Climate & Environment Programme

Development Progress

Targeting Zero Zero

Achieving zero extreme poverty on the path to zero net emissions

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Summary
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This summary is based on a discussion paper, 'Targeting Zero Zero', published by ODI in December 2014 (Granoff et al, 2014). The discussion paper was developed as input into the Development and Climate days at COP 20 in Lima, presented in collaboration by Red Cross/Red Crescent Climate Centre, the International Institute for Environment and Development, the Overseas Development Institute and Climate Development Knowledge Network. The theme was 'Zero Poverty. Zero emissions. Within a generation' and the days provided a platform for a diverse set of voices who believe it's important to unite these agendas and bring zero zero within reach.

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Key messages

About 1 billion people currently live in extreme poverty, surviving on less than $1.25 a day (Povcal, 2015). Eradicating extreme poverty should be regarded as the minimum ethical obligation of the global development agenda [1]. The climate crisis, however, threatens our ability to meet this obligation.

Climate change will hit the very poorest hardest and threatens to undo many of the hard-fought development gains achieved in recent decades. Left unabated, climate change will disrupt the global economy to the point that poverty eradication, even if fleetingly achieved by 2030, would be impossible to sustain.

The global economy must reach zero net greenhouse gas (GHG) emissions by 2100 under almost all scenarios to limit average global mean temperature increases to the generally agreed 2°C, and thereby avoid catastrophic and irreversible climate change (IPCC, 2014). To achieve this, all countries need to take urgent action to shift towards very low GHG emission economies. Developed countries must make deep cuts against their current emissions, while developing countries will need to ensure that their current investment choices cut their forecasted emissions: global emissions must peak by around 2030. Even if we achieve this, adaptation will be required to limit the impact on the poor of already locked-in climate change.

Contrary to some assertions, the goal of zero net emissions is compatible with eradicating extreme poverty. Early evidence suggests that low-emission economic development, although radically different from our historic experience, is consistent with the combination of moderate, sustained growth and reductions in inequality needed to eradicate poverty. In fact, many low-emission interventions can also be growth enhancing. Even the most pessimistic estimates suggest only a slight drag on growth; a scenario entirely compatible with rapid poverty reduction if inequality is addressed. In contrast, the economic impacts of unchecked climate change will be enormous.

A zero net emissions trajectory is critical to meet our obligations to eradicate extreme poverty by and beyond 2030. Achieving this will mean zero global growth in emissions by 2030. To achieve zero zero, development efforts must be more pro-poor and low-emission.

Avoiding dangerous climate change necessitates zero net greenhouse gas emissions

Reaching zero net GHG emissions before 2100 is required to avoid an average temperature rise of 2° Celsius in almost all scenarios modelled by the Intergovernmental Panel on Climate Change (IPCC, 2014). Parties of the United Nations Framework Convention on Climate Change (UNFCCC) have already agreed under the Copenhagen Accord that the 2° C target represents the limit beyond which the world will see 'dangerous anthropogenic interference' (UNFCCC, 2009).

Adopting a goal for zero net emissions, even by the end of the century, has immediate implications for action, as cumulative global emissions must peak by around 2030. Although theoretically a zero 'net' emission goal suggests that some countries could still emit while others remove GHGs from the atmosphere, in practical terms a zero net emissions pathway means that all countries will need to structure their economies to reflect very low future emissions. Big GHG emitters in the OECD need to make immediate reductions from current levels and developing country GHG emitters need to adjust downwards their future, forecasted emissions trajectories (Figure 1). Even the 'delayed' peak of lower income countries would likely need to occur not long after 2030 in most scenarios.

The immediacy of action needed to achieve zero net emissions has real consequences for policy and investment choices. Not least because major policy shifts will take time to work their way through the economy in light of the inertia of current patterns of consumption and production, but also because the peaking of GHG emissions for most economies will occur within the life cycle of current investments, particularly in infrastructure.

