

FAIR SHARES: A CIVIL SOCIETY EQUITY REVIEW OF INDCS

REPORT

NOVEMBER 2015



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Analytical support provided by the Climate Equity Reference Project (www.ClimateEquityReference.org), an initiative of EcoEquity and the Stockholm Environment Institute.

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SUMMARY

Climate science paints a frightening picture—one that tells us that urgent and dramatic action is needed to have any chance at stopping irreversible global warming. This urgency is not just about the planet and the environment; it is also about people, and humanity's capacity to secure safe and dignified lives for all. The science is unambiguous: the next 10–15 years are critical if the most dangerous effects of climate change are to be avoided.

Today, the world is 0.85°C warmer than pre-industrial levels, and many people and ecosystems are already experiencing devastating impacts. Exceeding 1.5°C will entail unacceptably impacts for billions of people and risk crossing irreversible tipping points. We can only emit a finite amount of greenhouse gases—an amount known as the 'global carbon budget'—if we wish to keep overall increases below 1.5°C or even 2°C. The science indicates we are reaching this limit very quickly, and may even have exceeded it.¹ Accepting the Intergovernmental Panel on Climate Change (IPCC) scenarios do provide us with a global carbon budget, but one that will be consumed in 10–20 years at current emissions levels, and that entails very significant levels of risk. A commitment to keep at least within this limited budget, and to share the effort of doing so equitably and fairly, is at the heart of the international debate around climate change.

THE PARIS AGREEMENT AND INDCs

Negotiations around a new climate deal to be agreed in December at COP21 in Paris have not included any clear reference to a global carbon budget as a basis for targets and effort-sharing. Instead, governments have been invited to put forward voluntary pledges in 2015 in the form of 'Intended Nationally Determined Contributions' (INDCs), and most will have done so by Paris.

Even so, whether or not the Paris Agreement will be ambitious enough and tolerably fair will be judged on three main criteria:

- the aggregation of INDCs and the willingness of governments to recognise the inadequacy and unfairness of collective and individual efforts;
- the commitment to mechanisms in the new agreement to ensure that governments scale up their efforts to increase ambition in accordance with clear equity principles in the coming years; and
- the provision of significantly scaled-up finance, technology and capacity-building support for developing countries to mitigate and adapt to climate change, and address loss and damage.

To date governments have escaped meaningful scrutiny and rejected notions of 'fair shares', asserting the uniqueness of their particular 'national circumstances' and their 'right' to determine their own level of climate ambition. Countries have moved to a 'bottom-up pledge' approach, with highly unequal levels of commitment and effort. This is not fair and the pledges do not add up to what climate scientists say is needed. The result is a large shortfall of emissions reductions creating risks that are tantamount to gambling with planetary security.

CSO EQUITY REVIEW OF INDCs

As social movements, environmental and development NGOs, trade unions, faith and other civil society groups, we have come together to assess the commitments that have been put on the table. We seek to identify which countries are offering to do their fair share, which need to do more to meet their fair share, and which need to do more with support in order for the world to reach a below 1.5°C or even 2°C pathway. We present recommendations on how to close the emission reductions gap fairly.

What is clear from our analysis is that addressing this gap in ambition can only be done through significantly scaled up cooperation among countries, especially between developed and developing countries. Equity and fairness are vital to unlocking cooperation. Equity and fairness matter to people's lives. Only by embracing equity can governments in Paris define a pathway towards scaled-up global cooperation and action to secure dignified lives for all in a climate-safe world.

We assert that equity is not something that every country can decide for itself. It can be defined and quantified in a robust, rigorous, transparent and scientific manner that is anchored in the core principles of the UN Framework Convention on Climate Change, taking into account a range of interpretations of these principles.

EQUITY AND FAIR SHARES

All countries must accept responsibility for meeting at least their fair share of the global effort to tackle climate change. Some countries have much higher capacity to act than others, due to their higher income and wealth, level of development and access to technologies. Some countries have already emitted a great deal for a long time, and thrive from the infrastructure and institutions they have been able to set up because of this.

¹ e.g. Anderson, Kevin and Alice Bows, 2012, "A new paradigm for climate change", Nature Climate Change 2, 639–640, doi:10.1038/nclimate1646

The operationalisation of equity and fair shares must focus on historical responsibility and capacity, which directly correspond with the core principles in the UN climate convention of *'common but differentiated responsibility—with respective capabilities' and the 'right to sustainable development'*.

We have assessed countries' INDCs by judging their commitments against their 'fair share' of the global mitigation effort (carbon budget) needed to maintain a minimal chance of keeping warming below 1.5°C, and a 66% chance of keeping it below 2°C. Our assessment of fair shares uses an 'equity range', which takes into account:

1. Historical responsibility, i.e. contribution to climate change in terms of cumulative emissions since an agreed date; and
2. Capacity to take climate action, using national income over what is needed to provide basic living standards as the principal indicator.

Historical responsibility and capacity have been weighted equally (50/50). This approach means each country has a unique fair share that will change over time as they increase their incomes and relative proportion of accumulated emissions.

Our 'equity range' uses historic responsibility start dates of 1850 and 1950, and capacity settings that are no lower than a development threshold of \$7500 per person per year, in order to exclude the incomes of the poor from the calculation of national capacity. Our 'equity range' does not include a 1990 benchmark. The large volume of historical emissions from which many countries benefited during the decades of unrestricted high-carbon development prior to the UN Convention cannot be ignored from both a moral and legal standpoint. Nevertheless, we have included comparisons to a 1990 benchmark in order to show that our key findings apply even to such a benchmark.

KEY FINDINGS

While we have assessed all INDCs submitted by October 1, 2015, we have looked in more detail at ten focus countries that were chosen because they are broadly representative of countries at very different levels of economic development: USA, Japan, European Union, Russia, Brazil, China, Indonesia, Marshall Islands, India and Kenya.

Our fair share assessments of all of the INDCs submitted by October 1, 2015 lead us to the following key findings:

- **Together, the commitments captured in INDCs will not keep temperatures below 2°C, much less 1.5°C, above pre-industrial levels. Even if all countries meet their INDC commitments, the world is likely to warm by a devastating 3°C or more,** with a significant likelihood of tipping the global climate system into catastrophic runaway warming.
- **The current INDCs represent barely half of the reduction in emissions required by 2030.** It must be noted that this itself relates to a very risky carbon budget. For a budget with a strong likelihood of keeping warming below 1.5°C or 2°C, the current INDCs would only meet a tiny fraction of what is needed. This means the fair shares presented here must be met. If anything, countries need to exceed these targets.

- **The ambition of all major developed countries fall well short of their fair shares, which include not only domestic action but also international finance.** Those with the starkest gap between their climate ambition and their fair shares include:
 - › **Russia** – INDC represents zero contribution towards its fair share
 - › **Japan** – INDC represents about one tenth of its fair share
 - › **United States** – INDC represents about a fifth of its fair share
 - › **European Union** – INDC represents just over a fifth of its fair share
- **The majority of developing countries have made mitigation pledges that exceed or broadly meet their fair share, but they also have mitigation potential that exceeds their pledges and fair share** – from the list of focus countries given in the next section, this includes **Kenya, the Marshall Islands, China, Indonesia and India.** **Brazil's** INDC represents slightly more than two thirds of its fair share. As stated above, even if countries' pledges exceed their fair share, they will have to do more – with international support – for the world to reach a below 1.5°C or even 2°C pathway.
- **Most developed countries have fair shares that are already too large to fulfil exclusively within their borders, even with extremely ambitious domestic actions.** In addition to very deep domestic reductions, the remainder of their fair shares must therefore be accomplished by enabling an equivalent amount of emissions reduction in developing countries through financing and other support. This accounts for almost half of the reductions that need to take place globally, which indicates the need for a vast expansion of international finance, technology and capacity-building support (Means of Implementation). Moreover, this fact underscores the importance of a cooperative approach between developed and developing countries to enable scaled up ambition.
- **Although climate finance is critical for developed countries to deliver their fair shares, there is a striking lack of clear commitments.** Massively scaled-up international public finance is required to support developing countries' efforts, including finance to deliver the conditional offers from developing countries. In addition, significantly increased public climate finance is needed to meet the cost of adaptation, and to cover loss and damage in developing countries, particularly for the most vulnerable.

ACTION NEEDED TO CLOSE THE GAP

Nothing less than a systemic transformation of our societies and our economies will suffice to solve the climate crisis. Not only is equity a moral imperative in its own right, it is also vital for enabling the unprecedented societal changes that climate change requires. The following actions are urgently needed to close the emissions gap.

THE PARIS AGREEMENT MUST ENSHRINE A FRAMEWORK THAT ENSURES DOMESTIC COMMITMENTS AND GLOBAL TARGETS ARE SET IN ACCORDANCE WITH SCIENCE AND EQUITY.

Governments must recognise that a carbon budget approach is critical to determining countries' commitments (in terms of both finance and mitigation), and that their INDCs must be formulated within the parameters of what their fair share of that budget is with many developing countries' INDCs including conditional commitments that go beyond their fair share subject to support. To ensure early action and prevent national pledges from exceeding the global carbon budget, governments must agree aggregate targets for emission reductions in 2025, 2030, 2040 and 2050 that give a decent chance of keeping post-industrial warming below 1.5°C. In addition to this, Parties should agree to collectively close the emissions reductions gap by a certain date through scaled up collaborative and cooperative actions facilitated by the means of implementation. Furthermore, the long-term goal must be near-zero emissions by 2050—not the end of the century—ensuring 100% sustainable and renewable energy. This full decarbonisation must not be confused with ambiguous 'net-zero' formulations that would allow continued fossil fuel emissions, agricultural approaches with adverse social and ecological consequences, land grabs and risky geo-engineering.

THE PARIS AGREEMENT MUST INCLUDE A STRONG MECHANISM TO INCREASE THE AMBITION OF INDCs

The world cannot wait a decade or more to address the catastrophic 3°C level of collective ambition contained in current INDCs, which start in 2020 and end in 2025 or 2030.

To ensure the Paris agreement does not lock in inadequate INDCs a strong ratcheting-up mechanism is vital. Such a mechanism must increase overall ambition before implementation of INDCs in 2020, and every five years thereafter. And it must include a robust assessment process that takes both science and equity into proper account. The institutional architecture established in the Paris agreement should also include an enhanced Technical Examination Process and a robust action agenda with a mandate to advance action beyond the INDCs to help close the gap in reductions.

SUBSTANTIAL NEW COMMITMENTS TO FINANCE MITIGATION, ADAPTATION AND LOSS AND DAMAGE IN DEVELOPING COUNTRIES ARE ESSENTIAL

For a fully equitable climate agreement, substantial public finance for mitigation must be delivered, both to fulfil developed countries' fair share and to help unlock greater ambition in developing countries. As a supplement to their domestic INDCs, each developed country party should set a target to provide the means of implementation to developing countries to address the emissions reductions gap. Developed countries and others with high capacity and responsibility should pledge to work with poorer countries to implement the additional actions that are needed. Significantly scaled-up public finance for adaptation and to address loss and damage are also imperative, given the significant impacts that are already being felt, and the escalating impacts that are expected.

COUNTRIES MUST SCALE UP ACTION FOR SUSTAINABLE ENERGY TRANSFORMATION

Countries urgently need to implement bold and visionary plans for a just transition to low-carbon economies. Such action must include phasing out dirty energy—with developed countries doing so furthest and fastest—and redirecting finance to renewable energy. Plans must cut across all sectors of society, and support workers and communities dependent on sectors that will need to change in order to decarbonise.



INTRODUCTION AND CONTEXT

The fundamental premise of this report – which assesses Intended Nationally Determined Contributions (INDCs) to address climate change, based on a set of common principles – is that equity matters, and not only because it is good in itself. Equity also matters because it is the key to cooperation – and cooperation is indispensable in solving significant commons problems. Climate change, of course, is one of the largest and most difficult commons problems that humanity has ever faced, and it will not be solved without durable and robust cooperation.

This robust cooperation is urgently needed. Climate science paints a frightening picture – one that tells us that urgent and dramatic action is needed to have any chance of stopping irreversible global warming. This urgency is not just about the planet and the environment; it is also about people, and humanity's capacity to secure safe and dignified lives for all. The science is unambiguous: the next 10–15 years are critical if the most dangerous effects of climate change are to be avoided.²

Today, the world is 0.85°C warmer than pre-industrial levels, and many people and ecosystems are already experiencing devastating impacts.³ Exceeding 1.5°C will entail unacceptable consequences for billions of people and risks crossing irreversible tipping points. We can only emit a very small amount of greenhouse gases – an amount known as the 'global carbon budget' – if we wish to keep overall increases below 1.5°C or even 2°C. The science indicates we are reaching this limit very quickly, and may even have exceeded it.⁴ Accepting Intergovernmental Panel on Climate Change (IPCC) 1.5°C or even 2°C scenarios provide us with a remaining carbon budget, but one that will be consumed in 10–20 years at current emissions levels,⁵ and still involves very significant levels of risk.⁶ A commitment to keep at least within this limited budget, and to share the effort of doing so equitably and fairly, is at the heart of the international debate around climate change.

