbon emissions from countries' economic growth. The rate of improvement defined at the national level should be in accordance with principles of fairness and equity and based on a country's specific economic context, including their mitigation potential and capacity. While intensity targets can provide less certainty regarding emission reductions than absolute targets¹¹³, and establishing appropriate national reduction rates is complex¹¹⁴, this approach accommodates the need for countries to grow their economies while encouraging the reduction of greenhouse gas emissions through decoupling. How successful it is in delivering the degree of ambition needed will depend on the historical baselines chosen and how far beyond business-as-usual countries agree to go – the rate of intensity decline must be greater than the rate of GDP growth. But by setting this target in the context of the absolute limits set by a global carbon budget, and a 2015-2030 emission reduction pathway, it is hoped that countries will agree to ambitious and far-reaching carbon intensity reduction targets that add up to the global effort needed to meet the long term global goal of 1.5 or 2°C.

This target is proposed in terms of CO₂e to capture emissions other than CO₂ prevalent outside the energy and transport sector (e.g. agriculture and forestry) and PPP to reduce the effect of currency fluctuations and different price levels in different countries.

Target 3 – Building the adaptive capacity of countries to deal with dangerous levels of global warming

By 2030 all countries have the adaptive capacity to withstand an increase in global temperature of at least 2°C

In addition to the need to reduce global emissions, action is needed over the lifetime of the framework to reduce the vulnerability of countries to climate change, and to build their capacity to respond to climate change and its risks. How much adaptation is needed is strongly dependent on how much progress is made in cutting emissions, and how vulnerable communities are to climate change, and also on progress achieved under the other goals (for example in building institutional and economic capacity)¹¹⁵.

The proposed target aims to ensure that by 2030 all countries have built national adaptive capacity for dealing with the climate change impacts that will accompany global warming of at least 2°C. There is no universally agreed definition of national adaptive capacity, and no one approach to building or measuring it. However, for the purposes of this target we have adopted the definition provided by the IPCC: that adaptive capacity is the potential, capability, or ability of a system to adapt to climate change stimuli or its impacts¹¹⁶. It is recognised as being highly differentiated between and within countries¹¹⁷ and is generally agreed to be determined by a range of different factors including human capital; information and technology; material resources and infrastructure; organisations and social capital; political capital, wealth and financial capital; and institutions and entitlements.¹¹⁸ For countries to build their adaptive capacity they must address both climate threats and long-standing development needs, and integrate climate risk into national policy making and planning processes.¹¹⁹ There are a range of different composite indexes available that could be used for tracking progress against this target¹²⁰, but few include indicators covering all of the factors identified above and climate threat indicators. A new composite index would likely be required to enable the tracking of a country's progress in building its adaptive capacity and cross-country comparisons.

As in option 3 this target emphasises that countries should be preparing for the national climate impacts expected to occur under at least 2°C of *global* warming as they may be significantly greater than the global average.

Furthermore, while we have framed this as a global target, it can only be achieved by prioritising meeting the needs of developing countries and ensuring that they receive the financial, technological and capacity building

support that they require. To give an indication of the size of the investment needed to meet this global target, an estimated US\$30-US\$100+ billion a year is needed for adaptation investments alone¹²¹, but so far only US\$3.9 billion has been made available by the major multilateral funding mechanisms,¹²² leaving a significant finance gap.

Target 4 – Protecting the most vulnerable populations from the impacts of climate change

By 2030 the most vulnerable populations within all countries are protected from the impacts of climate change.

Vulnerability to climate change varies according to an individual's or groups' capacity to protect themselves from climate impacts, and this is determined by geographic location and social and economic factors such as age, gender, socio-economic status and class.¹²³ It is now accepted that those who are marginalised and socially or economically disadvantaged tend to be most vulnerable to climate change primarily because they have fewer resources at their disposal to help them to avoid, prepare for, respond to, or recover from climate-change-related events. Because of this, climate change adaptation efforts should be prioritised, not just for the most vulnerable countries (LDCs, SIDS and African countries) as already specified under the UNFCCC, but also for those segments of the population that are most at risk within all countries. Achieving this target will require all countries to undertake national vulnerability assessments to identify those groups that are most vulnerable, as well as their specific needs. Appropriate indicators of progress in meeting this target should include the proportion of finance allocated to address the adaptation needs of the most vulnerable populations, the % representation of poor or marginalised groups in national planning processes, and the provision of social protection systems targeting the poorest and most vulnerable populations for the purposes of dealing with climate-change-related losses and damages.