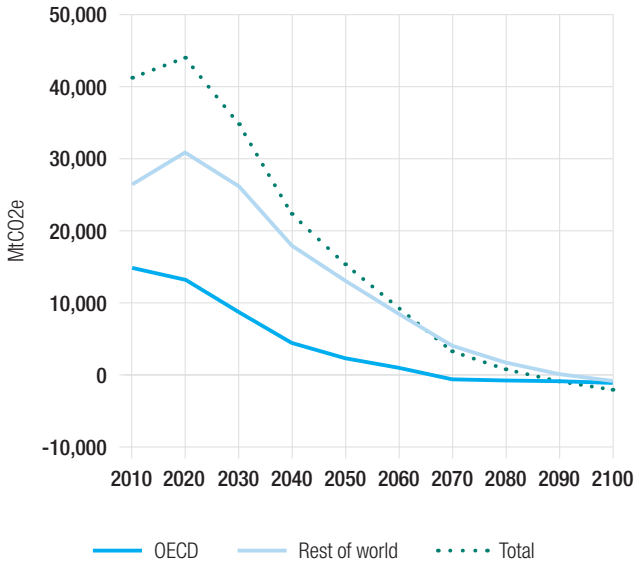
Poverty eradication is impossible without a zero net emissions pathway and adaptation actions

A zero net emissions pathway is necessary for sustained poverty eradication. Unabated, climate change will reverse the poverty reduction gains made over the past few decades and those hoped for in the lifetime of the Sustainable Development Goals (SDGs) (Gutierrez et al., 2014). Poor people are most impacted by climate change, and will likely suffer from reduced primary sector productivity, increasing exposure to climate extremes, increasing child malnutrition, higher incidence of airborne diseases and secondary impacts on child and female education, fertility and violence (Guiterrez et al., 2014; Granoff et al., 2014).

A failure to reach a zero net emissions pathway risks pushing the zero extreme poverty goal out of reach. Even

[1] By most measures, including here, zero extreme poverty means reaching a global rate of extreme poverty of 3% (Ravallion, 2013).

Figure 1: Countries must collectively reach zero net emissions in 2100, but have different peak emission points



Source: Zero net emissions scenarios based on IEA WEO Current Policies scenario and IPCC RCP2.6 scenarios with concentrations of 450ppm in 2100.

staying within a 2° C world, climate change can delay hundreds of millions in their escape from poverty and could pull back those who have recently escaped from extreme poverty but remain vulnerable (Table 1). For a sense of scale, the 700 million incidences of poor people affected by just three climate impacts described in Table 1, is about the same as the total number of people lifted from extreme poverty in the last two decades of record development progress (Povcal, 2015).

Even if we succeed in shifting to a pathway of zero net emissions by 2100, we will be locked into the significant climate impacts of a 2° C global average temperature rise (IPCC, 2014). Meeting and sustaining a zero extreme poverty goal not only requires limiting climate change, but also building resilience and reducing the vulnerability of poor people to its impacts. Climate change adaptation is therefore critical.

In a world exceeding 2° C, however, adaptation will become an increasingly costly and even implausible mechanism to avert climate change's impact on poverty eradication. On a global 2° C pathway, adaptation is expected to cost Africa $35 billion by 2050. Catastrophic impacts like major sea-level rise begin to result in much larger damages of up to $350 billion a year (Schaeffer et al., 2013), making adaptation all the more costly.

Table 1: Estimates of additional poor people impacted between 2030-2050 by even a 2° mean temperature change as a result of its most quantifiable impacts: declining primary sector productivity, climate extremes and child malnutrition and stunting

Climate impacts	Number of people entering poverty in a 2° C average temperature change scenario	Description
Decline in primary-sector productivity	250-500 million people in extreme or 'moderate' poverty (living on less than $2 per day) exposed to multi-year, possibly decadal, set-backs to their efforts to exit extreme poverty.	Estimated impact of the decline in agricultural and livestock productivity are applied to the likely size and distribution of the rural poor in 2030 in sub-Saharan Africa and South Asia.
Increased exposure to climate extremes (drought)	An additional 100-150 million of the extreme or moderate poor in rural areas are pulled deeper into poverty through exposure to extreme drought.	Estimated impact of droughts on the livelihood of poor rural households by combining historic damage data, projected future droughts, and the likely size and distribution of the rural poor beginning in 2030 across regions.
Child malnutrition and stunting	About 120 million additional children are malnourished and 90-120 million suffer stunting (30-40 per decade).	Estimated impact of climate change on the number of additional children suffering from malnourishment and stunting as a result of climate change over the course of each decade in sub-Saharan Africa and South Asia as global temperatures warm to 2°.

Sources: Granoff et al, 2014.

