



## Zero poverty... think again

Impact of climate change on development efforts

Summary for policy makers

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Climate change can exacerbate existing development challenges, exposing the vulnerability of the poor and pushing those living on the margins closer to the edge. It has the potential to reduce and reverse development gains made in eradicating poverty and to make achieving additional gains even harder. The post-2015 process is an opportunity to shape future development efforts for many years to come. However, if climate change and shocks are not tackled simultaneously to such development efforts, we risk failing in our efforts to eradicate poverty.

This summary, based on an [ODI working paper](#), examines the impact of climate change on different potential post-2015 goal areas. It draws on official reports from the IPCC, IEA, World Bank, OECD, UN agencies and peer-reviewed literature, to review existing knowledge about the impact of climate change on eight indicative goal areas:

1. Food security, nutrition and agriculture
2. Access to energy, water and sanitation
3. Health
4. Reducing poverty
5. Education
6. Gender equality
7. Peace and security
8. Sustainable jobs and access to prosperity

With the level of irreversible climate change we are committed to, the post-2015 process provides an opportunity to ensure that development efforts prepare the world in such a way that poverty reduction does not take a step backwards as climate impacts on vital areas of human development. We also know that unless improvements in human development can be achieved with significant emissions reductions and alongside action on climate change, then poverty reduction and human progress in the long term will be impossible, and the effects will be felt most severely by those living in poverty or close to the poverty line.

The post-2015 development goals are being considered as a universal framework that guides action in all countries to end poverty and realise sustainable development. They are also meant to tackle the key global challenges hindering the achievement of these goals. And climate change is a serious challenge that affects all countries. When all impacts are considered jointly, there is no doubt that addressing climate change must be pivotal to any development effort. Tackling climate change is development.

Shaping policy for development

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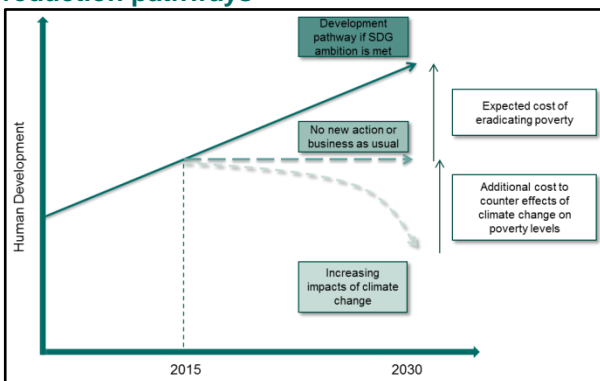
Our mission is to inspire and inform policy and practice which lead to the reduction of poverty, the alleviation of suffering and the achievement of sustainable livelihoods.

# Links between climate and development

The case for climate change caused directly and indirectly by human activity is unequivocal. The current rate of warming coupled with present global emissions trends and emissions reduction pledges potentially set us on a path to reach global average temperature increases in the range of 3° to 5°C by 2100 (World Bank, 2013). In the near term, development planning needs to account for a likely global 1.5°C rise that is already locked in (IPCC, 2013) and a variety of resulting localised climate changes.

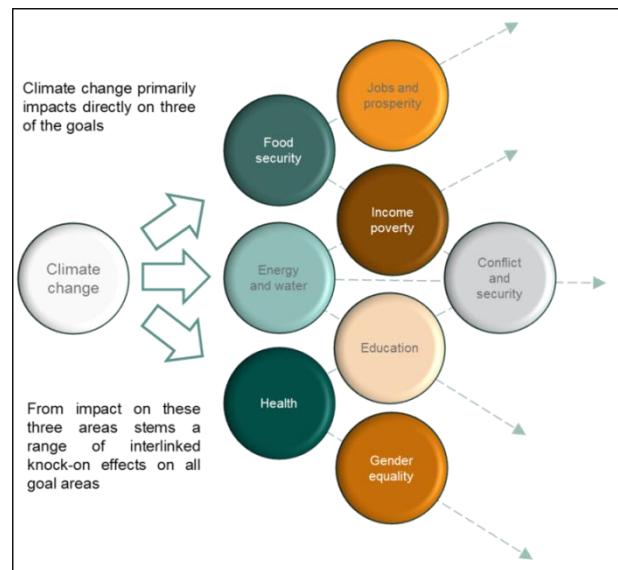
Even if the international community manages to continue the advances made by the MDGs in eradicating poverty, climate change must be tackled if these poverty reductions are to be sustainable in the longer term. While the development community understands the gap between current levels of human development and our ambition, there is a significant disconnect between our level of ambition and what could be required if climate change erodes the gains made in reducing poverty (Figure 1).