Target 5 – Ensuring a climate risk-based approach

By 2020 all countries have science-based and participatory national climate risk assessments developed and mainstreamed into development strategies and programmes.

A wide range of different actions will be required by countries to build their adaptive capacity. But success will depend on countries understanding the scale and nature of the climate change risks that they face, and this will only be possible if countries take a science-based and community participatory approach to assessing their climate risks.

ANNEX 1 – RELEVANT UNFCCC COMMITMENTS

Principles (Article 3) and Commitments (Article 4)

194 countries have agreed to the principles of the UNFCCC and made commitments to address climate change through mitigation, adaptation, financing, technology and capacity building. The Principles guide implementation and require Parties to “protect the climate system for the benefit of present and future generations... on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities” and recommend developed countries take the lead in combating climate change. Parties have the right to... sustainable development, and policies and measures should be appropriate for the specific conditions of each Party and ...(be) integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change. Policies and measures should...be comprehensive, cover all relevant sources, sinks and reservoirs, and adaptation, and comprise all economic sectors.

Under Article 4 all Parties are committed to formulating and implementing programmes to mitigate climate change and facilitate adaptation. But developed country Parties and other Parties in Annex I are specifically committed to the adoption of national policies and to taking mitigation measures. They are also committed to providing the *financial resources required by developing countries to meet the full incremental costs of implementing measures (for mitigation and adaptation), and to promote, facilitate and finance access to environmentally sound technologies and know how.* This includes supporting the development and enhancement of endogenous capacities and technologies of developing country Parties. The commitments of the developing countries are qualified by the provision that their implementation is dependent on developed countries meeting their commitments to provide financial resources and transfer of technology, and further by the recognition that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties.

Article 4.1 (b) of the Convention requires all Parties to formulate, implement, publish and regularly update national and where appropriate regional programmes containing measures to... facilitate adequate adaptation to climate change; and (e) to cooperate in preparing for adaptation...develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification as well as floods; (f) to take climate change considerations into account in their relevant social, economic and environmental policies and actions, and employ appropriate methods...with a view to minimising adverse effects on the economy, public health and on the quality of the environment of projects of measures undertaken to mitigate or adapt to climate change;

Article 4.4: developed country parties shall also assist the developing country parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects,

Article 4.8 parties shall give full consideration to what actions are necessary under the Convention... to meet the specific needs and concerns of developing country parties.

The Cancun Agreements (2010) (Unless referred to otherwise these are from Decision 1/CP.16)

Parties noted *The effects of climate change will be felt most acutely by those segments of the population that are already vulnerable owing to geography, gender, age, indigenous or minority status, or disability...*

Parties agreed that *climate change is one of the greatest challenges of our time and...all Parties share a vision for long-term cooperative action to achieve the objective of the Convention under its Article 2 including through the achievement of a global goal, on the basis of equity and in accordance with common but differentiated responsibilities and respective capabilities... (Section I. 1)*

Mitigation

Scaled up overall mitigation efforts that allow for the achievement of desired stabilization levels are necessary with developed country Parties showing leadership by undertaking ambitious emission reductions and providing technology, capacity building and financial resources to developing country Parties (Section I 2.(a))

Deep cuts in global greenhouse gas emissions are required according to science....with a view to reducing global greenhouse gas emissions so as to hold the increase in global average temperature below 2C above pre-

industrial levels and that parties should take urgent action to meet this long-term goal..." (Section I. 3)
Parties should cooperate in achieving the peaking of global and national greenhouse gas emissions as soon as possible, recognising that the time frame for peaking will be longer in developing countries, and bearing in mind that social and economic development and poverty eradication are the first and overriding priorities of development countries (Section I.6)

Also recognizing that the contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, *Climate Change 2007: Mitigation of Climate Change*, indicates that achieving the lowest levels assessed by the Intergovernmental Panel on Climate Change to date and its corresponding potential damage limitation would require Annex I Parties as a group to reduce emissions in a range of 25–40 per cent below 1990 levels by 2020, through means that may be available to these Parties to reach their emission reduction targets (Cancun Agreements 2010, Decision 1/CMP.6)