Inequality and injustice are built into the very core of the climate crisis. Overconsumption, political inertia and powerful corporate interests are major drivers of climate pollution and its consequent impacts. Although these developmental pathways largely benefit the wealthy and powerful, the resulting climate impacts disproportionately affect the world's poorest and most vulnerable – who have generally done very little to cause the problem.

Globally, we must find ways to 'zero-out' greenhouse gas emissions as quickly as conceivably possible, by 2050 at the

latest, while also ensuring the well-being, dignity and right to sustainable development of all people. This is an enormous task, since the basis of our industrial society – the way we produce and consume energy and goods – has historically been premised on unlimited natural resource use and an infinite capacity to 'store' CO₂ in the atmosphere and ocean. We now know that a healthy, habitable planet has ecological limits that we are in danger of breaching. As a result, a transformation of our societies and our economies is needed to respond to the climate crisis and close the ever-increasing inequality gap.

How to achieve this in ways that acknowledge and address the historical inequalities that are built into the global economy is at the heart of the debate on climate action. If left unattended, these issues will have a damaging impact on the negotiations around a new, legally binding climate agreement in Paris in December and on our ability to collectively tackle the climate crisis itself.

The number of INDCs that have been submitted ahead of COP21 in Paris this December reflects the growing adoption of climate policies around the world, and an increasing level of ambition within developing countries. However, negotiations have not included any clear reference to a global carbon budget as a basis for targets and effort-sharing. Instead, governments have merely been invited to put forward voluntary pledges in 2015 for reducing carbon emissions in the form of INDCs.

The aggregate impact of these produce approximately half of the reductions in 2030 required to align with a 2°C/1.5°C pathway.⁷ Analyses suggest that the targets set in the INDCs put us on course for warming of 3°C, which significantly risks tipping the global climate system into runaway disruption.⁸ The INDCs do not include a process to define and evaluate each country's 'fair share' of emissions reductions, based on its historical emissions to date and its capacity for action.

As civil society, we believe that governments should agree to a much stronger process to ramp up ambition in a fair way, through regular science and equity reviews that lead to deeper commitments. The Paris agreement should also create approaches to incentivise unilateral and cooperative action to address the ambition gap, including adequate finance, technology and capacity building to make conditional targets submitted by developing countries achievable.

² IPCC (2014) *Fifth Assessment Report. Climate Change 2014: Synthesis Report*, page 9

³ IPCC (2013) *Summary for Policymakers: Climate Change 2013: The Physical Science Basis*. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

⁴ To keep warming below 1.5°C, with the kind of risk levels that societies normally apply to dangerous activities, there is no budget left. For details, see IPCC (2013) *ibid.*, page 27.

⁵ IPCC AR5 indicates a carbon budget of 400–850 GtCO₂ for the period 2011–50 is needed for a 50% chance of staying below 1.5°C. IPCC (2014) *ibid.*, page 68. According to CO₂now (<http://co2now.org>) CO₂ emissions equaled 36.3 GtCO₂ in 2013. Therefore, at current emissions rates, the carbon budget, even for a relatively low likelihood of keeping warming below 1.5°C (33–66%) could be exhausted within 10–22 years. See also Anderson, Kevin (2015) 'Duality in Climate Science'. *Nature Geoscience*.

⁶ IPCC scenarios are generally cited with respect to their 33% and 50% risk levels of exceeding the temperature target. In other areas of society, such risk levels would be considered both unacceptable and absurd. For instance, to fly with a 33% risk of crashing would mean boarding a plane knowing that there will be 30,000 plane crashes globally that same day.

⁷ At the time of writing, not all countries have tabled their expected INDCs and some are incomplete or ambiguous. As clarifications are made before Paris, we will revise the analysis in this report accordingly.

⁸ See analysis by Climate Action Tracker <http://climateactiontracker.org> and Climate Interactive <https://www.climateinteractive.org/tools/scoreboard/scoreboard-science-and-data>

In this review, we present the results of an assessment of INDCs. It is an assessment founded on a set of common principles and on a methodology based on the principles of the UN Climate Convention and agreed by a wide range of stakeholders and organisations. This approach can and should serve as a model for how science and equity reviews could function and be built into the UN Framework Convention on Climate Change (UNFCCC) architecture to ensure that efforts are scaled up. Importantly, the analysis makes it clear that to reach a science-based emission pathway to limit the risk that global temperatures will rise by more than 2°C, developing countries will need to reduce emissions and adapt to climate impacts to an extent far beyond what could be considered 'fair'. Therefore, the Paris agreement must take seriously the issue of 'means of implementation' – finance, access to technology, and capacity building – to enable these countries to deal with climate change.

It also shows that developed countries will need to undertake unprecedented, far-reaching transformations of their economies, to enable extremely ambitious domestic emissions reductions, starting immediately. That said, the analysis shows that even such rapid decarbonisation would not meet the fair shares of many developed countries. Therefore, supporting quantified levels of mitigation beyond national borders must be a key part of developed countries' contributions.

The civil society organisations that undertook this review all call for balanced and comprehensive INDCs, covering mitigation, adaptation and means of implementation. However, this review is focused mainly on the mitigation aspect of the INDCs. We also stand for transparency and citizens' participation in the domestic preparation of the INDCs. However, this review did not look specifically at these areas.

EQUITY NARRATIVE: FROM PRINCIPLES TO A QUANTITATIVE FRAMEWORK

Equity matters, not only because it is a good in itself but because it is the key to cooperation. Climate change, of course, is one of the largest and most difficult commons problem that humanity has ever faced, and it will not be solved without prolonged and robust cooperation.

The fundamental purpose of this report is to quantitatively assess the adequacy *and* equity of the INDCs.

To that end, **adequacy** is defined in terms of the global effort required to make the massive emissions reductions that are now necessary to limit warming to tolerable levels, and to cope with the fact that, due to past emissions, the world is already committed to some level of climate change.

Defining and quantifying **equity** is equally if not more challenging. It is an inherently and irreducibly normative notion, one that cannot be uniquely specified. Even so, enough can be said about equity that an analysis of fair shares can be both illuminating and politically useful.

First, to understand the problem of ambitious action within a world of vast disparities, it is useful to go back to the UN Climate Convention's core equity principles: Responsibility, Capacity, and Need. They accord well with virtually all conceptions of equity:

- **Responsibility** refers to the notion that those who are more responsible for causing a problem should take more responsibility for solving it, all else being equal.
- **Capacity** refers to the notion that those who have more capacity to solve a problem should contribute more to solving it, all else being equal.

- **Need** refers to the basic requirement of countries to guarantee the inalienable human rights of their citizens in the face of climate change, through development, adaptation and addressing loss and damage.

Critically, the Convention's equity principles can be represented by quantitative indicators, which can be used to assess both the adequacy and the equity of the INDCs.

Second, even though there's room for discussion about the precise definition and quantification of fair shares, equity is far beyond a matter of opinion. While different Parties may never precisely agree on an exact formulaic definition of fair shares, it is entirely possible to offer decision-makers and citizens equity benchmarks based on meaningful 'equity ranges' that reasonably represent a broad range of legitimate interpretations of the Convention's core equity principles. Such ranges, while broadened by the multiple equity perspectives they reflect, nevertheless yield tangible results that can usefully and productively inform thinking during global negotiations, and in the national campaigns that must now flower everywhere. Well-defined equity ranges are narrow enough to tell us if a given nation's contribution is consistent with the demands of science and equity, and to identify those who need to do more to meet their fair share and those that are doing their fair share but still need to do more – including with support – in order for the world to reach a below 1.5°C or even 2°C pathway.

It's necessary to be very clear here. If we are to stabilise the climate system in time, all countries must do whatever possible – without depriving the poor of sustainable development – to reduce emissions. A large amount of international cooperation is required to open the space for more ambitious action.

This analysis focused on two key dimensions of equity. The first is the **historic** extent of responsibility: from what 'start date' should emissions be reckoned in the accounting of responsibility? The second is the relative capacity of poor people and wealthy people within each nation. That is, to what extent should **progressivity** enter into our definition of capacity? (The analogy here is with income tax in national tax policy, which is typically defined in a progressive manner, with higher incomes being taxed at a higher rate than lower incomes.) There are other difficult issues related to the quantification of national fair shares, but these are two of the most contentious, and they helpfully illustrate a meaningful spectrum of equity perspectives. The specific ways in which this spectrum can be presented as an 'equity range' are discussed below.

There are three further important points about this report.

First, we calculate national fair shares of the global mitigation gap in tonnes of greenhouse gas (GHG) emission reductions required. We do not attempt to estimate the cost of reducing these GHG emissions for individual countries.

Second, we estimate the scale of the global need based on existing cost and investment estimates, but we do not attempt to estimate national fair shares in financing global adaptation and loss and damage efforts. These are absolutely central to any meaningful definition of the global climate finance gap, but the limited availability of comparable bottom-up national cost estimates makes the task of determining aggregate global numbers very difficult. These methodological challenges are far greater than those posed by estimating mitigation fair shares, and we do not attempt to engage them in this report.

Third, in quantifying countries' capacity and responsibility, this analysis finds that wealthy developed countries (with relatively higher levels of capacity and responsibility) generally have fair shares of the global mitigation effort that greatly exceed their own domestic mitigation potential (to say nothing of the minimal mitigation effort pledged in their INDCs). Conversely, poorer developing countries (with relatively lower levels of capacity and responsibility) generally have fair shares of the mitigation effort that are smaller, and sometimes much smaller, than their domestic mitigation potential. However, all available mitigation potential must be used if we are to stay within a carbon budget to keep warming below 1.5°C or even 2°C.

Wealthier countries – *as part of their fair share* – will need to provide the financial and technological means for poorer countries to exploit their full mitigation potential in a manner consistent with their national sustainable development strategies. Likewise, poorer countries will need to stand ready to increase their contributions. They will need to make pledges to implement mitigation beyond their fair share on the condition they receive support for the means of implementing these pledges from wealthier countries. The scale of these reductions in poorer countries (reductions that do not offset ambitious domestic reductions in wealthier countries, but are in addition to them) is highlighted below. This approach does not preclude the existence of increasing domestic mitigation potential both in rich and poor countries at zero or even negative costs, in particular as the clean energy revolution towards renewable energies accelerates and technology costs decrease. This will further help countries implement INDCs, meet or exceed fair shares, and accelerate change.

The results presented in this report strongly suggest that without drastically increased international financial and technological support – and simultaneous radical emissions reductions in wealthy countries – there is virtually no chance of stabilising the climate system in time to avoid global catastrophe.

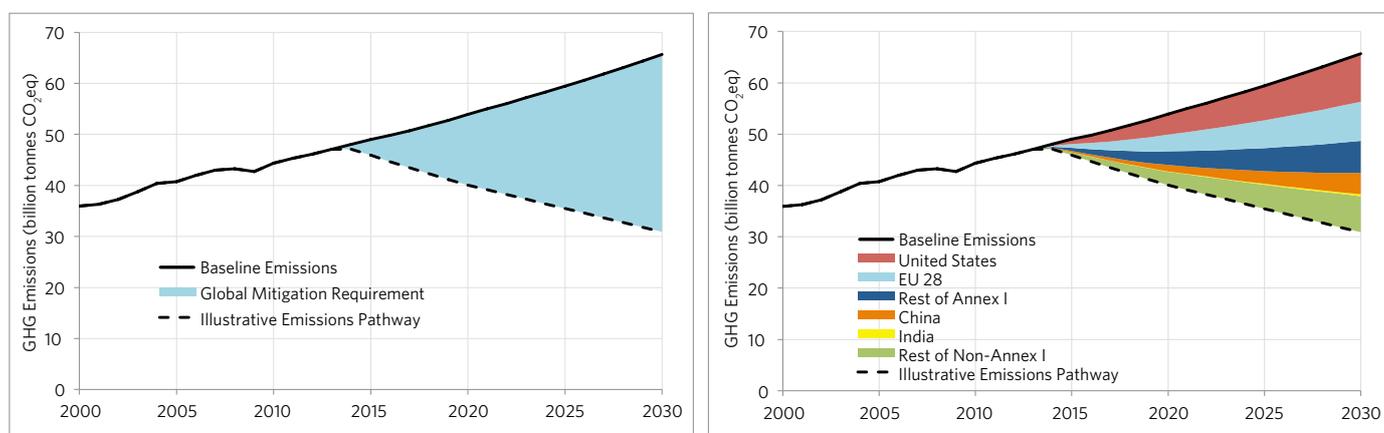
It should also be recognised that there is an additional equity dimension beyond ensuring fair shares with necessary means of implementation. There is a historic inequity in poor countries being required to reduce emissions – even if they are provided with the means to do so – because of wealthier countries' earlier emissions. Poorer countries are now given no choice but to shift to alternative development trajectories at an incredibly rapid pace if the world is to avoid catastrophic climate change. While we aspire to this developmental shift in order to achieve equitable, thriving societies, there is still an injustice in having to work with a much narrower set of options on an extremely difficult timeline. This limits countries' opportunity to plan a just transition that can mitigate the hard trade-offs and protect workers, citizens and sectors against the upheaval that any major transformation involves.