Poverty eradication requires equal, moderate and sustained economic growth

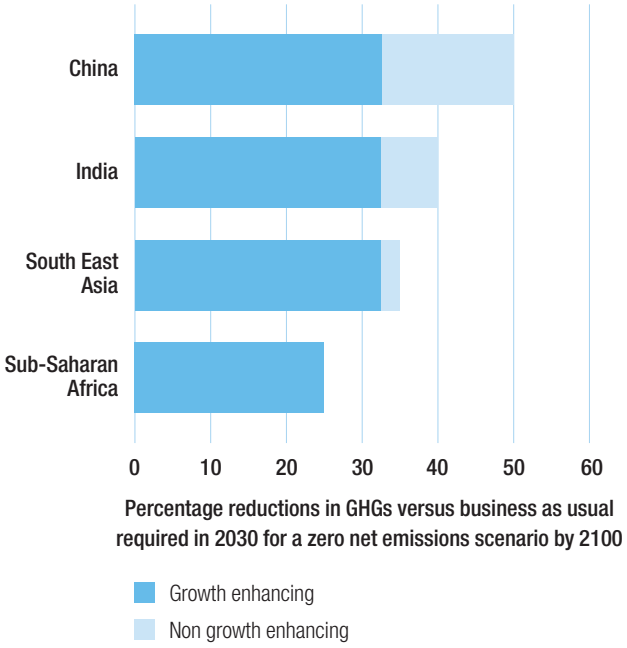
If a zero net emissions pathway is necessary for poverty eradication, we must also consider the conditions under which we are likely to eradicate poverty on that pathway. Economic growth is unquestionably part of reaching zero extreme poverty. A major contraction of the global economy would make it difficult to expand consumption of the poorest. Although extreme poverty could be eradicated overnight through a direct redistribution of the world's current wealth, continued growth is necessary for sustained poverty reduction. This is because a lasting, resilient change to the consumption levels of poor people will show in our measures of growth, and because positive growth is also necessary to maintain the social protection measures necessary to help highly vulnerable groups stay out of poverty traps.

To be clear, an increase in global consumption as a result of shifting all people out of extreme poverty – to minimum income levels of $1.25 per day – would hardly register in GDP terms. However, poor people's income levels would need to eventually move well beyond this baseline to avoid significant deterioration in living standards and rapidly restore livelihoods after economic shocks. It is all the more important in the context of climate impacts that the poor be resilient to such shocks. Lifting the poor 'to and through' the poverty line, to a degree sufficient to maintain the poverty goal, reinforces the need for growth. All projections of extreme poverty eradication therefore assume a steady state of growth. However, relying on the continuation of trends in high growth rates alone, without considering changes to the structure of that growth, places the achievement of a zero extreme poverty goal on a precarious foundation. In fact, based on the most recent and more moderate growth rate projections, reaching the 3% poverty goal by 2030 is almost impossible holding all else constant (World Bank, 2014).

The diminishing returns that growth has shown in its ability to reduce poverty is due to the location and structure of remaining poverty and, most importantly, due to the increasing inequality of that growth. The rate of growth for poor people is much lower than that of the average, so it takes far greater average growth across the economy to translate into income growth for the poor. Even with moderate growth rates, a focus on reduction in inequality forges a more realistic path to poverty eradication. For example, India had nearly twice the annual consumption growth rate as Bangladesh in the late 2000s, but consumption growth among extreme poor people in the two economies was identical (Povcal, 2015).

Rapidly reducing the inequality of wealth is possible through means such as cash transfers (Ravaillon, 2013). Measures to change the inequality of growth, and poor people's share in it, are less rapid but can also work. It requires the generation of greater human capital, such as through: investments in education and health; helping the poor accumulate assets; improving pro-poor infrastructure; increasing employment opportunities; and enhancing political representation (Baulch, 2011; Alatas et al., 2013). Such measures are not easy to implement. While poverty eradication is important, it often gives way to other policy priorities and the interests of politically powerful constituencies. It is, however, possible to eradicate poverty if we make equal, moderate and sustained growth work to improve the welfare of poor people a priority.

Figure 2: GHG reductions for zero net emissions and growth enhancing mitigation opportunities in countries or regions with extreme poverty



Source: Granoff et al, 2014.

A zero net emissions pathway is compatible with achieving more equal, moderate and sustained growth

A zero net emissions pathway is compatible with the moderate, more equal, and sustained growth necessary for zero extreme poverty, and at the same time necessary to avoid the economic disruption caused by climate change. It may even be better at achieving economic growth: early evidence suggests that most zero net emissions alternatives could provide more quantifiable economic benefits rather than costs as compared to 'business as usual' (McKinsey & Co, 2009; MoFED, 2011; IEA, 2012; Cervigni et al., 2013; Akbar et al., 2014; NCE, 2014).