Addressing climate change requires a paradigm shift towards building a low carbon society that offers substantial opportunities and ensures continued high growth and sustainable development based on innovative technologies and more sustainable production and consumption and lifestyles while ensuring a just transition of the workforce that creates decent work and quality jobs...(Section I. 10)

Decides that developed countries should develop low-carbon development strategies or plans (Section III. A. 45)
Encourages developing countries to develop low-carbon development strategies or plans in the context of sustainable development (section III B.65)

Developing countries will take nationally appropriate mitigation actions in the context of sustainable development, supported and enabled by technology, financing and capacity building, aimed at achieving a deviation in emissions relative to business as usual emissions in 2020 (Section III B 48)

Decides that developed country Parties shall provide enhanced financial, technological and capacity building support for the preparation and implementation of nationally appropriate mitigation actions for developing country Parties and for enhanced reporting by these Parties (Section III.B.52)

Adaptation

In the **Bali Action Plan** (Decision 1/CP.13) Parties agreed to Enhanced action on adaptation: including consideration of:

(i) International cooperation to support urgent implementation of adaptation actions, including through vulnerability assessments, prioritisation of actions, financial needs assessments, capacity-building and response strategies, integration of adaptation actions into sectoral and national planning, specific projects and programmes, means to incentivise the implementation of adaptation actions, and other ways to enable climate-resilient development and reduce vulnerability of Parties, taking into account the urgent and immediate needs of developing countries that are particularly vulnerable to the adverse effects of climate change, especially the least developed countries and small island developing States, and further taking into account the needs of countries in Africa affected by drought, desertification and floods (Section 1(c) (i))

In the **Cancun Agreements** Parties agreed: that adaptation must be addressed with the same priority as mitigation and requires appropriate institutional arrangements to enhance adaptation action and support; (section I.2.(b))

All Parties were invited to enhance action under the Cancun Adaptation Framework, taking into account their common but differentiated responsibilities and respective capabilities and specific national and regional development priorities, objectives and circumstances, by undertaking the following...

- a. planning, prioritising and implementing adaptation actions including projects and programmes and actions identified in national and subnational adaptation plans and strategies, national adaptation programmes of action of the least developed countries, national communications, technology needs assessments and other relevant national planning documents;
- b. impact, vulnerability and adaptation assessments, including assessments of financial needs as well as economic, social and environmental evaluation of adaptation options
- c. enhancing climate change related disaster risk reduction strategies taking into consideration the Hyogo Framework for Action, where appropriate early warning systems, risk assessment and management and

sharing and transfer mechanisms such as insurance as the national, regional and international level (Section II, paragraph 14)

Developed country Parties were requested to provide developing country Parties, taking into account the needs of those that are particularly vulnerable, with long-term, scaled-up, predictable, new and additional finance, technology and capacity-building, consistent with relevant provisions to implement urgent, short-medium and long-term adaptation actions, plans, programmes and projects at the local, national, subregional and regional levels, in and across different economic and social sectors and ecosystems... (section II, para 18, Cancun Adaptation Framework).

Finance, technology and capacity building

Parties took note of the collective commitment by developed countries to provide new and additional resources, including forestry and investments through international institutions, approaching USD 30 billion for the period 2010-2012, with a balanced allocation between adaptation and mitigation, funding for adaptation will be prioritised for the most vulnerable developing countries, such as the least developed countries, small island developing States and Africa. (Section IV, A (95))

Decides that in accordance with the relevant provisions of the Convention, scaled up, new and additional, predictable and adequate funding shall be provided to developing country Parties, taking into account the urgent and immediate needs of developing countries that are particularly vulnerable to the adverse effects of climate change. (Section IV A (97)

Recognises that developed country Parties commit, in the context of meaningful mitigation actions and transparency on implementation, to a goal of mobilising jointly USD 100 billion per year by 2020 to address the needs of developing countries. (Section IV A (98)

Agrees that, in accordance with paragraph 19e) of the Bali Action Plan, funds provided to developing country Parties may come from a wide variety of sources, public and private, bilateral and multilateral, including alternatives sources. (Section IV A (99)

¹ The Green Climate Fund is the mechanism established for transferring money from developed to developing countries for the purposes of mitigation and adaptation and is the body responsible for raising the US\$100 billion promised by developed countries. At a recent meeting of the Board, members agreed that they would aim for a 50:50 balance between adaptation and mitigation over time.