METHODOLOGY

THE GLOBAL MITIGATION PATHWAY

FIGURE 1: Globally required mitigation, as necessitated by our 2°C global mitigation pathway (blue area) divided among countries in proportion to their share of global responsibility and capacity. Our 2°C pathway is the Climate Action Tracker's '1.5°C pathway', though we have changed its name - see below. The fair-share wedges shown here are relative to the '1950 / Medium progressivity' equity benchmark - see below.



The general fair shares framework underlying this analysis is straightforward. It entails dividing the required effort among all countries according to their responsibility and capacity, where these core equity notions are defined in a transparent way using explicitly defined quantitative indicators. Capacity is defined using indicators that reflect national income and national income distribution. And just as income can be considered in a more or less progressive manner in national tax policy, it is considered in a more or less progressive manner when the capacity side of a given equity benchmark is defined. Responsibility, reflecting a nation's contribution to climate change, is represented by cumulative GHG emissions from a specified initial year, and, again, different initial years are used in different benchmarks. Using these benchmarks, responsibility and capacity are calculated for each country over time, and each country's fair share of the global mitigation effort in each year is determined by its share of global responsibility and capacity.

Figure 1 above shows how the necessary emissions reductions can be partitioned into fair shares for individual countries based on their national responsibility and capacity. The blue area in the left panel depicts the global mitigation requirement over time – the amount of mitigation needed to reduce emissions from the rising baseline emission trajectory to the 2°C mitigation pathway. The right panel then shows the division of this mitigation gap into national fair shares, over time, in proportion to each country's share of global responsibility and capacity.

This analysis has been carried out using the online *Climate Equity Reference Calculator*.⁹ It allows users to define a wide range of 'equity settings' (relating to responsibility, capacity and need) and then uses these definitions, along with standard demographic and macroeconomic indicators (eg, national population, GDP, Gini, carbon intensity) to transparently calculate national 'fair shares' of the common global effort.

The global mitigation pathway used in this analysis was selected as the most ambitious mitigation pathway that is widely used by the community of climate analysts, originates from a well-cited source, and derives from the IPCC's Fifth Assessment Report scenario analysis.

We decided to use Climate Action Tracker (CAT)'s '1.5°C pathway', a well-known distillation of the most stringent category of pathways in the IPCC scenario database. Notably, we do not call it a 1.5°C pathway, but rather a '2°C pathway'. That is because CAT characterises this pathway as having a "greater than or equal to 50% chance of being below 1.5°C in 2100". It cannot, therefore, be understood to be 'likely' to limit warming to less than 1.5°C above pre-industrial levels (in IPCC terminology 'likely' pathways require a success probability of at least 66%). On the other hand, this pathway does have a probability of more than 66% of limiting warming to less than 2°C in 2100, and therefore qualifies as a likely '2°C pathway' (and perhaps stronger) in IPCC terminology.¹⁰

⁹ The Climate Equity Reference Calculator is a creation of the Climate Equity Reference Project, which assisted in the production of this report. For more information, see <http://climateequityreference.org>

¹⁰ http://climateactiontracker.org/assets/publications/briefing_papers/CAT_EmissionsGap_Briefing_Sep2015.pdf

However, it must be emphasised that these probabilities translate into risk levels that would be considered entirely unacceptable in other areas of life. When constructing bridges or airplanes we only accept risk levels that are measured in fractions of a percent. The IPCC pathways, on the other hand, imply 33% or even 50% odds of warming beyond the 1.5°C or 2°C thresholds – temperature rises that are themselves extremely risky. If air travel involved a 33% risk of crashing, you would board a plane knowing there would be more than 30,000 plane crashes around the world that same day. However, we have now so overloaded the atmosphere with greenhouse gases that more reasonable risk levels (remember that there is a real risk that we will exceed 2°C with the emissions already in the atmosphere) are almost out of reach. Thus we have no choice but to pursue a carbon budget with considerable levels of risk; hence our choice of the CAT 1.5°C pathway (which we call, more correctly, a 2°C pathway) for this review. There is no room for overshooting this pathway. Every country must do all it can, working even to surpass its fair share.

Another reason for choosing the CAT pathway is that it is defined in a manner that excludes ‘delayed action scenarios’. It implies that global mitigation must be pursued promptly, without further costly delay. Many scenarios in the literature include extremely high levels of ‘negative emissions’ in the second part of this century. There are many concerns about how such negative emissions could be achieved and what the impacts of such efforts would be.¹¹ When considering the emission reduction pathway for this report it was important to select one that was not overly reliant on large negative emissions – the CAT 1.5°C pathway is consistent with that requirement.

THE “EQUITY RANGE” AND A THIRD BENCHMARK

As noted above, meaningful equity ranges that represent a broad range of defensible interpretations of the climate Convention’s core equity principles can be usefully described. The *exact* definition of such ranges, of course, involves political judgments on which reasonable people can – in good faith – differ.

In this assessment, we use an equity range that spans a breadth of perspectives along the two key dimensions noted above – historic responsibility and capacity.

More specifically, the benchmarks that span the equity range are defined as follows:

- The first (in shorthand terms, a **‘1950 / Medium progressivity benchmark’**) defines responsibility as cumulative national emissions since 1950 (a relatively recent date that marks the start of global acceleration of fossil fuel-based development) and relative to a moderately progressive definition of capacity. The capacity calculation is sensitive to national income distribution, which allows capacity to be defined in a manner that varies with income levels. In

this benchmark, all income (per person, per year) below a development threshold of \$7,500 purchasing power parity (PPP) is *excluded*, removing poor people’s income from the calculation of national capacity but including all the income above this threshold.

- The second (in shorthand terms, a **‘1850 / High progressivity benchmark’**) defines responsibility as cumulative national emissions since 1850 (approximately the start of the industrial revolution), and relative to a highly progressive definition of capacity.¹² In this benchmark, as in **1950 / Medium**, all income below \$7,500 PPP is *excluded* from the calculation of national capacity. Similarly, all income above a ‘luxury threshold’ of \$50,000 is included in this calculation. Between the two thresholds, a steadily rising weighting (analogous to successive tax brackets) that begins at 0% and rises to 100% includes gradually more of the income in the calculation of capacity.
- We also indicate a third benchmark, (in shorthand terms, a **‘1990 / Low progressivity benchmark’**) which is outside our equity range. It takes 1990 as its responsibility start date, and it uses a low development threshold of \$2,500 PPP per person per year. The reasons for indicating this benchmark and keeping it separate from the equity range are explained below

Each of these benchmarks also makes the same assumptions when balancing responsibility and capacity in the context of the Convention’s key principle of “common but differentiated responsibilities and respective capabilities”. In all cases, a nation’s “responsibility and capacity index” is calculated as a simple average of responsibility and capacity, in which both are weighted equally.¹³

The result of this analysis can be shown many ways. One of the most intuitively accessible is a time series chart for individual countries that shows their fair shares across the equity range. This is drawn as a light green strip that widens as it approaches 2030. At each of the years 2020 (the Copenhagen/Cancun pledges), 2025 and 2030 there is a green-and-red bar. This bar indicates the level of reductions (green segment) that would be at least as ambitious as the least stringent of the equity range benchmarks, and another level (red segment) that would fall short of even the most lenient of the two equity settings benchmarks. A country whose INDC falls in the green segment can be considered a ‘leader’, while one whose INDC falls in the red segment should be considered a ‘laggard’.

The following charts are for the USA, China and India. These countries were chosen because they are broadly representative of countries at very different levels of economic development.

Note that the y-axis presents emission levels in two different ways. On the left, we show national emissions in absolute tonnes, just as it is presented in standard emission inventories; on the right we show emissions in terms of the per-capita emission reductions that would be required relative to the 2030 baseline.

¹¹ Kate Dooley and Sivan Kartha, forthcoming.

¹² Some may question reaching back to 1850, but historical emissions are important. Consider only that the IPCC (Working Group I, Fifth Assessment Report, 2013) clearly states that up to 40% of all human CO₂ emissions will stay in the atmosphere for 1,000 years or longer.

¹³ The Climate Equity Reference Calculator itself supports such ‘pure’ calculations. It also supports any responsibility start date from 1850 onward, development thresholds (progressivity settings) as low as 0, an extremely high luxury threshold, and other variants on these equity settings. For more on the methodology here, see <http://climateequityreference.org/civil-society-equity-review/methodology>

FIGURE 2: UNITED STATES OF AMERICA – INDC PLEDGES AND THE EQUITY RANGE

The US's pledges are shown in the red area of the 2025 bar. They fall drastically short of its fair share of all three of our illustrative benchmarks. This picture would change if the US were to considerably increase its level of domestic ambition and commit to a significant level of international support.

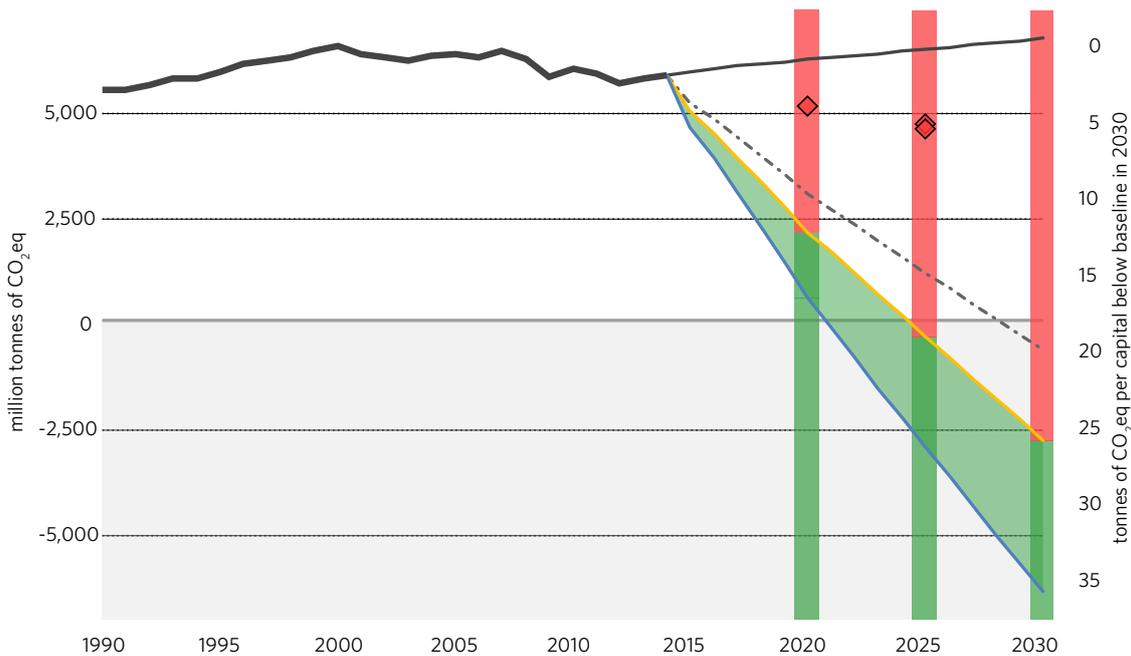


CHART LEGEND			
Historical Emissions	Baseline Emissions	Unconditional Pledge	
Equity Band, delineated by	1990 / Low progressivity benchmark	Conditional Pledge	
1850 / High progressivity benchmark and	'Leader Laggard' Bar		
1950 / Medium progressivity benchmark.			

FIGURE 3: CHINA – INDC PLEDGES AND THE EQUITY RANGE

China's pledges are shown on the 2030 bar. Note that the pledges exceed its fair share relative to both of our equity benchmarks.

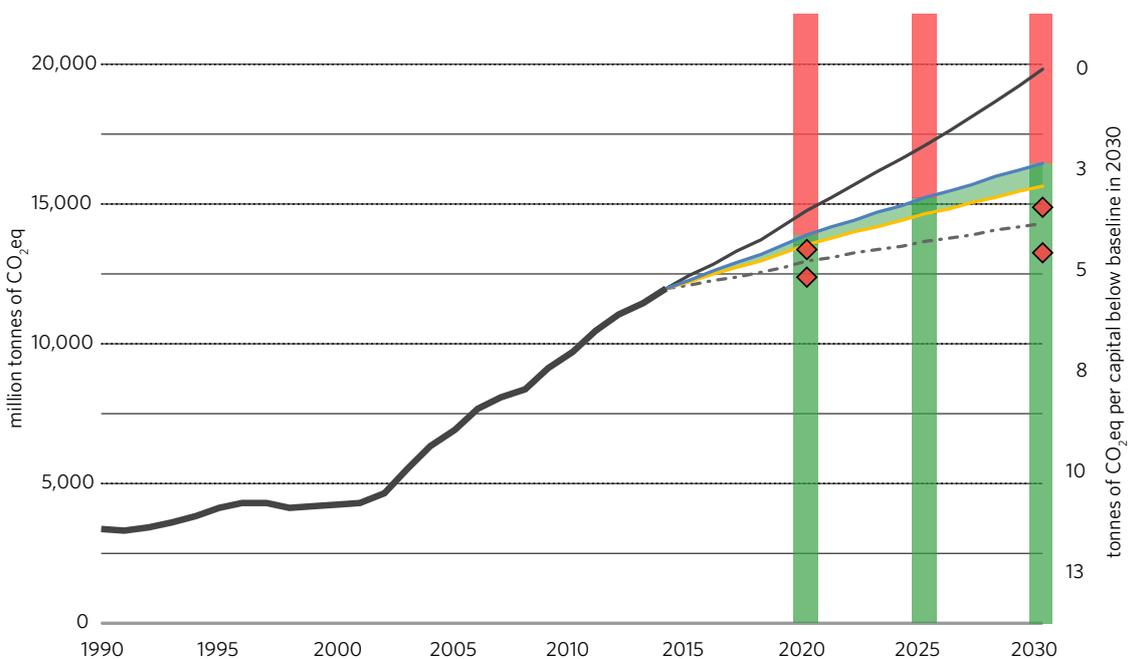


CHART LEGEND			
Historical Emissions	Baseline Emissions	Unconditional Pledge	
Equity Band, delineated by	1990 / Low progressivity benchmark	Conditional Pledge	
1850 / High progressivity benchmark and	'Leader Laggard' Bar		
1950 / Medium progressivity benchmark.			