**Figure 1: Impact of climate on poverty reduction pathways**



The impacts that climate change will have on development can broadly be classified as direct and indirect (Figure 2). Direct impacts can be seen in the areas of food security, water and health. In these sectors changes in climate have direct influences on rainfall and temperature that affect factors such as crops and water availability. These will in turn create other, indirect, changes: social issues, such as gender equality, education and human rights, are indirectly affected if drought, extreme weather and shorter growing seasons affect livelihoods.

**Figure 2: The Billiard Ball model**



## Impacts of climate change on goal areas

Due to different metrics, levels of confidence and scenarios used to drive analysis, it is not yet possible to quantify precisely the magnitude of the impact of climate change on each of the indicative goal areas, or to produce cumulative figures of the number of people affected.

Instead, what we can identify is that impact of climate change on these complex links, causalities and dependencies is likely to be magnified in certain locations, rather than act in isolation. **From individual to economy-wide scales, the direct impacts of climate change could exacerbate underlying and existing societal issues that further create or entrench poverty.** Starting with declining agricultural yields, water availability and changing disease patterns, for example, households and countries could face growth in unemployment, increasing gender gaps, and flaring of existing political tensions and conflicts. Such population upheaval would result in collapse of the education and health systems, exacerbate unemployment and discrimination issues, and make poverty reduction a much bigger task.

The full report contains a broader summary of the predicted future impacts of climate change on each goal area, and an annex containing extensive details of the

range of evidence available. Table 1 summarises some of this information and identifies the inter-linkages between the goal areas. We roughly categorise medium

term as 2030-2050 and long term as 2050-2100, and identify the global average climate change that each scenario implies as a tool for comparison.

**Table 1: Summary of evidence**

<b>FOOD SECURITY, NUTRITION &amp; AGRICULTURE</b>	<p><b>Medium-term impacts</b></p> <ul style="list-style-type: none"> <li>• Increase in people at risk of hunger by between 30 million and 200 million in vulnerable groups and countries, at 2° to 3°C warming (Stern, 2007).</li> <li>• Crop yields decrease by up to 30% in Central and South Asia at 1° to 2°C warming; yields from rain-dependent agriculture in Africa down by 50% before 2020, at 1°C warming (IPCC, 2007).</li> </ul> <p><b>Long-term impacts</b></p> <ul style="list-style-type: none"> <li>• Additional 250 million to 550 million people at risk of hunger, mostly in Africa and Western Asia, at 3°C warming (Stern, 2007).</li> <li>• Reduction of crop yields of more than 90% in sub-Saharan Africa, at 3°C warming (World Bank, 2013).</li> </ul> <p><b>Impacted by:</b> water. <b>Impacts on:</b> health, income poverty, peace, employment</p>	<b>ACCESS TO ENERGY, WATER &amp; SANITATION</b>	<p><b>Medium-term impacts</b></p> <ul style="list-style-type: none"> <li>• 1 billion to 4 billion people to experience growing water shortages in Africa, the Middle East, Southern Europe, and parts of South and Central America, at 2°C warming (Stern, 2007).</li> <li>• Increased drought risk in southern, central, and West Africa (World Bank, 2013); in sub-Saharan Africa, up to 171 million poor people will be exposed to drought hazards in 2030 (Shepherd et al, 2013)</li> </ul> <p><b>Long-term impacts</b></p> <ul style="list-style-type: none"> <li>• Proportion of land area experiencing extreme droughts will increase from 3% to 30% at 3° to 4°C warming (Stern, 2007).</li> <li>• 350 million to 600 million people exposed to increased water stress in Africa by 2050, at 1° to 4°C warming (IPCC, 2007).</li> </ul> <p><b>Impacts on:</b> food, health, peace, education</p>
<b>HEALTH</b>	<p><b>Medium-term impacts</b></p> <ul style="list-style-type: none"> <li>• 40 million to 60 million more people exposed to malaria in Africa, at 2°C warming (Stern, 2007).</li> <li>• Increase in diarrhoeal diseases in low-income regions by 5% to 11% by 2039, at 1.5°C warming (IPCC, 2007a).</li> </ul> <p><b>Long-term impacts</b></p> <ul style="list-style-type: none"> <li>• By the 2080s, 1.5 billion to 2 billion more people will be at risk of dengue, at 3°C warming (IPCC, 2007a).</li> <li>• Increase of malaria exposure of 70 million to 80 million people, at 3° to 4°C warming (Stern, 2007).</li> </ul> <p><b>Impacted by:</b> food, water. <b>Impacts on:</b> education, employment</p>	<b>REDUCING POVERTY</b>	<p><b>Medium-term impacts</b></p> <ul style="list-style-type: none"> <li>• By 2030, poverty increase of up to one third in Malawi, Uganda and Zambia alone (World Bank, 2013a).</li> </ul> <p><b>Long-term impacts</b></p> <ul style="list-style-type: none"> <li>• By 2100, in South Asia and sub-Saharan Africa, 145 million to 220 million additional people could fall below the \$2-a-day poverty line, at 3.9° to 4.3°C warming (Stern, 2007).</li> </ul> <p><b>Impacted by:</b> food. <b>Impacts on:</b> education, peace</p>
<b>EDUCATION</b>	<p><b>Medium-term impacts</b></p> <ul style="list-style-type: none"> <li>• None directly.</li> </ul> <p><b>Long-term impacts</b></p> <ul style="list-style-type: none"> <li>• Climate disasters threaten educational infrastructure.</li> </ul> <p><b>Impacted by:</b> health, gender. <b>Impacts on:</b> employment</p>	<b>GENDER EQUALITY</b>	<p><b>Medium-term impacts</b></p> <ul style="list-style-type: none"> <li>• None directly, but widespread recognition of additional vulnerability and exposure of women.</li> </ul> <p><b>Long-term impacts</b></p> <ul style="list-style-type: none"> <li>• None directly, but widespread recognition of additional vulnerability and exposure of women.</li> </ul> <p><b>Impacted by:</b> food, water, health. <b>Impacts on:</b> education, peace</p>
<b>PEACE AND SECURITY</b>	<p><b>Medium-term impacts</b></p> <ul style="list-style-type: none"> <li>• None directly, but climate disasters can aggravate conflict, and conflict reduces ability to act on climate.</li> </ul> <p><b>Long-term impacts</b></p> <ul style="list-style-type: none"> <li>• None directly, but climate disasters can aggravate conflict, and conflict reduces ability to act on climate.</li> </ul> <p><b>Impacted by:</b> food, water, income poverty</p>	<b>SUSTAINABLE JOBS AND ACCESS TO PROSPERITY</b>	<p><b>Medium-term impacts</b></p> <ul style="list-style-type: none"> <li>• None directly.</li> </ul> <p><b>Long-term impacts</b></p> <ul style="list-style-type: none"> <li>• Climate disasters threaten educational infrastructure.</li> </ul> <p><b>Impacted by:</b> food. <b>Impacts on:</b> income poverty</p>