² See: <http://www.twn.my/title2/climate/info.service/2014/cc140304.htm>

³ Rio+20, 2012: The future we want. Outcome document states: "climate change is a cross-cutting and persistent crisis and [we] express our concern that the negative impacts of climate change affect all countries and undermine the ability of all countries, in particular developing countries, to achieve sustainable development and the MDGs and threaten the viability and survival of nations." http://www.uncsd2012.org/content/documents/774futurewewant_english.

⁴ See IDS, 1013, Work with us and CAFOD 2013, Setting the post-2015 development compass: Voices from the ground

⁵ See UN HLP report, UN SDSN report and UN SG s report for Special Event in September 2013

⁶ IPCC 2013, Climate Change 2013: The Physical Science Basis. Summary for Policy Makers

⁷ UNEP, 2013: The Emissions Gap Report. A UNEP Synthesis Report. <http://www.unep.org/publications/ebooks/emissionsgapreport2013/>

⁸ Olseen, et al 2014. Chapter 13 Livelihoods and Poverty , in IPCC AR5, WG II report,

⁹ IPCC, AR5, WGII: Climate Change 2014: Impacts, Adaptation, and Vulnerability, from Working Group II of the IPCC, Summary for Policy-makers, March 2014

¹⁰ Olseen, et al 2014. Chapter 13 Livelihoods and Poverty , in IPCC AR5, WG II report,

¹¹ See, for example, IPCC, 2013: Climate change 2013. The physical science basis. Summary for Policymakers. http://www.climatechange2013.org/images/uploads/WGI_AR5_SPM_brochure.pdf

¹² Accessible at <http://sustainabledevelopment.un.org/getWSDoc.php?id=1384> and <http://sustainabledevelopment.un.org/getWSDoc.php?id=1374>

¹³ Accessible on <http://sustainabledevelopment.un.org/getWSDoc.php?id=2723>

¹⁴ DARA and the Climate Vulnerable Forum, Climate Vulnerability Monitor 2nd Edition (2012) A Guide to the Cold Calculus of a Hot Planet.

¹⁵ Phillips, J, et al. Cross-cutting climate change. CAFOD, 2013.

¹⁶ ibid

¹⁷ <https://www.cdproject.net/CDPResults/CDP-Carbon-Action-Report-2012.pdf>

¹⁸ http://assets.worldwildlife.org/publications/575/files/original/The_3_Percent_Solution_-_June_10.pdf?1371151781

¹⁹ IPCC, 2013 ibid

²⁰ IPCC AR4 (to check AR5) and UNEP

²¹ Marston, A. Doubling Climate Ambition: How the post-2015 und UNFCCC processes complement each other) CAFOD, 2014)

²² See: <http://www.twn.my/title2/climate/info.service/2014/cc140304.htm> 23 Working Paper 337

²⁴ PIRC.2012.Climate Factsheets

²⁵ IFAD.2011. Rural Poverty Report

²⁶ ODI. 2011. *Climate change, water resources and WASH*. Working Paper 337

²⁷ Phillips et al. 2013. Discussion Paper: *Cross Cutting Climate Change: hot to integrate climate change in the Post-2105 framework*

²⁸ Matthews, J & Le Quesne, WWF. 2009. *Adapting Water Management: A primer for coping with climate change*

²⁹ <http://www.theguardian.com/environment/world-on-a-plate/2013/nov/07/climate-change-environment-food-security-ipcc-emissions-united-nations-global-warming>

³⁰ Figures on the approx 30% world emissions from ag, land use change and deforestation

³¹ In Africa and Latin America small scale farming represents approximately 80% of all farms, in Latin America small scale farms produce up to 67% of total output and create up to 77% of employment of the agricultural sector (FAO, 2001)

³² International Energy Agency, 2011. "Energy For All: Financing access for the poor", *World Energy Outlook 2011*,

³³ See: <http://www.se4all.org/our-vision/our-objectives/universal-energy/>.

³⁴ The *World Energy Outlook 2010* found that: (1) traditional centralized supply and grid extension approaches to rural electrification will barely outpace population growth, achieving only a 14 percent reduction in the un-electrified population worldwide by 2030; (2) for universal energy access to occur by 2030, 70 percent of rural populations will need to be served by decentralized renewable energy; and (3) electrification strategies should focus heavily on decentralized renewable energy systems in order to achieve universal energy access.