FIGURE 4: INDIA – INDC PLEDGES AND THE EQUITY RANGE

India's pledges are shown on the 2030 bar. Note that it is difficult to map India's INDC pledges into fixed 'Conditional' and 'Unconditional' categories. Here we have chosen to show the stronger end of the pledge range as conditional.

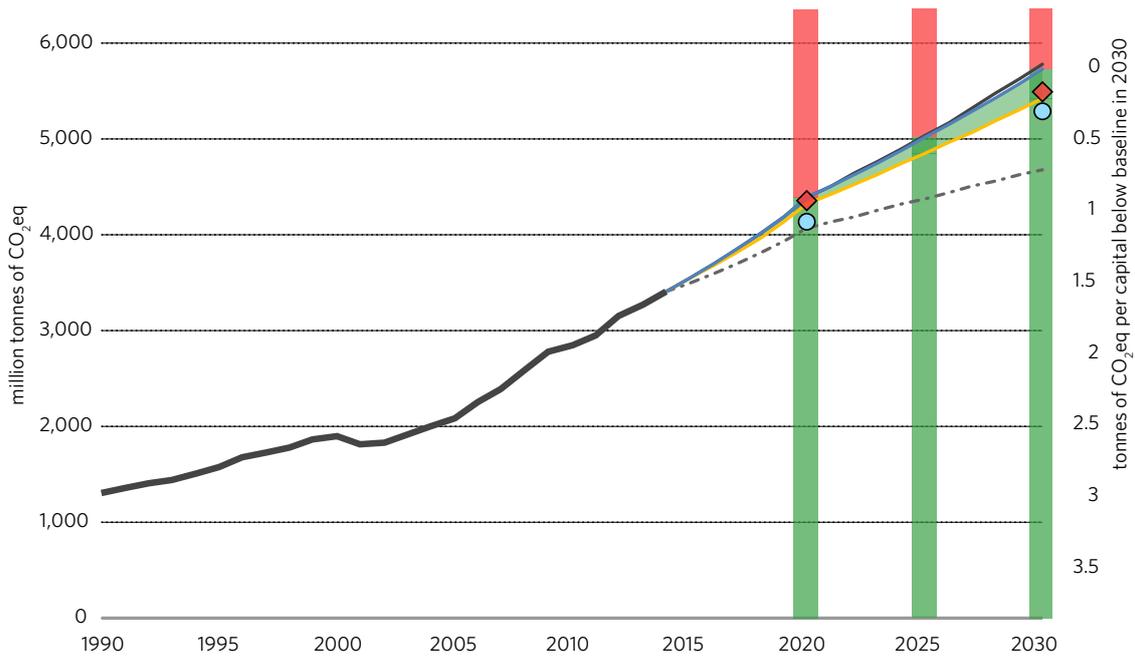


CHART LEGEND		
Historical Emissions	Baseline Emissions	
Equity Band, delineated by	1990 / Low progressivity benchmark	Unconditional Pledge
1850 / High progressivity benchmark and	'Leader Laggard' Bar	Conditional Pledge
1950 / Medium progressivity benchmark.		

The 1990 / Low progressivity benchmark is excluded from our equity range because this analysis is based on the Convention's equity principles. When the Convention was signed in 1992, the year 1990 was included as a contemporary reference point against which to measure developed countries' mitigation efforts by the year 2000. It was not intended as a reference point or start date for the concept of historical responsibility noted in its preamble. In legal terms, 1990 cannot be taken as the 'ordinary meaning' of the term 'historical emissions'. Moreover, disregarding all emissions from before 1990 is, we believe, deeply inequitable and inappropriate under a straightforward historically accurate reading of the Convention.

Similarly, the \$2,500 development threshold used in this analysis to define 'Low progressivity' can hardly, in any 'ordinary' sense, be taken as a reasonable development threshold. Such a level of per-capita income is much more reasonably described as a 'poverty exclusion' threshold than as an indicator of development. Such a low threshold would burden billions of poor people with a completely unreasonable share of the responsibility for dealing with climate change.

Nevertheless, we have included comparisons to a 1990/Low Progressivity benchmark to show that our key findings apply even to this benchmark.



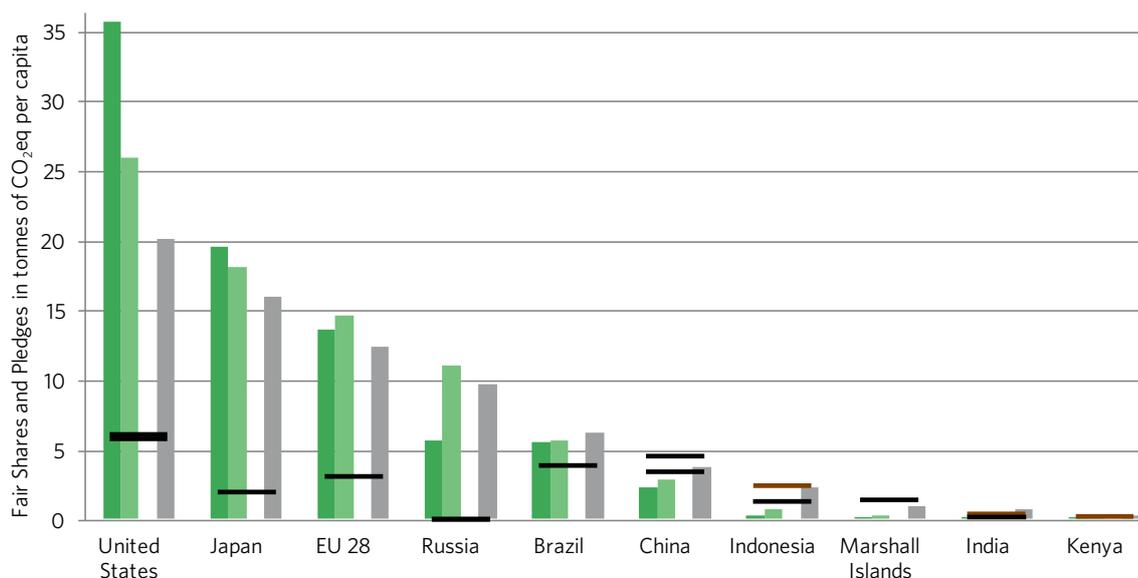
COUNTRY ASSESSMENTS

Figures 5-8 below compare the national pledges of ten countries. The first pair uses the metric we introduced above – per-capita mitigation below the 2030 baseline – which allows us to directly compare national pledges, without the results being overwhelmed simply by the relative sizes of the national populations. The second pair presents fair shares and INDC pledges in terms of total absolute amounts of mitigation required or pledged in a country. For each country, the first (dark green) bar gives the fair share of mitigation under the 1850 /High progressivity equity benchmark, and the second (light green) bar gives the fair share under the 1950 /Medium progressivity equity benchmark. (The grey bar shows the 1990 / Low progressivity benchmark for reference.) Our equity range appears here as the range bounded by the first two bars.

It is apparent that in fair-shares terms, countries at approximately the same level of economic development would need to make similar efforts. Similarly, countries at radically different levels of economic development can all be doing their fair share, even if their contributions differ hugely. Notably, the fair shares of countries at very low levels of economic development, such as Kenya and India, are insignificant compared to those at higher levels of economic development. Figure 6 presents a magnification of the right part of the chart in figure 5, showing only China, Indonesia, Kenya, the Marshall Islands and India. (To allow for easy comparisons of countries, a set of key indicators of level of development has also been included in the table below the chart in figure 5.)

FIGURE 5. PER CAPITA MITIGATION COMPARISONS

Comparison of mitigation fair shares and INDC pledges (in tonnes of CO₂eq per capita of mitigation below baseline in 2030) and selected levels of development indicators



Per Capita Fair Shares and Pledges in 2030 (tonnes of CO ₂ eq per capita below baseline)										
1850 / High Progressivity	35.7	19.6	13.6	5.6	5.5	2.3	0.2	0.09	0.04	0.05
1950 / Medium Progressivity	25.9	18.0	14.6	11.0	5.7	2.8	0.8	0.27	0.24	0.14
1990 / Low Progressivity	20.1	15.9	12.4	9.6	6.1	3.8	2.2	0.95	0.73	0.28
INDC Pledge*	5.8	1.9	3.1	0**	3.9	3.4	1.2	1.4	0.2	0.2
INDC Pledge*	6.1					4.5	2.4		0.3	
Level of Development Indicators (2013 or last year with data)										
Life expectancy at birth	79	83	80	71	74	75	71	65	66	62
Mean years of schooling	12.9	11.5			7.2	7.5	7.5		4.4	6.3
Per capita income (2011 PPP\$)	52,000	37,000	22,000	23,000	15,000	12,000	10,000	4,000	5,000	3,000
Electricity consumption (kWh/cap)	13,200	7,800	6,100	6,500	2,400	3,300	700	n/a	700	200
Share of World Capacity to Mobilise for Climate Action in 2013 (percent per 100 million people)										
1850 / High Progressivity	12	8	5	0.9	1.2	0.4	0.0	0.019	0.00	0.007
1950 / Medium Progressivity	9	8	5	1.5	1.3	0.6	0.1	0.068	0.02	0.023
1990 / Low Progressivity	8	7	5	1.7	1.5	0.7	0.3	0.260	0.12	0.050

* Unconditional pledges are shown in black, conditional pledges in brown. If countries have expressed their pledge as a range, both values are shown.
 For the United States, the values for the 2030 'INDC Pledge' have been derived by linear extrapolation between the 2025 INDC Pledge and a 80% reduction target for 2050
 ** Russia's INDC target is actually higher than reasonable business-as-usual emissions projection. We show it here as zero, as such a target implies no effort toward a fair share of global effort.

Figure 6 below shows the same data as figure 5, but excludes the more developed countries with the largest per-capita fair shares in the chart above. This allows for a scale more suitable to compare the countries with the smallest fair shares in our set.

The same data can also be presented in terms of absolute emissions reductions (as opposed to per capita metrics) – as in figures 7 and 8. By this measure the fair shares and INDC pledges become largely a function of the population size of a country, but it does allow for insightful comparison.