# Conclusions

The evidence reviewed in the report demonstrates the complexity, inter-connectedness and scale of the expected impacts of climate change on poverty and implications for poverty reduction efforts. For some issues, specifically food, agriculture, water and health, there is evidence from multiple sources of the direct negative impacts of projected climate change on poverty and development. While the evidence is weaker in other areas, specifically those only indirectly affected by climate change, overall **the evidence strongly suggests that climate change will make poverty reduction and development increasingly difficult to achieve.**

How much climate change will adversely affect the poor is partly a question of mitigation success. But that it will affect the poor is inevitable. This creates a need to adapt to climate change, and ensure that resilience to more frequent extreme disasters is built. In spite of this, there seems to be a considerable gap between what we know is required and the concrete proposals as to how to incorporate climate change into a post-2015 agenda.

With an eighteen-month period ahead in which poverty, climate change, and their inter-linkages will be explored in depth at high political levels, our key recommendations are:

## 1. In 2015 we must start a journey that credibly leads to successful climate action by 2030

The 2015 agreements need to be a foundation for raising ambition over time, in both climate action and poverty reduction. Even if enormous achievements are made in tackling poverty in the coming decades, climate change could reverse many of these gains. The UNFCCC has to succeed with a global agreement and good action is crucial from 2015 onwards, because it is

cumulative global emissions which are the key to preventing climate change beyond 2°C warming.

## 2. The achievement of any set of SDGs is dependent on the ability to adapt to climate change

The need for adaptation is driven home by the knowledge that we are already likely committed to at least a 1.5°C rise in global average temperatures by the end of the century, except under the most ambitious climate mitigation scenarios (IPCC, 2013).

Adaptation in a wide range of sectors and areas will be simultaneously needed otherwise massive setbacks in development and poverty reduction will occur. One of the implications of this exercise for policy is that conventional development policy will not necessarily lead to sustainable adaptation to climate change.

## 3. Climate action and adaptation can be incorporated into the post-2015 agenda in many ways, but the final result must add up to coordinated and sufficient action

Experience shows that development cannot ignore risks such as changes, shocks and stresses. But it also demonstrates that it cannot be taken for granted that these issues will automatically be considered in the post-2015 process, even if evidence shows that development can be more effective by taking climate change into account. Whatever the final goal areas, some of them will see direct impacts from climate change. The post-2015 framework, at the very least, has a role to play in ensuring progress towards these targets is not hindered by climate change and therefore it must guide global efforts on climate change and signal the international commitment to transition to a sustainable development pathway.

Various approaches to this integration have been explored, with a recommendation combining a stand-alone climate change goal with 'mainstreaming' climate across relevant goal areas (Fischler et al, 2014).

## References

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