³⁵ Riahi, K. et al in *Global Energy Assessment: Toward a Sustainable Future*, 1203-1306, Cambridge University Press & IIASA, 2012 . Quoted in Rogelj, J., McCollum, D.L., & Riahi, K., "The UN s „Sustainable Energy for All initiative is compatible with a warming limit of 2 °C”..

³⁶ RCP Database, 2009. See: <http://www.iiasa.ac.at/web-apps/tnt/RcpDb> (2009). Also Meinshausen, M. et al, 2011. "The RCP greenhouse gas concentrations and their extensions from 1765 to 2300", *Climate Change* 109, 213–241 (2011) & Boden, T. A., Marland, G. & Andres, R. J. *Global, Regional, and National Fossil-Fuel CO₂ Emission*, 201; http://dx.doi.org/10.3334/CDIAC/00001_V2012 (2012). Quoted in Rogelj, J., McCollum, D.L., & Riahi, K., "The UN s „Sustainable Energy for All initiative is compatible with a warming limit of 2 °C", *Nature Climate Change*, DOI: 10.1038/NCLIMATE1806.

³⁷ *World Energy Outlook 2008*, pp. 3-5. In terms of global primary energy consumption, in 2013 oil accounted for 33%, coal for 30%, and gas for 24%, See: http://www.bp.com/content/dam/bp/pdf/statistical-review/statistical_review_of_world_energy_2013.pdf. While oil has the largest share of the mix, coal is currently the biggest single source of CO₂ emissions globally In 2010, 43% of CO₂ were produced from coal, 36% from oil, 20% gas. IEA, *CO₂ emissions from fossil fuel combustion*, 2012; <http://www.iea.org/co2highlights/co2highlights.pdf>. There are 1,200 coal-fired power plants being planned in 59 countries around the world today. If all these projects go forward, the IEA estimates that this will push us towards 6 degrees of global warming. IEA, 2012. *Term Coal Market Report 2012*. See also: <http://www.iea.org/newsroomandevents/pressreleases/2011/november/name,20318,en.html>

³⁸ See <http://www.se4all.org/>.

³⁹ According to WWF, to achieve a 100% renewable energy sector by 2050, 42% renewable energy is needed by 2030, with far more rapid renewable energy expansion from 2030 to 2050. The SE4ALL target would only take the world to a 30% renewable energy share of the energy mix by 2030. See also Doig, A., *Sustainable Energy for All*, February 2012, *Christian Aid Time for Climate Justice* series no 7.

⁴⁰ US\$409bn was spent globally on subsidies to fossil fuels in 2010 according to the IEA.

⁴¹ See note 41

⁴² See <http://www.worldbank.org/en/topic/energy/publication/Global-Tracking-Framework-Report>. See also Practical Action s concept of Total Energy Access: <http://practicalaction.org/totalenergyaccess>.

⁴³ For instance see CAFOD and IIED, 2013. *Designing energy delivery models that work for people living in poverty*; <http://www.cafod.org.uk/Media/Files/Resources/Policy/Energy-models>. Inclusion of energy poor communities and civil society in implementation of the SE4ALL at the national level in the over 70 SE4All implementing countries appears poor, despite the fact national implementation plans are supposed to be developed with multi-stakeholder consultation.

⁴⁴ See <http://energy.gov/articles/climate-change-effects-our-energy>

⁴⁵ See: <http://www.se4all.org/our-vision/our-objectives/universal-energy/>. This is also recognized in the Open Working Group Co-Chair s Focus Areas Document and other UN reports. See: <http://sustainabledevelopment.un.org/focussdgs.html>

⁴⁶ WHO website, 2013 - see http://www.who.int/features/factfiles/climate_change/facts/en/index.html

⁴⁷ TST issues brief: HEALTH AND SUSTAINABLE DEVELOPMENT

⁴⁸ WHO website, 2013 - see http://www.who.int/features/factfiles/climate_change/facts/en/index.html

⁴⁹ WHO Climate change and health fact sheet No. 266, October 2012

⁵⁰ WHO Climate change and health fact sheet No. 266, October 2012

⁵¹ UN High Level Panel Report, A new global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development, The Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda. May 2013.