FIGURE 6. ZOOMED IN COMPARISON OF PER CAPITA MITIGATION

Comparison of mitigation fair shares and INDC pledges (in tonnes of CO₂eq per capita of mitigation below baseline in 2030; right part of figure 5 with adjusted scale)

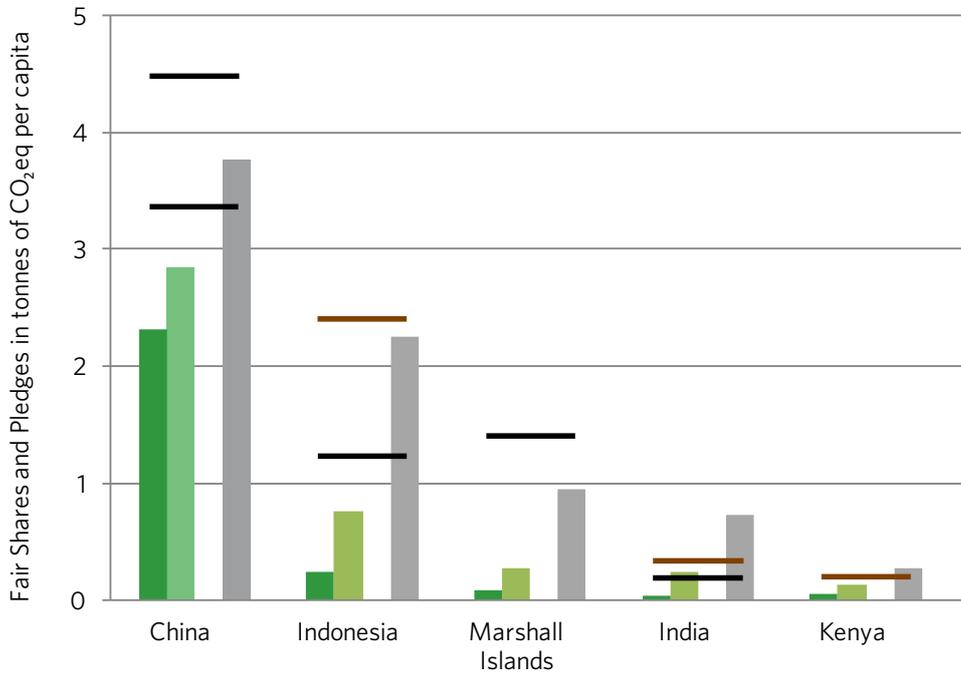
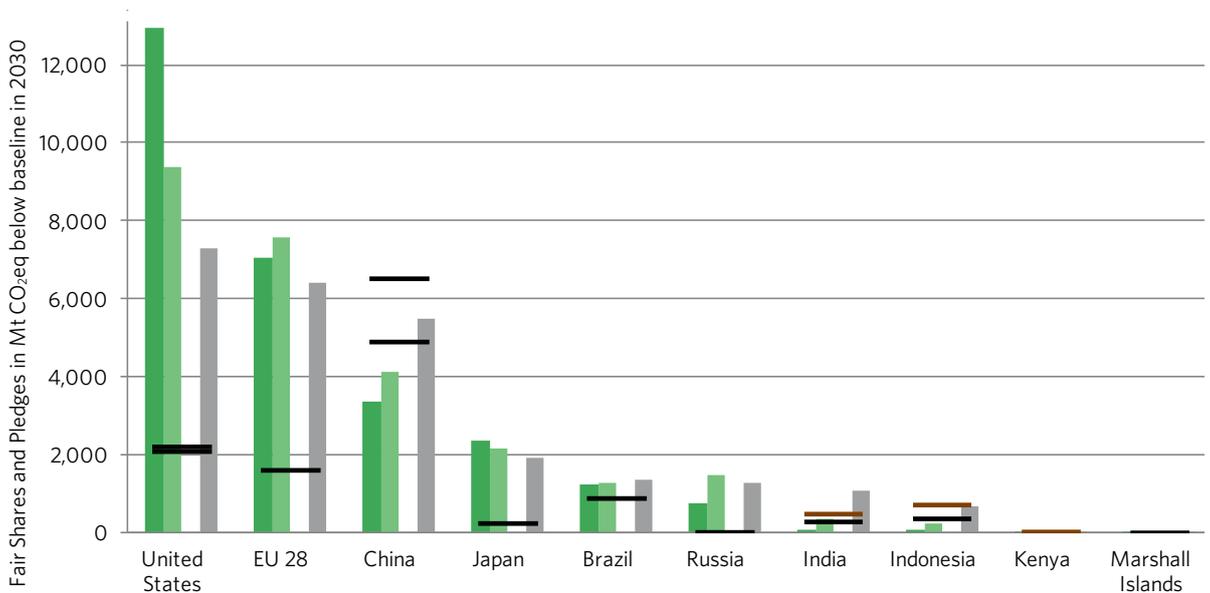


FIGURE 7. TOTAL MITIGATION COMPARISONS

Comparison of mitigation fair shares and INDC pledges (in million tonnes of CO₂eq of total mitigation below baseline in 2030).



Fair Shares and Pledges in 2030 (in million tonnes of CO₂eq below baseline)

	1850 / High Progressivity	1950 / Medium Progressivity	1990 / Low Progressivity	INDC Pledge*	INDC Pledge*
United States	12,943	9,382	7,286	2,089	2,203
EU 28	7,036	7,589	6,423	1,587	6,511
China	3,371	4,138	5,471	4,888	
Japan	2,361	2,176	1,918	228	
Brazil	1,221	1,261	1,369	861	
Russia	754	1,468	1,288	0**	
India	54	353	1,079	280	486
Indonesia	69	222	659	360	706
Kenya	3	9	19	13	
Marshall Islands	0.01	0.02	0.06	0.08	

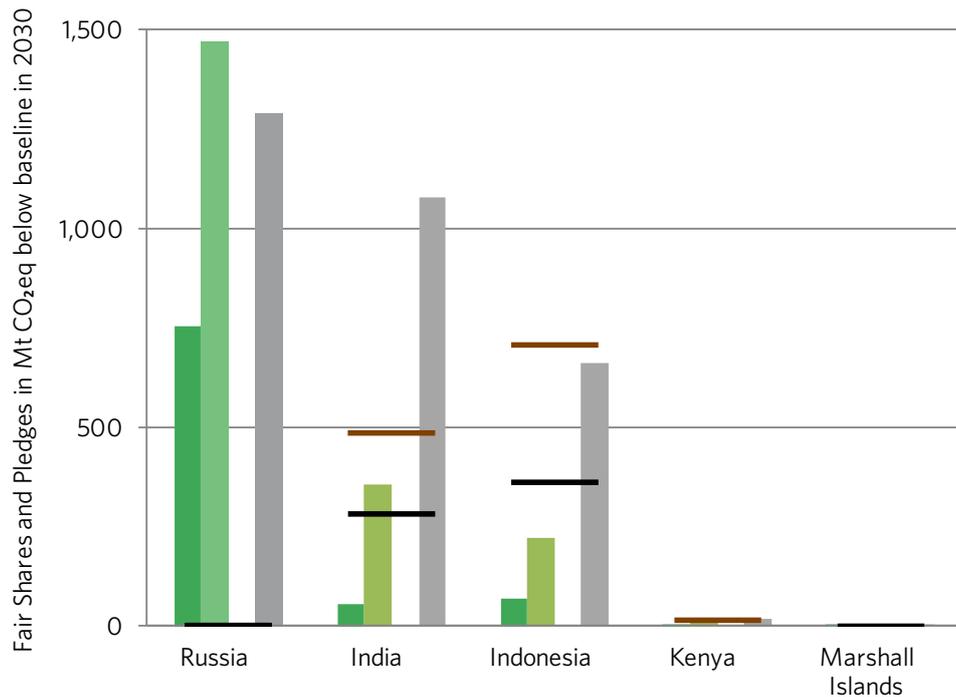
* Unconditional pledges are shown in black, conditional pledges in brown. If countries have expressed their pledge as a range, both values are shown.

For the United States, the values for the 2030 'INDC Pledge' have been derived by linear extrapolation between the 2025 INDC Pledge and a 80% reduction target for 2050

** Russia's INDC target is actually higher than reasonable business-as-usual emissions projections. We show it as zero, as such target implies no effort toward a fair share of global effort.

FIGURE 8. ZOOMED IN TOTAL MITIGATION COMPARISON

Comparison of mitigation fair shares and INDC pledges (in million tonnes of CO₂eq of mitigation below baseline in 2030; right part of figure 7 with adjusted scale)



Our goal here is to show that the fair-shares discussion can be more than a sterile and frustrating battle of opinions. To that end, we have charted out a broad range of fair-share perspectives, all of them rooted in the Convention, and then expressed them in terms of transparent indicators of capacity and responsibility. We have chosen these indicators to take account of developmental need, and used them to derive a plausible range of fair shares for countries. The resulting 'equity range' can clearly indicate whether a given nation's contribution is even remotely consistent with the demands of science and equity, and whether their INDC contributes to identifying that nation as a leader or a laggard.

The equity ranges lead to another important conclusion: that many wealthier countries' fair shares are much larger than their plausible domestic mitigation. For example, to be pledging its fair share under our equity ranges as domestic emissions reduction alone, the US would be expected to somehow reach zero emissions by 2021-24 and continue to reduce them significantly thereafter. Therefore, although the natural focus is on their domestic mitigation pledge – which still needs to be scaled-up significantly – a crucial element for evaluating any US contribution towards its fair share is its level of international support to developing countries.

The cost of mitigation varies significantly from country to country. So the easiest way to understand a fair level of international support from a country like the US is in terms of the extraterritorial emissions reductions that it should help to catalyse in developing countries, in line with those countries' own development priorities, through the provision of means of implementation. Reaching a fair share under our equity ranges would require the US to increase the impact of its 2025 emissions reduction pledge by 4.8 gigatonnes, through a combination of making deep domestic reductions and supporting emissions reductions in developing countries. So it is important that countries are transparent about both their international support and their domestic targets.

Some Parties have recently argued that any use of comparative indicators is tantamount to 'finger pointing'. But counter-productive cycles of recrimination and debate are exactly what

such an approach can help to avoid. Cooperation, again, is absolutely necessary to ambition. Yet if anything is certain it is that, in the years ahead, the national pledges will be repeatedly reviewed, compared, assessed – and continually judged. Our point is that if this assessment is done transparently – and in a manner that fully incorporates the Convention's fundamental principles and takes level of development into account – then there is at least a possibility that trust and understanding will be strengthened in the process.

If, on the other hand, it is assumed that all countries will only act domestically and that international cooperative action will be at best a minor addition to this domestic action, then finger pointing and recrimination are all but inevitable.

FAIR SHARES VS. PLEDGED ACTION

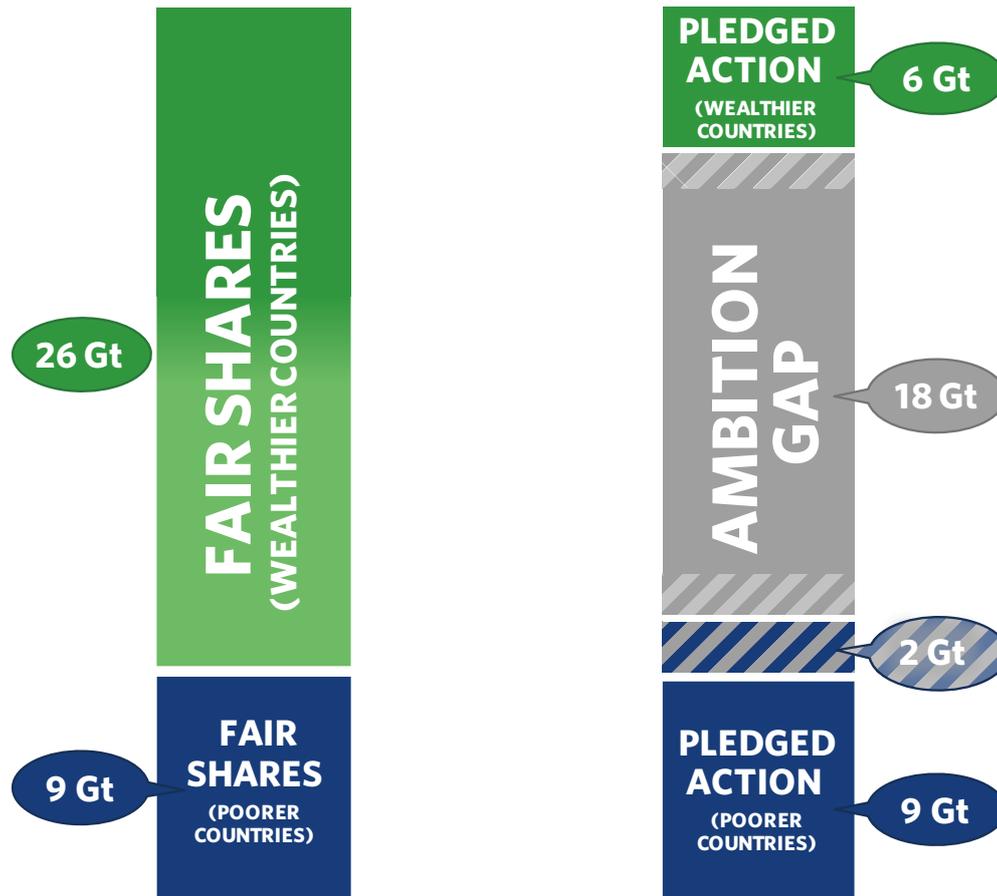
Figure 9 shows our aggregate assessment of the INDCs that have thus far been submitted (by October 1, 2015), which include countries contributing some 80% of current global emissions. The chart shows a direct comparison between fair shares (on the left) and actual effort pledged (on the right), for both wealthier and poorer countries. Here 'wealthier' refers to those countries who have fair shares so large that they must both undertake ambitious domestic mitigation and support poorer countries so they can reduce emissions beyond their own fair share. Since fair shares depend on the equity benchmark, this categorisation will shift as well.

This comparison clearly shows that poorer countries are unconditionally pledging to fulfil their fair shares, while wealthier countries are pledging much less. (The fair share of the wealthier countries is the combination of the darker and lighter green segments in figure 9.)

There is a notable corollary of the need for wealthier countries to pledge support for poorer country mitigation: to close the ambition gap, poorer countries will need to pledge higher mitigation targets through conditional targets that are linked to international support. As figure 9 shows, the conditional pledges of poorer countries (the blue-grey striped segment) are far too small to close the global mitigation gap. This is not surprising given that pledges of financial and technological support from wealthier countries are still unclear (see Mitigation Finance section on page 20). Even so, an important outcome of this review is to demonstrate what ambitious and equitable

international cooperation should look like under a multilateral climate regime: wealthier countries pledging adequate, scaled-up means of implementation to catalyse significantly higher mitigation pledges from poorer countries, with a substantial component of those pledges conditional on international support. This vision is achievable if we have an international climate framework that includes an ambition mechanism that can foster this kind of international cooperation.