The growth benefits of zero net emissions pathways result from a large number of 'negative cost' opportunities. These represent improvements to economic output as a result of shifting away from 'business as usual' and can get

Table 2: Key mitigation actions can have beneficial impacts for those living in extreme poverty

Mitigation action	Direct (distribution related) impact on the extreme poor
Climate-smart agriculture practices	Direct increase of agricultural productivity and income for those in extreme poverty. Direct increase in the value of land for poor land-owners. Increased resilience and reduced risk of large income fluctuations.
Increased public transport	Reduction in health-related costs from air pollution. Greater mobility at lower cost, which expands employment opportunities and net benefits.
Low-emissions waste management	Reduction in health-related costs from poor sanitation.
Reduced subsidies for fossil fuels and fertilizer	Better-targeted technical and cash transfers increase the income of those in extreme poverty.
Distributed renewable energy (electric and household thermal)	Reduction in health-related costs from indoor pollution. Access to energy at lower cost than high-carbon alternatives.

Source: Granoff et al, 2014.

us much of the way towards zero-net emissions (Figure 2). The IEA's 'Efficient World Scenario', for example, estimates that African economies collectively could achieve emissions reductions of around 25% by 2035 compared to business as usual, exclusively with negative cost options and with a 3.9% *increase* to GDP (IEA, 2012). Analysis of India's mitigation options suggest that emissions reductions of between 15% and 30% by 2030, compared to business as usual, can be achieved through negative cost options alone (McKinsey & Co, 2009; Akbar et al., 2014).

Existing macroeconomic studies tend to estimate the global economic impacts of a zero emission pathway of between +1% to -3% of GDP by 2050 (NCE, 2014; IPCC, 2014). Even where there are modest positive economic costs, however, these do not imply negative growth nor challenge the economic growth necessary for poverty eradication. These must also be set in context of the much greater economic costs of climate change inaction, estimated at approximately 5% of GDP per year (Stern, 2007). Even at the low end, positive costs are compatible with poverty eradication, and represent the equivalent of anywhere between 6 - 24 months of economic growth cumulatively over the next few decades.

The trend towards fuller treatments of climate action co-benefits further strengthens the argument that mitigation can be good for economic growth in poorer countries (Akbar et al., 2014; NCE, 2014). There are many direct benefits to poor people of climate action, including improving their productivity and access to public services, and the effectiveness with which their consumption is subsidised (Table 2). If specific mitigation actions are also to generate positive distributional benefits, however, they must be actively structured with sustained poverty alleviation in mind. A low-carbon pathway can, therefore, strongly support the reorientation toward the more pro-poor growth that will be required to ensure poverty eradication by 2030.

Achieving zero extreme poverty on the path to zero net emissions

If we take the permanent eradication of extreme poverty seriously, all countries must take immediate steps towards zero net emissions to avoid dangerous climate change. Achieving and sustaining extreme poverty eradication will depend on it. More equal, moderate, and sustained economic growth required for zero extreme poverty is compatible with a low GHG emissions pathway. This reality leads us to two main conclusions.

First, it is policy incoherent for big GHG emitting countries to support poverty eradication as a development priority, whether through domestic policy or international assistance, while failing to shift their own economy toward a zero net emissions pathway. In fact, most of these countries will need much more ambition in reducing domestic emissions if they are serious about a zero extreme poverty goal. Unabated, developed world emissions will sustain or further contribute to global poverty levels. Therefore, the basic ethical obligation to eradicate extreme poverty also makes tackling climate change a moral responsibility for all major emitters.

Second, domestic measures to combat poverty should no longer be seen in conflict with low-emission, climate-resilient development. In fact, mitigation activities have been shown to enhance growth in countries with populations of extremely poor people. Although some mitigation choices can involve costs, sensible low emissions strategies do not make it difficult to expand consumption of the poorest. The major change required is the reduction in the inequality of growth – to help poor people participate in the economy and become the engines of growth themselves. Zero extreme poverty is only sustainable if we are on the path to zero net emissions and this should, therefore, be a moral priority for all countries.

The eradication of extreme poverty has become more challenging in the context of climate change. This is not because it is more costly, but because achieving Zero Zero requires a rethink in how we approach development and poverty eradication. In particular, making sure the development agenda is more ambitious, adaptive to locked-in climate impacts, and on a low-emissions pathway.

Ultimately, a series of domestic policy choices will determine whether Zero Zero is targeted or not, regardless of the nature, scale, and even moral imperative of international support. Countries with extreme poverty will themselves need to ensure that they develop in way that is climate compatible. It is equally true that the interlinked relationship between the 'zero' goals creates a strong moral imperative for the international development community to redouble its efforts, while making them low-emissions. Only with the combined domestic and international commitment toward these two goals, will we have the chance to fulfil the moral obligation of eradicating extreme poverty, permanently.

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