⁵² UNHDP 2006 beyond scarcity: power, poverty and the global water crisis.

⁵³ The Green Climate Fund is the mechanism established for transferring money from developed to developing countries for the purposes of mitigation and adaptation and is the body responsible for raising the US\$100 billion promised by developed countries. At a recent meeting of the Board, members agreed that they would aim for a 50:50 balance between adaptation and mitigation over time.

⁵⁴ ODI, 2014. Zero poverty... Think again.

⁵⁵ IPCC, 2012. Managing the Risk of Extreme Events and Disasters to Advance Climate Change Adaptation.

⁵⁶ UNTST brief on DRR and Climate Change

⁵⁷ ODI 2013 The geography of poverty, disasters and climate extremes in 2030. ODI, Met Office and RMS.

⁵⁸ Seneviratne, S. I et al 2013 Changes in Climate extremes and their impacts on the natural physical environment. Chapter 3 *In Managing the risks of extreme events and disasters to advance climate change adaptation: special report of the Intergovernmental Panel on Climate Change*.

⁵⁹ UNESCO 2012. Disaster Risk reduction and education: outcomes for children as a result of DRR activities supported by the EEPCT programme.

⁶⁰ 23 IPCC, 2012. Managing the Risk of Extreme Events and Disasters to Advance Climate Change Adaptation.

⁶¹ Shepherd A et al. The Geography of Poverty Disasters and Climate Extremese in 2030, London 2013: URL: <http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8633.pdf>

⁶² Article 2 of the UN Framework Convention on Climate Change

⁶³ UNFCCC 2010 Report of the Conference of the Parties on its sixteenth session, held in Cancun 29 Nov-10 Dec. Decisions adopted by the Conference of the Parties (Decision 1/CP.16)

⁶⁴ IPCC 5AR SPM (p 8)

⁶⁵ IPCC 5AR Draft underlying scientific technical assessment which says that the Cancun pledges are broadly consistent with scenarios reaching 550-650 Co2e by 2100 without delays in mitigation, which according to Table SPM1 would mean a rise in global temperature of at least 2degreesC relative to 1850-1900.

⁶⁶ www.carbonactiontracker.org

⁶⁷ The Green Climate Fund is the mechanism established for transferring money from developed to developing countries for the purposes of mitigation and adaptation and is the body responsible for raising the US\$100 billion promised by developed countries. At a recent meeting of the Board, members agreed that they would aim for a 50:50 balance between adaptation and mitigation over time.

⁶⁸ Above preindustrial levels – usually defined to be 1860.

⁶⁹ Decision 2/CP.15 (Copenhagen Accord) , Decision 1/CP.16 (Cancun agreements).

⁷⁰ Decision 1/CP.16 (Cancun agreements).

⁷¹ Decision 2/CP.15 (Copenhagen COP), 1/CP.16 (Cancun agreements), 1/CP.17 (Durban COP), 2/CP.17 (Durban COP), 1/CP.18 (Doha COP).

⁷² Decision /CP.15 (COpehagen COP), 1/CP.16 (Cancun Agreements), 1/CP.18 (Doha COP).

⁷³ Decision 1/CP.16 (Cancun Agreements); Decision 2/CP.17 (Durban COP).

⁷⁴ In the Bali AP (Decision 1/CP.13) Parties “*recognized that deep cuts in global emissions will be required to achieve the ultimate objective of the Convention and emphasised the urgency to address climate change*”. The text refers to pages 39 & 90 of the IPCC FAR WG 3 Technical summary report in which it was reported that keeping the global mean temperature increase above pre-industrial below 2.0-2.4degrees C would require CO2 emissions to peak by 2000-2015, and global CO2 emissions in 2050 to be 85-50% lower than in 2000. On p90 the text states that under most equity considerations developed countries would need to reduce their emissions by 2020 by 10-40% below 1990 (In the Cancun Agreements Decision 1/CMP.6 this range was revised to 25-40%) and by 40-95% below 1990 by 2050 for low to medium stabilisation (2degreesC).

⁷⁴ Decision 1/CP.16, (Cancun COP).

⁷⁵ Decision 1/CP.18 (Doha COP).

⁷⁶ Decision 1/CMP.6 (Cancun COP).

⁷⁷ Decision 1/CMP.6 (Cancun COP) .