FIGURE 9: FAIR SHARES VS. PLEDGED ACTION (mitigation in 2030 below baseline in Gt CO₂eq)



The left bar shows fair shares of wealthier countries (26Gt) divided into two: an indicative portion (darker green) that they would undertake domestically, and an indicative portion (lighter green) they would enable in poorer countries by providing financial and technological resources. The left bar also shows a portion (blue; 8.8Gt) that represents the mitigation that poorer countries would undertake domestically as their own fair share. The right bar shows the mitigation effort pledged by wealthier countries (green; 5.6Gt), by poorer countries that is not conditional on the receipt of international climate finance (blue; 8.8Gt), and by poorer countries that is conditional on finance (blue-grey striped; 2.0Gt). The right bar also shows the resulting ambition gap (grey; 18.3Gt) including the 'submission gap' (grey striped) that represents mitigation associated with wealthier and poorer countries that have not yet submitted an INDC (1.3Gt and 1.6Gt, respectively). This figure corresponds to the '1950 / Medium progressivity' equity benchmark and includes INDCs submitted by October 1, 2015.

KEY FINDINGS

Together, the commitments captured in INDCs will not keep temperatures below 2°C, much less 1.5°C, above pre-industrial levels. Even if all countries meet their INDC commitments the world is likely to warm by a devastating 3°C or more,¹⁴ creating the alarming possibility that the global climate system could be tipped into catastrophic runaway warming. The scale of the ambition gap is clearly illustrated on the right side of figure 9 above. It shows that the current INDCs contain barely half of the required emissions reduction by 2030.

THE EQUITY GAP

The ambition of all big developed countries falls well short of their fair share, which includes not only domestic action but also international finance. The onus is on developed country governments to commit to much greater domestic action, and to provide adequate international finance to meet their fair shares. Those with the starkest gap between their climate ambition and their fair shares include:

- **Russia** – INDC represents zero contribution towards its fair share¹⁵
- **Japan** – INDC represents about one tenth of its fair share
- **United States** – INDC represents about a fifth of its fair share
- **European Union** – INDC represents just over a fifth of its fair share

The majority of developing countries have made mitigation pledges that exceed or broadly meet their fair share. From the list of focus countries given in the next section, this includes **Kenya, the Marshall Islands, China, Indonesia and India.** Brazil's INDC represents slightly more than two thirds of its fair share. As stated above, even if developing countries' pledges exceed their fair share, developing country governments are challenged to commit to ambitious conditional targets that represent what they will do to bring the world onto a below 1.5°C, or even 2°C, pathway. They must also indicate the financial, technological and capacity-building support they need from wealthier countries to tap this potential.

This equity gap appears across the entire range of equity settings examined here. Even using settings that we do not accept as being equitable (eg, the 1990 / Low progressivity benchmark), we find that the wealthier countries still fall short of their fair shares of the global effort (which are smaller given such a benchmark

THE FINANCE GAP

Many developing countries are making mitigation pledges that exceed their fair share but are, partially or wholly, **conditional upon the receipt of support and investment from wealthier countries.** Many civil society organisations see these conditional pledges as a productive step. They are an opportunity to embark on an ambition ratcheting / acceleration process that radically scale up mitigation by matching the finance and technology needs of developing countries with support from developed countries.

Due to historical, high-carbon development the **fair shares of most wealthy countries are beyond what is still possible to carry out within their own borders, even with extremely ambitious domestic action.** They must therefore contribute the rest of their fair shares by enabling poor countries to reduce their emissions by an equivalent amount through financing and other support. As this review shows, the additional mitigation poorer countries will need to implement with international support accounts for a substantial portion of the reductions that need to take place globally. This shows the need for developed countries to massively expand their finance, technology and capacity-building support, on top of making the largest possible reductions in their domestic emissions. **Climate finance needs to be a critical part of developed countries' efforts to deliver their fair shares. But there is a striking absence of clear commitments.**

The finance needed in poorer countries for mitigation, adaptation, and loss and damage dwarfs the financial commitments that have been made to date, and (at the time of writing) developed countries have not set out what climate finance they will provide after 2020.

¹⁴ See analyses by Climate Action Tracker <http://climateactiontracker.org> and Climate Interactive <https://www.climateinteractive.org/tools/scoreboard/scoreboard-science-and-data>.

¹⁵ Note that Russia may further undermine global efforts if other developed countries purchase Russia's 'excess allowances', and thereby weaken their own their targets. International Energy Agency (IEA), 2014, World Energy Investment Outlook, pp. 135-160. In its 2°C scenario, the IEA calculates a need to increase investments to \$1.1 trillion annually for energy-efficiency measures across all sectors by 2035, more than six times higher than today.



MITIGATION FINANCE

MITIGATION FINANCE IS FUNDAMENTAL TO EQUITY

The analysis above shows that, in general, wealthier countries cannot fulfil their fair share of the global mitigation need within their own borders. To do their fair shares, they need to reduce emissions as fast as conceivably possible within their countries as well as enable large amounts of mitigation action in other countries, including through finance, technology and capacity building. To complement this, many developing countries, once they have achieved their own fair shares of the global effort by reducing emissions domestically, will have a potential for further mitigation, including hopefully increasingly zero or negative cost options. Financial support from developed countries and others with high capacity and responsibility is critical to unlocking this potential.

A number of countries have already offered to take action conditional on international support (see table 1 for examples).

In middle-income countries, this generally means action to reduce emissions below current levels by shifting off a high carbon development pathway. For lower-income countries it means finding new pathways that 'leap frog' fossil fuels and move straight to low-carbon and resource-efficient development societies, thereby avoiding large amounts of future emissions.

It must be recognized that while the mitigation potential in developing countries is large, in that a business-as-usual trajectory would mean massive increases in emissions globally, many of these reductions are not necessarily an easy task. They require comprehensive, bold policies, long-term planning and the embracing of alternative, equity-oriented and needs-oriented development pathways that are far from current mainstream trajectories of most countries.

It is important to note that most of the targets listed in the table below do not specify which portion of the implied action would be conditional on receiving means of implementation. Going forward, clearer targets that differentiate between unconditional components and those conditioned on finance, technology or capacity building would allow for more effective matching and assessment of the necessary means of implementation.

TABLE 1: EXAMPLES OF CONDITIONAL INDCS

	TARGET	CONDITIONALITY
DEMOCRATIC REPUBLIC OF CONGO	17% reduction from 2000 levels for agriculture, forests and energy for period 2021-2030.	Mitigation action is conditional on \$12.5 billion. Additional \$9.1 billion needed to support adaptation.
ETHIOPIA	64% or 255 MtCO ₂ e reduction from business as usual in 2030	"Contingent upon an ambitious multilateral agreement being reached among Parties that enables Ethiopia to get international support and that stimulates investments." "Full and effective implementation" requires an "estimated expenditure of more than \$150 billion by 2030". Research needed to determine the "required financial, technological and capacity building support" that will be needed, up to and beyond 2030.
INDIA	"To reduce the emissions intensity of its GDP by 33% to 35% by 2030 from 2005 level." "To create an additional carbon sink of 2.5 to 3 billion tonnes of CO ₂ equivalent through additional forest and tree cover by 2030."	"To achieve about 40% cumulative electric power installed capacity from non-fossil-fuel-based energy resources by 2030 with the help of transfer of technology and low cost international finance including from Green Climate Fund (GCF)."
MOROCCO	"To reduce its GHG emissions by 32 % by 2030 compared to 'business as usual' projected emissions."	"Meeting this target will require an overall investment in the order of \$45 billion, of which \$35 billion is conditional upon international support through new climate finance mechanisms, such as the Green Climate Fund."
COLOMBIA	"Subject to the provision of international support, Colombia could increase its ambition from 20% reduction with respect to business as usual to 30% by 2030."	Not specified

**TRINIDAD
AND TOBAGO**

“to achieve a reduction objective in overall emissions from the three sectors by 15% by 2030 from business as usual, which in absolute terms is an equivalent of 103 million tonnes of CO₂e.”

“The estimated cost of meeting this objective is \$2 billion, which is expected to be met partly through domestic funding and conditional on international financing including through the GCF.”

“Trinidad and Tobago will commit to unconditionally reduce its public transportation emissions by 30% or 1.6 million tonnes CO₂e compared to 2013 levels by December 31, 2030.”

MEXICO

“to reduce unconditionally 25% of its GHG and Short Lived Climate Pollutants emissions (below business as usual) for the year 2030. This commitment implies a reduction of 22% of GHG and a reduction of 51% of Black Carbon.”

“The 25% reduction commitment expressed above could increase up to 40% in a conditional manner, subject to a global agreement addressing important topics including international carbon price, carbon border adjustments, technical cooperation, access to low cost financial resources and technology transfer, all at a scale commensurate to the challenge of global climate change. Within the same conditions, GHG reductions could increase up to 36%, and Black Carbon reductions to 70% in 2030.”

MITIGATION FINANCE NEEDS

There is no clear, given methodology for costing the global mitigation effort. There is, however, a range of cost / investment need estimates for the global mitigation effort necessary to stay below 2°C or 1.5°C, with more confidence in the energy production and end use sectors, and less confidence in estimates for reducing emissions from agriculture, deforestation and other land-use. For a 1.5°C or even 2°C degree pathway, there is consensus that the annual investments required in the energy sector alone have to grow significantly up to about \$1 trillion per year by 2020 and up to about \$2 trillion per year by 2030/2035.

To give a few examples: Recent analysis by the International Energy Agency indicates that Parties will need to create policy frameworks that can mobilize around \$1 trillion in new funding annually by 2020 and up to \$2 trillion annually worldwide by 2035, when about \$1 trillion is required per year for energy efficiency¹⁶ and renewables¹⁷ each, from the both public and private sectors. Regarding energy efficiency, IEA adds that significant energy and related cost savings through these investments could sharply reduce overall costs or even result in net benefits over time. Similarly Bloomberg New Energy Finance estimates that investments of \$880bn annually will be needed in 2030 for renewables alone, mainly solar and wind.¹⁸

Clearly, the big issue for the coming decades will be how countries pursue their transformations towards 100% renewable energy. Will it be increasingly people- and community-centered, environmentally appropriate, smart, distributed solutions that lead to just transitions, thriving local economies and new development pathways? Or will it largely be a replication of centralized models that are dominated by a few large corporations?

While we may not agree with all the IEA and Bloomberg’s assumptions and views on future energy trajectories, for illustrative purposes we do here use their estimates of the

required scale of climate mitigation finance (to deliver clean energy only; additional finance will be needed for mitigation from forestry and land use). While not a definitive calculation, it clearly shows that current levels of mitigation finance are significantly below what will be required in any high-ambition transition.

Assume (as above) that an average of \$1 trillion per year by 2020 in up-front investments in clean energy (energy generation and efficiency) is needed globally. The IEA estimates¹⁹ that two thirds of this is in developing countries, which yields a need of at least a \$666 billion investment each year in clean energy in developing countries alone (this does not include other sectors such as forest measures, or any sorts of just transition measures). Based on the assumption that private finance is primarily leveraged by public finance, one can calculate the amount of public finance needed by using leverage ratios. Even if one applies an *optimistic* leverage ratio of three to one²⁰ (\$3 private investment delivered for every \$1 of public investment), then the *public* investment needed would be a minimum of \$166 billion per year (=666÷4). If one applies a lower leverage ratio of 1.5 (which while lower is not the lowest end of the spectrum), then the public investment needed to transform the energy sector could be in the order of \$266bn (=666÷2.5).

It should also be emphasised that there is, in addition, a key role for public investment for public goods (ie, direct investment in renewable energy, community energy systems, smart grids, energy efficiency and mitigation measures in other sectors by governments, municipalities, communities, universities, hospitals etc.), distinct from its value in leveraging private finance.

In view of this, and the expectation that public finance for mitigation will have to grow substantially toward 2030, actual need is likely to be greater than a range of \$166-266 billion per year.

There are of course huge differences between developing countries, in terms of their ability to mobilise public and private resources – both domestic and international. This must be taken into account to not leave the poorest countries behind when it comes to the shift to renewable energies.

¹⁶ International Energy Agency (IEA), 2014, World Energy Investment Outlook, pp. 135-160. In its 2°C scenario, the IEA calculates a need to increase investments to \$1.1 trillion annually for energy-efficiency measures across all sectors by 2035, more than six times higher than today.

¹⁷ Bloomberg New Energy Finance (BNEF), 2013, Global Renewable Energy Market Outlook 2013 – Fact Pack, The “Barrier Busting Scenario” BBS, pp. 13 ff. BBS, the most ambitious renewables expansion scenario, projects as an option (policy driven) an about \$900 billion annual investments in renewables, particularly solar and wind.

