Briefing

Climate change, governance

Keywords:
Climate change, Sustainable Development Goals (SDGs), Least Developed Countries (LDCs), IPCC

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ICCCAD
International Centre for Climate Change and Development at Independent University, Bangladesh in partnership with BCAS and IIED

Issue date
May 2015

Policy pointers

As climate change could undermine LDCs' ability to achieve all SDGs, resilience must be mainstreamed into achievement of SDGs.

For LDCs to achieve SDGs, the new climate agreement must limit global warming below 2°C and provide adequate additional financing and compensation.

LDCs should not have to prioritise payment of debts over financing achievement of the SDGs until developed countries have met ODA commitments and paid 'climate debts'.

Adaptation finance should be targeted to countries whose ability to meet the SDGs will be most affected by climate change.

Impact of climate change on Least Developed Countries: are the SDGs possible?

The Sustainable Development Goals (SDGs) will define the priorities of the UN's development agenda beyond 2015. But the reality of climate change impacts will render these aspirational goals almost impossibly challenging for the Least Developed Countries (LDCs) unless the current level of ambition in development and climate action is urgently increased. This briefing summarises our analysis of the projected impacts of climate change on the ability of the LDCs to achieve each SDG, based on evidence primarily from the Fifth Assessment Report (AR5) of the UN's Intergovernmental Panel on Climate Change. We go on to recommend policy pointers for the LDCs and their partners for the upcoming negotiations on the post-2015 agenda, financing for development, and a new climate change agreement.

The LDCs are facing the sharp end of climate change (Table 1). This briefing breaks down how climate change will impact — directly or indirectly — their ability to achieve each goal[1] proposed by the Open Working Group on SDGs.[2]

SDG-1. Poverty

Climate change and climate variability worsen existing poverty, exacerbate inequalities, and trigger both new vulnerabilities and some opportunities. There is **robust evidence** that these hazards act as a threat multiplier for poor people,[3] meaning climate change represents a huge additional barrier to poverty eradication in LDCs (Target 1.1).

Climate change will affect those most in need of social protection, making providing protection (Target 1.3) harder. Food-related impacts indirectly affect poverty:[4] under a low crop productivity scenario, countries like Bangladesh could experience a 15 per cent net increase in poverty by 2030.[3] Land access (Target 1.4) is threatened as rising sea levels endanger the very existence of some atoll nations. Target 1.a aims to mobilise resources to end poverty; but allocation of official development assistance (ODA) to adaptation could reduce overall available funds for development.[3]

SDG-2. Hunger and food security[5]

All dimensions of food security — availability, access, utilisation, and stability — are vulnerable to climate change. Climate change may lead to 170 million more undernourished people in 2080.[3]

Crops already near their maximum heat tolerance[6] are particularly vulnerable. By 2080, major decreases in land productivity are expected in sub-Saharan Africa (14–27 per cent) and Southeast Asia (18–32 per cent).[3] Losses to genetic diversity (Target 2.5) are also projected.

SDG-3. Health and wellbeing

In Africa, the IPCC states that children and pregnant women are particularly vulnerable to climate-related health risks. There is **medium confidence** about the increasing risk of water-borne diseases (Target 3.3) and water pollution (Target 3.9). Extreme events can also affect mental health (Target 3.4).

Climate change will significantly hamper LDCs' ability to achieve SDGs

Extreme events and climate-sensitive diseases pose occupational risks to health workers (Target 3.c). Health costs could rise. In Burundi, Malawi, Rwanda and Sudan, in-patient treatment costs per 1,000 people could increase by over 20 per cent by 2100.[3]

SDG-4. Education

Education facilities could be vulnerable to climate-related disasters (Target 4.a). In Ethiopia and Malawi, droughts and floods have increased pressure to take children out of school.[3]

SDG-5. Gender equality

There are significant gender dimensions to climate change. Statistical evidence from 141 countries from 1981–2002 shows disasters kill women at an earlier age than men.[3]

Migration impacts can be gender-specific: in Niger, male migration is increasing, leaving women with no labour support;[7] in Ethiopia, girls often spend more time fetching water during droughts.[8]

Climate change also threatens equal access to resources (Target 5.a). In Uganda, men were found to be able to amass land after floods, while droughts reduced women's non-land assets.[3]

SDG-6. Water and sanitation

Many climate impacts are water-related, including increased floods and droughts. Sanitation (Target 6.2) and water quality (Target 6.6) are both threatened as storm runoff adds to sewage. Adapting water infrastructure may add 10–20 per cent to the costs to developing countries of meeting water-related Millennium Development Goals.[3]

Water-related ecosystems (Target 6.6), including mountains and forests, are vulnerable. In future decades, glacier shrinkage will threaten water supplies.

SDG-7. Sustainable energy for all[5]

Renewable energy could provide energy access for billions of people and cut emissions.[3] But if energy access (Target 7.1) is met through fossil fuels, this could exacerbate climate change and cause 'maladaptation'.[9] As LDCs are particularly vulnerable to climate impacts, increased fossil fuel use could particularly affect them. The IPCC recommends a 'fundamental transformation' of the energy system over the critical next 15 years.[10] Furthermore, hydropower and bioenergy are both vulnerable to climate-induced changes in water availability.