⁷⁸ Decision 1/CP.16 (Cancun COP)

⁷⁹ The COP decisions initially refer to these as low carbon development strategies and more latterly as low emission development strategies.

⁸⁰ Decision 1/CP.16, (Cancun COP), Decision 2/CP.17 (Durban COP).

⁸¹ Agyemang-Bonsu, W et al 2013 Linkages between NAMA-LEDs-MRV <http://prod-http-80-800498448.us-east-1.elb.amazonaws.com/w/images/6/66/NAMALEDSMRVPaper.pdf>

⁸² As of 2013 around 100 of the 195 Parties to the UNFCCC had submitted some form of emission reduction commitment (eg. quantified economy wide emission reduction commitments or nationally appropriate mitigation actions) (UNEP 2013 Closing the Emissions Gap report Appendix 2C).

⁸³ Article 3, Principles 3 and 4.

⁸⁴ See Field, et al, 2014 Climate change 2014: Impacts, Adaptation and Vulnerability Summary for Policy makers. IPCC 5AR WGII.

⁸⁵ Marshall, M. 2013 Humanitarian Disaster blamed on climate change. New Scientist 1 March 2013.

⁸⁶ WHO website, 2013 - see http://www.who.int/features/factfiles/climate_change/facts/en/index.html

⁸⁷ Article 4.1(b) and 4.1 (e).

⁸⁸ Decision 1/CP.16 (Cancun COP).

⁸⁹ Decision 1/CP.16 (Cancun COP).

⁹⁰ Decision 1/CP.16 (Cancun COP).

⁹¹ Englebrecht, F. 2013. The adequacy of the long-term global goal in the light of the ultimate objective of the Convention. Presentation given at the structured expert dialogue: first meeting, Nov 2013.

⁹² UNEP 2013 http://na.unep.net/geas/getUNEPPageWithArticleIDScript.php?article_id=109

⁹³ article 3, Principles 3 and 4

⁹⁴ The Green Climate Fund is the mechanism established for transferring money from developed to developing countries for the purposes of mitigation and adaptation and is the body responsible for raising the \$100US billion promised by developed countries. At a recent meeting of the Board, members agreed that they would aim for a 50:50 balance between adaptation and mitigation over time.

⁹⁵ Decision 1/CP.16 (Cancun COP).

⁹⁶ Decision 1/CP.16 (Cancun COP).

⁹⁷ Decision 1/CP.18 (Doha Conference of the Parties).

⁹⁸ Refer to numerous statements provided by AOSIS e.g.: <http://aosis.org/wp-content/uploads/2013/06/Closing-Statement-UNFCCC-SBSTA-Bonn-June-2013.pdf>

⁹⁹ The Guardian 1 June 2011 UN Chief challenges world to agree tougher target for climate change <http://www.theguardian.com/environment/2011/jun/01/climate-change-target-christiana-figueres>

¹⁰⁰ See Hansen et al 2013 Assessing Dangerous Climate Change: required reductions of carbon emissions to protect young people, future generations and nature. PLOS one.

¹⁰¹ See for example WBGU 2009 Solving the climate dilemma: the budget approach. German advisory Council on Global Change Council on global change.

¹⁰² IPCC 5AR WGI.

¹⁰³ IPCC 5AR WGI.

¹⁰⁴ See UNEP 2013 Closing the emissions gap report, IPCC 2014, Rogelji et al 2013 (Climate Analytics paper, Probabilistic cost estimates for climate change mitigation, and 2020 emission levels required to limit warming to below 2°C), Ecoequity 2014 Three salient global mitigation pathways, assessed in light of the IPCC carbon budgets.

¹⁰⁵ Figures provided by Paul Baer pers comm, from the analysis used in the EcoEquities report (2014). This includes all greenhouse gases.

¹⁰⁶ Figures given in Ecoequity (2014) for the strong 2 degree pathway.

¹⁰⁷ IPCC 5AR WG1.

¹⁰⁸ Knutti, R. 2013 relationship between global emissions and global temperature rise. Climate change 2013: the physical science basis. Working Group I contribution to the IPCC Fifth Assessment report. Presentation given to the second UNFCCC structured expert review Nov 2013.

¹⁰⁹ Ecoequity (2014) Three salient global mitigation pathways, assessed in light of the IPCC carbon budgets.