¹⁸ Barrier Busting Scenario on P.13 of <http://about.bnef.com/presentations/global-renewable-energy-market-outlook-2013-fact-pack/>

¹⁹ http://www.worldenergyoutlook.org/media/weowebsite/2014/weio/FactSheet1_Overview.pdf

²⁰ See leverage ratios highlighted in WRI report based on empirical data: <http://www.wri.org/sites/default/files/getting-to-100-billion-final.pdf>

MITIGATION FINANCE GAP

Unfortunately the scale of public finance provision today is woefully inadequate; our best estimate of climate-specific international public finance for mitigation puts it in the region of \$15 billion. This assumes an increase on the reported numbers in the last UNFCCC biennial report (for 2011 and 2012 finance flows) which were around \$12-13 billion annually for mitigation. It is unclear from the biennial report what proportion of this is grant-based finance.²¹

Our conclusion is that current levels of public climate finance are far below what will be needed in the 2020 to 2030 period (\$166-266 in 2020, rising substantially by 2030, according to the logic above) for energy-related mitigation *alone*. A substantial part of this should be supported by public finance from developed and other contributing countries. If this seems an inaccessibly high amount, consider that, globally, an estimated \$523 billion in direct fossil fuel subsidies were paid out in 2011²² (with significant

amounts in both developed and developing countries). The IMF raises this estimate to an astonishing \$5.3 trillion (6.5% of global GDP) by including the external costs from the impacts of fossil-fuel use,²³ which of course includes the impact cost of climate change. These estimates reveal the public finance and overall \$1-2 trillion in annual investment needed to transform the energy sector to be a comparably small sum.

In the future, energy-related investments must stimulate a massive transformation of the global energy market – helping to ‘shift the trillions’ of dollars due to be spent on infrastructure from fossil fuels to renewables. This will not happen, at least not at the necessary pace, without public money to catalyse the green shift in both public- and private-sector investment. Also, and this is a key conclusion that Paris must recognise, countries with the greatest capacity and responsibility to support emissions reductions must do so not only within their borders but also in other countries.

FINANCE FOR ADAPTATION, LOSS AND DAMAGE

ADAPTATION FINANCE IS FUNDAMENTAL TO EQUITY

Alongside support for mitigation, international support to help developing countries adapt to the effects of climate change must be at the heart of the Paris agreement, as an integral part of sustainable development. Adaptation finance is vital to enable communities and ecosystems to adapt to current and future climate impacts. It is also a basic building block of a fair agreement: one that accords with countries’ relative responsibilities for the problem, and their capabilities to address it. Fundamentally, international climate finance to address the incremental costs²⁴ of mitigation, adaptation, and address loss and damage is rooted in the recognition of the reality that those who did least to cause climate change are being affected first and worst.

Climate change is an immediate, grave, and growing threat to development and conservation, making the battle to overcome poverty ever harder and more expensive. International climate

finance to developing countries is essential if we are to reduce climate impacts and overcome the increased risk of floods, hunger, droughts and disease, as well as growing inequalities within and between countries. The lives and livelihoods of poor and vulnerable women, children and men depend on it. The resources most developing countries have to cope with for climate change are limited. The challenge for poorer and more climate-vulnerable countries is particularly acute, given that many already lack sufficient resources to meet the basic needs of their citizens, such as health, education, and access to water. The cost of addressing climate impacts is an additional burden on developing countries for which they are not primarily responsible.

ADAPTATION FINANCE NEEDS

Over the past decade, the understanding of climate change impacts and associated costs has improved, and with that the estimates of adaptation finance needs have increased. In 2007, a UNFCCC assessment put adaptation needs in developing countries at \$28-67 billion annually by 2030. Then in 2010, the

²¹ According to the first UNFCCC biennial reports, which detail developed country climate finance provision to developing countries in 2011 and 2012, parties provided approximately \$17 billion per year of climate-specific finance of which \$10.5-11.3 billion (62-67%) was directed to mitigation. A further \$3-3.2 billion was cross-cutting – therefore we have accounted for 50% of it being for mitigation (\$1.5-1.6 billion). UNFCCC (2014) Biennial assessment, p44 <http://bit.ly/1BeGeoL>.

²² International Energy Agency (IEA), World Energy Outlook, 2010, Paris.

²³ IMF, June 2015, <http://www.imf.org/external/pubs/ft/survey/so/2015/new070215a.htm>

²⁴ For example, renewable energy project should not be regarded as 100% climate finance given there are other development benefits and reasons for such a project.

World Bank put the costs at around \$70-100 billion per year between 2010 and 2050.

UN Environment Programme (UNEP)'s *Adaptation Gap Report* (2014) is the most up-to-date assessment. It draws on new national and sector studies and provides a preliminary assessment of costs that are potentially two to three times higher than previous estimates. UNEP estimates the costs of climate change adaptation plus residual damage:

- For Least Developed Countries alone costs could be in the range of \$50 billion per year by 2025/2030 – and by 2050 it could be double that: \$100 billion per year (for a scenario of 2 °C increase by 2050).
- For all developing countries costs of \$150 billion per year by 2025/2030, and \$250 billion to \$500 billion per year by 2050 (for a scenario of 2 °C increase by 2050).

The report also shows that the adaptation costs over the next few decades will increase significantly with higher levels of warming – costs are likely to more than double by 2050 (in relative terms as a percentage of GDP) if we stay on our current trajectory towards 3°C or even 4°C of warming

While the estimates contained in the UNEP report are substantial, the authors and other leading experts note that existing assessments may underestimate the costs involved for a number of reasons, including: huge omissions in existing studies, including biodiversity and ecosystems, and extreme events; studies tend to assume complete certainty about future climate impacts; and studies do not consider the transformational type of adaptation that will be necessary, particularly in high-temperature-rise scenarios.

It is clear from these estimates that the Copenhagen commitment to mobilise \$100 billion per year by 2020 from public and private sources for adaptation and mitigation falls well short of what is needed.

THE ADAPTATION FINANCE GAP IS HUGE

There is a considerable lack of transparency regarding current flows of adaptation finance to poorer countries, especially in recent years (2014-2015). However, regardless of methodology, it is clear that there is a huge shortfall between the scale of finance required, as set out above, and the scale of finance being provided.

Public, grant-based adaptation finance for developing countries from OECD Development Assistance Committee members can be estimated at \$3-5 billion in 2013. This figure is derived from the OECD's project-level database on climate-related development finance projects, which includes the most recent relevant data available (ie, compared to the UNFCCC's most recent biennial review, which includes figures for 2011-2012).²⁵

Similarly, the last UNFCCC biennial report (for 2011 and 2012

finance flows) reports that public finance was around \$4-5 billion annually for adaptation.²⁶ It is unclear from the biennial report what proportion of this is grant-based finance, and it is also unclear whether flows may have increased or decreased in subsequent years. Even with extremely optimistic assumptions that this entire figure is in grants and flows have increased by 20% since 2012, it's clear that the resulting figure falls far short of the need.

By any estimate, adaptation finance today is a tiny fraction of the Copenhagen commitment of \$100 billion per year by 2020. The \$100 billion figure does not reflect the real need, yet even if we accept it, and that half of it would be dedicated to adaptation, that means current provision is 10-18 times lower than the Copenhagen commitment. Commitments to rapidly scale up public, grant-based adaptation finance for adaptation in the pre-2020 period are urgently needed.

The development and financing challenges of climate change are compounded by contributor countries' failure (bar a few notable exceptions) to meet their Official Development Assistance (ODA) commitments, and by their double counting of most, if not all,²⁷ of their climate finance as ODA. This fails to recognise that climate change results in additional costs and responsibilities beyond the 0.7% GNI ODA commitment. Latest figures from the OECD Development Assistance Committee (DAC) indicate 17% of total bilateral ODA in 2013 was labelled as climate-related finance and, conversely, almost all climate finance (and probably all adaptation finance) given by OECD governments to developing countries is ODA. Climate finance support should not come at the cost of support for health, education and other essential development priorities.

THE PARIS AGREEMENT MUST BRIDGE THE ADAPTATION FINANCE GAP

For the post-2020 period there is currently no clarity on scale, nor any commitments to specific timelines or targets for finance.

In the interest of overall equity and justice concerns, the Paris agreement must establish global public finance adaptation targets for 2020, 2025 and 2030. It must also set up a process for updating these targets in light of advances in the best available science, changing global temperature rise scenarios, and bottom-up national needs assessments. The agreement must include a commitment that at least half of all public climate finance is allocated to adaptation.

An equitable Paris agreement must also establish a means of allocating fair shares of adaptation finance for contributor countries, based on historic responsibility and capability.

²⁵ The lower end of the range includes only the \$2.4 billion of grants provided for projects with adaptation marked as a 'principal' objective, while the upper end includes a 30% share of the \$6.4 billion of grants for projects with adaptation as a 'significant' objective. In the absence of a detailed review of every ODA-financed project marked as relevant to adaptation, we consider 25-30% a reasonable yet still quite generous compromise.

²⁶ According to the first UNFCCC biennial reports, which detail developed country climate finance provision to developing countries in 2011 and 2012, parties provided approximately \$17 billion per year of climate-specific finance of which \$2.5-3.2 billion (15-19%) was directed to adaptation. A further \$3-3.2 billion was cross-cutting – therefore we've accounted for 50% of it being for adaptation (\$1.5-1.6 billion). UNFCCC (2014) Biennial Assessment, p44 <http://bit.ly/1BeGeol>.

²⁷ <http://www.oecd.org/dac/stats/climate-change.htm>

Adaptation finance fair shares are an essential part of a realistic path towards achieving the required levels of climate finance, and a core part of assessing whether a country is meeting its fair share of overall climate action. The core Paris agreement must include individual country commitments to adaptation finance that are aligned with their fair share.

LOSS AND DAMAGE IN THE PARIS AGREEMENT

Most INDCs are unlikely to feature significant consideration of loss and damage, so it is somewhat outside the scope of this report. However, addressing loss and damage is a major priority for many vulnerable countries, and needs to be anchored in the Paris agreement. Loss and damage – and the finance necessary to support addressing it – is separate and additional to adaptation and adaptation finance needs.

There are limits to adaptation. Finance for climate-induced loss and damage that exceeds these limits will be essential for communities and countries that have done the least to contribute to climate change and yet must deal with devastating losses and damages from extreme and slow-onset climate events. Inadequate mitigation ambition and insufficient adaptation support leads to more loss and damage. Contributor countries must recognize that loss and damage is a separate issue from adaptation in the Paris agreement, as its impacts come after

mitigation and adaptation efforts have failed or are insufficient to curb or avoid the worst impacts.

While the UNEP adaptation finance figures quoted above include, in principle, residual damage, this aspect of the costs is likely to be highly underestimated. That is because most studies to date do not include extreme events, and those that look at extreme events tend not to include all types of climate-induced damage caused by sea-level rise, increasing desertification, ocean acidification, glacier retreat, loss of biodiversity, loss of culture, loss of lives, etc. Moreover, truly costing residual damage will always be inherently difficult, not least due to the ethically questionable exercise of financially valuing the irreversible extinction of species and the loss of human lives.

Vulnerable countries are already experiencing devastation at a 0.85°C rise above pre-industrial temperature levels. But loss and damage impacts and costs will be far higher at 1.5°C or 2°C. And we would be facing a very different world at 3°C, which is exactly where we're heading if today's mitigation INDCs are not significantly strengthened. Climate losses and damages would be unimaginably far-reaching and would also require many non-financial measures. Anchoring an effective mechanism for addressing loss and damage in the new global climate regime is therefore necessary to ensure equity and justice for developing countries and for creating incentives for urgent mitigation and adaptation action.

THERE IS NO

PLANET B



RECOMMENDATIONS/ ACTION AGENDA TO CLOSE THE EMISSIONS GAP

This Equity review has demonstrated the dramatic lack of fairness among different countries' commitments, and the striking gap in overall ambition and commitments.

Nothing less than a systemic transformation of our societies, our economies and our world will suffice to solve the climate crisis. Not only is equity a moral imperative in its own right, it is also vital for enabling the unprecedented transformations of our societies that climate change requires in a manner that leaves no one behind.

It means that governments must come together to agree the following:

1. THE PARIS AGREEMENT MUST ENSHRINE A FRAMEWORK THAT ENSURES DOMESTIC COMMITMENTS AND GLOBAL TARGETS ARE SET IN ACCORDANCE WITH SCIENCE AND EQUITY

To have any reasonable chance of staying below a risky 1.5°C warming, or even the very risky 2°C, all countries must agree on keeping emissions within the available carbon budget according to the fair shares framework presented here. The most stringent of the IPCC's carbon budgets (400–850 GtCO₂ for the period 2011–2050) will, at current emissions rates, be entirely exhausted in 10–20 years.²⁸

Crucially, governments must recognise that a carbon budget approach is crucial to determining country commitments (both finance and mitigation), and countries' INDCs must be formulated within the parameters of what their fair share of that budget is.

This will require:

- early action to prevent exhaustion of the carbon budget or even exceeding it. This will include the formulation of concrete, aggregate targets for emissions reductions/allowed appropriation of a specific portion of the carbon budget over five year periods starting from 2020–2025 and continuing up to 2050, with radical reductions early to ensure that cumulative emissions do not overshoot these targets
- strengthening of ADP workstream 2 on pre-2020 action with support for bold action²⁹ as a model for what could be done in future. Workstream 2 is also a forum where countries can experiment with new forms of international cooperation

that help to activate the conditional portions of developing country INDCs

- countries to formulate INDCs in accordance with their fair shares including, for all countries, domestic emissions reductions. In addition, countries with greater responsibility and capacities should offer commitments for finance, technology and capacity-building support. Countries with lower responsibility and capacity should also indicate conditional additional emission reductions that could be achieved if support is provided (to be unlocked upon the delivery of the appropriate amount of support)
- ensure that 100% renewable energy and full decarbonisation by 2050 (and not the end of the century) are captured as international objectives and not confused with ambiguous 'net-zero' formulations that open the door for continued high fossil fuel emissions, agricultural approaches with adverse social and ecological consequences, land-grabs and risky geo-engineering.

2. THE PARIS AGREEMENT MUST INCLUDE A STRONG MECHANISM TO INCREASE AMBITION OF INDCS

To ensure the Paris agreement does not lock-in inadequate INDCs, a strong ratcheting-up mechanism with maximum five-year intervals is vital. Recognising the currently extremely low ambition of negotiations the Paris agreement must ensure, at a minimum, that:

- currently inadequate INDCs are not cemented – the deal must not lock-in inaction, but rather be a starting point for scaled-up action in the near future
- a ratcheting-up mechanism is established that facilitates the near-term strengthening of the present INDCs (before they come into effect in 2020). This mechanism must enable progressively deeper commitments to be made every five years, in line with agreed principles for fair shares. The means to transform the updated commitments into legally binding commitments are also vital.

To ensure environmental integrity and ultimately to keep warming below 1.5°C, there needs to be full transparency of the level of ambition of targets as well as the implementation of those targets. Any false emission reductions that are claimed or any targets that actually represent emissions increasing over

²⁸ To keep below 1.5°C, with the kind of risk levels that societies normally apply to dangerous activities, there is in fact no budget left. For details, see IPCC, 2013: Summary for Policymakers: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. (See Page 27 for the carbon budget details.) http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf

²⁹ In line with the Africa Group's call for a global partnership for global renewable energy support programme and civil society's similar demand for a global Programme for Global Renewable Energy and Energy Access Transformation

business as usual trajectories will create trust deficits between countries and ultimately threaten the entire response to climate change. Therefore, the Paris agreement must establish a strong transparency framework with a robust set of accounting rules to ensure that governments can be held accountable for their actions (including provision of means of implementation), assist with comparability and facilitate understanding of whether sufficient action is being taken.

3. SUBSTANTIAL NEW COMMITMENTS TO CLIMATE FINANCE IN DEVELOPING COUNTRIES FOR MITIGATION, ADAPTATION AND LOSS AND DAMAGE ARE ESSENTIAL

The Fair Shares framework shows that developed countries on the whole need to reduce their domestic emissions and provide support to developing countries sufficient to unlock 15 GtCO₂eq of reductions in 2030.³⁰ Based on the analysis above, the public finance support required for climate mitigation in developing countries could be in the order of hundreds of billions of dollars annually between 2020 and 2030. Much of this public finance will have to come through international flows.

Public climate finance needs for adaptation and loss and damage amounts to at least the same, and probably more, and will escalate for every delay in serious emissions reductions.

Even with the current 0.85°C rise above pre-industrial levels, the scale of loss and damage is tremendous and global. The scale of loss and damage with 2-3°C of warming is unimaginable. The Paris agreement must address this concern by adequately anchoring an effective mechanism for addressing loss and damage in the new global climate regime. This is important and necessary for ensuring equity and justice for vulnerable countries and communities, and for incentivising urgent mitigation action.

4. COUNTRIES MUST SCALE UP ACTION TOWARDS JUST AND SUSTAINABLE ENERGY TRANSFORMATION

Countries need to urgently implement bold and visionary plans for a just transition to low-carbon economies. Scaled-up action must include phasing out dirty energy, with developed countries going furthest and fastest, and redirecting finance to renewable energy in developing countries. Plans must cut across all sectors of society and support workers and communities who depend on sectors that will need to change in order to decarbonise. This should include dedicated social-protection measures, re-skilling and life-long learning, sustainable investment in the economic diversification of affected communities and social dialogue.

Sustainable energy transformation means: redirecting finance from dirty energy to clean, affordable, reliable and safe renewable energy and energy efficiency; supporting people's solutions, including decentralised community renewable energy systems; and banning new dirty energy projects such as shale gas, new coal, or tar sands. Ensuring that access to clean, affordable, reliable and safe renewable energy is a public good; as is reducing energy consumption particularly by wealthy individuals and countries. It also means ensuring that reducing poverty and achieving justice must be prioritized throughout the transformation.

5. JUST TRANSITION AT A NATIONAL LEVEL

Delivery of the recommendations above requires fair and just action at a national level, including:

- **bold, forward-looking, visionary planning** for structural change through: policies, regulations, standards, incentives, subsidies, public awareness raising, education, institutional strengthening, litigation, public participation, and many more actions.
- **putting people, the planet and well-being at the heart of government action.** This means among other things putting in place policies to transform our food, water supply, energy, financial and social protection systems so that they secure people's needs. It also means assisting workers and communities whose livelihoods depend on sectors that must change through just transition policies. It means enacting and enforcing policies to address gender inequality.
- **ensuring people's access to water; adequate, nutritious food; and land and other natural resources for climate resilient food production.** This means stopping land grabs and the ongoing conversion of land from food to commodities like first generation biofuels that are falsely presented as solutions to the climate crisis. Importantly this will require supporting sustainable agro-ecology and climate-resilient food systems.
- **justice for impacted people** – securing and building the resilience of in particular the poorest and most vulnerable people and ecosystems, who have not contributed to the problem of climate change. This would include providing finance and resources for their adaptation efforts, for their rehabilitation and to address loss and damage, and to ensure a just transition for workers into the new environmentally sustainable and socially inclusive economy.

³⁰ In addition to this mitigation ambition gap, there are also 2.9Gt of mitigation required in 2030 from countries that have not yet submitted INDCs. Clearly, those countries have to submit INDCs according to their fair shares to fill this 'submission gap'.

CONCLUSION

We see Paris as a beginning of the next era of climate action rather than an end – an opportunity to start connecting people’s demands for justice, equality, food, jobs, and rights, and to strengthen the movement in a way that will force governments to listen and act in the interests of their people and not in the vested interests of elites. Paris will launch us into 2016 as a year of action – a year when people’s demands and people’s solutions take centre stage.

This would see a transformation of the UNFCCC into a space for genuine multi-stakeholder participation, deliberation and negotiations towards concrete actions.

Climate change needs our urgent commitment and action, in global solidarity. We will work to hold governments and companies accountable for the adequacy and implementation of commitments and promises on climate action, while continuing to call out those corporate and political leaders actively working against the just transition to a safer and more equitable climate future. And our numbers will grow as the climate movement becomes more united and linked beyond the COP in Paris. We will encourage more citizens to support people’s solutions. We will continue our work at local, national, regional and global levels to ensure that it is people that spearhead the just transformation of our society.

TECHNICAL ANNEXES

For additional technical information, see the links below. Or just visit the *Climate Equity Reference Project* website at <http://climateequityreference.org>

METHODOLOGY DETAILS

For more information on the methodology behind this analysis, see <http://climateequityreference.org/civil-society-equity-review/methodology>

MITIGATION PATHWAY DETAILS

See <http://climateequityreference.org/civil-society-equity-review/mitigation-pathway>

FURTHER COUNTRY DETAILS

See <http://climateequityreference.org/civil-society-equity-review/countries> for a “jump table” that takes you to specific pages within the Climate Equity Reference Calculator for more information. And sometimes to the INDC review pages, when they exist.



SIGNATORIES

For an up-to-date list of signatory organisations that support this review please visit <http://civilsocietyreview.org/organisations>, where you can also learn how your organisation can become a signatory.

The following groups, organisations and movements support the analyses, findings and recommendations of the Civil Society Equity Review of the INDCs

International

- 350.org
- ActionAid International
- CARE International
- Center for International Environmental Law
- Christian Aid
- CIDSE
- Friends of the Earth International
- Global Policy Forum
- IBON International
- International Trade Union Confederation
- LDC Watch International
- Oxfam
- Third World Network
- What Next Forum
- WWF International
- Climate & Sustainable Development Network of Nigeria (CSDevNet)
- De la Plate-forme Togolaise de l'Alliance Panafricaine pour la Justice Climatique (PACJA-Togo), Togo
- DRC Climate Change Network, Democratic Republic of Congo
- Economic Justice Network, South Africa
- Egyptian Climate Change Platform – Chapter of PACJA, Egypt
- Ivory Coast Climate Change Network – PACJA Chapter
- Lead Tchad, Chad
- MAUDESCO, Mauritius
- Niger Platform on Climate Change and Sustainable Development
- Pesticide Action Network, Mauritius
- Rural Association for Mutual Support, Mozambique
- Somali Climate Change Network
- Uganda Climate Change Coalition
- World View Gambia
- Zimbabwe Climate Change Coalition

Regional

- African Women's Economic Policy Network
- Arab Network for Democratic Election
- Asia Pacific Forum on Women, Law and Development (APWLD)
- Asian Peoples Movement on Debt and Development
- Climate Action Network Latin America
- Climate Action Network South Asia
- Horn of Africa Regional Environmental Network
- Migrant Forum in Asia (MFA)
- Pan African Climate Justice Alliance
- South Asia Alliance for Poverty Eradication (SAAPE)
- South Asia Food Sovereignty Network
- South Asia Peasant Coalition
- SUSWATCH Latin America
- Young Friends of the Earth Europe
- Aksi! for Gender, Social and Ecological Justice, Indonesia
- All Nepal Peasants Federation
- All Nepal Women Association (ANWA)
- Alyansa Tigil Mina (ATM) – Alliance Against Mining, Philippines
- Arab NGO Network for Development
- Asia Pacific Farmers Forum – South Asia, Nepal
- Bangladesh Adivasi Samity
- Bangladesh Kishani Sabha
- Bangladesh Krishok Federation
- Beyond Beijing Committee (BBC), Nepal
- Campaign for Climate Justice Nepal
- Center for Socio-Economic Research and Development, Nepal (CERDN)
- Centre for Environmental Justice/Friends of the Earth Sri Lanka
- Centre for Science and Environment, India
- Civic Concern Nepal (CCN)
- Dalit Landless Peasants Association, Nepal
- DebtWatch, Indonesia
- Digo Bikas Institute, Nepal
- Environics Trust, India
- EquityBD, Bangladesh
- FIAN Nepal
- Freedom from Debt Coalition, Philippines
- GEFONT Trade Union Policy Institute, Nepal
- GITIB, Incorporated, Philippines
- Greenovation Hub China
- Himalaya Niti Abhiyan India
- Indian Social Action Forum – INSAF, India
- KRuHA, Indonesia

Africa

- Abibimman Foundation, Ghana
- Actions en faveur de l'homme et de la nature (AFHON), Ivory Coast
- APEDDUB, Tunisia
- Botswana Climate Change Network
- Civil Society Network on Climate Change, Malawi

- National Federation of Youth NGO Nepal
- National Hawkers Federation, India
- National Network on Right to Food Nepal (RtFN)
- National Youth Federation Nepal (NYFN)
- Our Rivers, Our Life (OROL), Philippines
- Pakistan Fisherfolk Forum
- Philippine Movement for Climate Justice
- River Basin Friends, India
- Rural Reconstruction Nepal
- SANLAKAS, Philippines
- Sawit Watch, Indonesia
- Solidaritas Perempuan, Indonesia
- SUPRO, Bangladesh
- Task Force Detainees of the Philippines
- VOICE, Bangladesh
- Women Peasants Association, Nepal
- Women Welfare Society (WWS), Nepal
- Youth for Climate Justice – Davao City, Philippines
- Youth for Climate Justice – Iligan City, Philippines
- Youth for Climate Justice – Ozamis City, Philippines
- Youth Peasants' Federation, Nepal
- Zo Indigenous Forum, India

Europe

- Attac France
- Norwegian Church Aid
- Oil Vay: Jewish Climate Action, UK
- PUSH Sweden
- Réseau action climat France (Climate Action Network France)
- This Changes Everything UK

Latin America

- Asociación Ambiente y Sociedad, Colombia
- Bolivian Platform on Climate Change
- Centro Alexander von Humboldt (Nicaragua)
- Instituto del Tercer Mundo, Uruguay
- Movimiento Ciudadano frente al Cambio Climático – MOCICC, Perú

North America

- Association québécoise de lutte contre la pollution atmosphérique (AQLPA), Canada
- Canadian Interfaith Fast for the Climate
- Canadian Unitarians for Social Justice
- Canadian Voice of Women for Peace
- Church World Service, United States
- Climate Action Network Canada – Réseau action climat Canada
- ClimateFast, Canada
- David Suzuki Foundation, Canada
- Earth in Brackets, United States
- EcoEquity, United States
- Environmental Defence Canada
- Friends of the Earth Canada
- Green 13, Canada
- SustainUS, United States
- Tipping Point Collective
- Windfall Ecology Centre, Canada
- World Federalist Movement – Canada

ANNEX : WHO HAS COMMITTED TO THEIR FAIR SHARE OF GLOBAL CLIMATE ACTION?