¹¹⁰ IPCC 5AR WGIII SPM p19.

¹¹¹ The Ecoequity 2014 strong mitigation pathway is based on a cumulative emissions budget of 1390 GtCO₂e (780 GtCO₂) for 2012-2100, of 1050 GtCO₂e (715 GtCO₂) for 2012-2050, and 520 GtCO₂e (390 GtCO₂) for 2000-2011. It requires peaking of global emissions in 2014, and a maximum annual reduction rate in emissions of 6.1% for all GHG. It assumes a global annual floor of non-CO₂ emissions of 5GtCO₂e. In determining these figures they took a conservative approach by assuming the frontloading of mitigation, including an annual emissions floor for non-CO₂ gases, and the absence of any negative emissions of any kind.

¹¹² IPCC 5AR WGIII SPM.

¹¹³ see Herzog, T. et al 2006. Target: intensity, an analysis of greenhouse gas intensity targets. World Resources Institute, Washington DC.

¹¹⁴ See for example: <http://about.bnef.com/blog/turner-the-case-for-intensity-based-targets-to-curb-climate-change>

¹¹⁵ See Lemos, M., Afrawal, A., Johns, O., Eakin, H., Nelson, D., Egle, N. 2013 .Building adaptive capacity to climate change in less developed countries. *Climate Science for Serving Society*. 437-457

¹¹⁶ Burton, I, 2007 Chapter 18 Adaptation to climate change in the context of sustainable development and equity. Chapter 18 of Working group II Impacts, adaptation and Vulnerability report, Intergovernmental Panel on Climate Change Fourth Assessment Report.

¹¹⁷ Adger, W.N, Agrawala, S., Monirul Qader Mirza et al 2007 IPCC 4AR WG2 Chapter 17 Assessment of adaptation practices, options, constraints and capacity.

¹¹⁸ Lemos, M., Afrawal, A., Johns, O., Eakin, H., Nelson, D., Egle, N. 2013. Building adaptive capacity to climate change in less developed countries. *Climate Science for Serving Society* . 437-457.

¹¹⁹ Lemos, M., Afrawal, A., Johns, O., Eakin, H., Nelson, D., Egle, N. 2013 .Building adaptive capacity to climate change in less developed countries. *Climate Science for Serving Society*. 437-457

¹²⁰ See for example Adger, W Neil, et al 2004, New indicators of vulnerability and adaptive capacity. Tyndall Centre for Climate Change Research, The Global Adaptation Institute 2012 GAIN Index, and the Alliance Development Reports World Risk Report Methodology.

¹²¹ Global Adaptation Institute 2012 GAIN Index: measuring what matters: Bonn Perspectives 26-27 March 2012.

¹²² UNEP 2013 Closing the Emissions Gap report.

¹²³ Noble, I., Huq, S. 2014. Adaptation needs and Options. In IPCC 5AR WG II report.

Lead authors:

Bernadette Fischler, CAFOD (option 1 and 2); Rachel Garthwaite, Save the Children (option 3 and 4).

With contributions from:

Liam Sollis, Action for Global Health/Plan UK; Kate Crowley, Neva Frecheville, Graham Gordon, Katie Spooner and Sarah Wykes, CAFOD; Sven Harmeling and Kit Vaughan, CARE; Emily Johan, CIDSE; Mohamed Adow, Helen Dennis, Alison Doig and Katherine Nightingale, Christianaid; Tom Mitchell and Andrew Scott, ODI; Debbie Hillier, David Taylor and Hannah Stoddard, Oxfam; Andrew Griffith and Helen Hamilton, Sightsavers; Alex Kent and Louise Whitting, WaterAid; Ruth Fuller, Leo Hickman and Dominic White, WWF UK.

Special thanks go to:

Sam Harris and Wael Hmaidan, CAN-International; Ken Caldeira, Carnegie Institution for Science; Tom Athanasiou, Paul Baer, Ecoequity; Joeri Rogelj, ETH; John Shepherd, FRS National Oceanographic Centre Southampton University; Ruth Davies, Greenpeace; John Barrett, Leeds University; Tara Shine, Mary Robinson Foundation; Edward Davey, Prince's Trust; Gabriel Normand, UNDP; Corinne Woods, UN Millennium Campaign; Sandeep Chamling Rai and Stephen Singer, WWF.