SDG-8. Growth and employment[5]

Target 8.1 aims at sustaining GDP growth in LDCs above seven per cent per year. However, climate-related hazards impact GDP.

In Vanuatu, losses due to storms between 1998 and 2009 were estimated at 27.1 per cent of GDP.[3] The IPCC cites **high confidence** that coral reef degradation will negatively impact island communities and livelihoods, including tourism. In Ethiopia, hydrological variability is projected to decrease GDP growth by up to 38 per cent. In Tanzania, estimated costs of treating climate-related cholera cases in 2030 are 0.32–1.4 per cent of GDP.

Dehydration and heat exhaustion undermine people's ability to carry out physical work – threatening safe working environments (Target 8.8). By 2100, climate change may reduce labour productivity by 11–27 per cent in the tropics, which could reduce economic output in affected sectors by 8–22 per cent.[3]

SDG-9. Infrastructure[5]

Climate change can impact on infrastructure, including energy, water, transport and health. The IPCC provides **robust evidence** about impacts on water supply infrastructure, and **high agreement** about negative impacts on transport infrastructure. Cotonou, Benin, is just one city where property, infrastructure and water sources will be negatively affected.[7] Without sustainable infrastructure policies, there is also a risk of 'locking-in' high-carbon infrastructure.[10]

SDG-10. Inequality

The IPCC highlights **robust evidence** that the socially and economically disadvantaged are disproportionally affected by climate impacts, because they often have the weakest buffer to climate hazards. This may jeopardise efforts to tackle inequality.

Efforts to promote safe migration (Target 10.7) could be affected. The IPCC cites **medium evidence** about impacts on forms of migration that compromise human security. Events like the 1980s drought in Mali[7] previously led to significant displacement.

SDG-11. Cities and human settlements

By 2030, over a third of the world's urban population may be concentrated in urban centres in LDCs.[7] The IPCC highlights **very high confidence** that urban climate change-related risks are increasing. Extreme events damage housing and particularly affect informal structures, threatening safe housing (Target 11.1). In Burundi, floods and mudslides have led to huge urban displacement.[7]

Floods and storms can destroy cultural and natural heritage (Target 11.4) with intangible value.[11] Sea-level rise has already been blamed for destroying spiritual sites in Pacific islands.[12] Planning towards disaster resilience, in line with the Sendai Framework (Target 11.b), will be more difficult with increased frequency and intensity of disasters.

SDG-12. Sustainable consumption and production

Rising temperatures may threaten efforts to reduce food losses, including post-harvest losses (Target 12.3), as changes in temperature can result in geographical shifts of pests and diseases.[3]

SDG-13. Climate change

Target 13.1 aims to strengthen resilience to climate-related hazards. However, limits to adaptation include lack of resources, information, and physiological limits. In many small islands, coral reefs provide food and livelihood services. Preserving more than ten per cent of reefs worldwide would require limiting warming to below 1.5±1.3°C.[3]

Some authors suggest meeting the SDGs will require additional investments of US$2–3 trillion.[13] As adaptation is far more difficult under high-emission scenarios, these costs would increase. In Africa, adaptation costs by 2050 could reach US$35 billion/year in a 2°C scenario (one per cent of African GDP by 2100) and US$50 billion/year in a 3.5–4°C scenario (seven per cent of African GDP by 2100).[14] The 'adaptation gap' is really part of a broader development gap, and delaying climate action will increase these deficits.[15]

SDG-14. Marine resources

Marine species composition is changing as the ocean warms.[3] Nineteen of the 33 countries with fisheries classified as highly vulnerable are LDCs; and Bangladesh, Cambodia, DRC, Madagascar, Sierra Leone, Tanzania and Uganda are identified as highly dependent on fisheries.[7] In East Africa, warming has reduced Lake Tanganyika's primary productivity, with fish yields decreasing by an estimated 30 per cent.[3]

Box 1. Key impacts of climate change faced by LDC regions and groups

Africa: uncertain rainfall change; shifting ecosystem ranges; increased stress on water availability; increased vulnerability of agricultural systems; multiplied health vulnerabilities.

Asia: water scarcity; higher temperatures causing lower rice yields; potential decrease in marine biodiversity; stresses caused by rapid urbanisation compounded; extreme climate events increasingly affecting human health, security, livelihoods, and poverty.

Small Islands: sea-level rise; degradation of fresh groundwater by sea water; degradation of coral reef ecosystems, affecting island communities and livelihoods.

CO_2 uptake is increasing the ocean's acidity, threatening shellfish by reducing their ability to form shells. Warming can also cause oxygen levels to fall and, in extreme cases, 'dead zones' may form. The IPCC argues reducing CO_2 is the most effective and least risky method to tackle acidification (Target 14.3). Economic benefits to LDCs from marine resources (Target 14.7) are threatened — as by 2100, global costs of coral reef loss are estimated at US$870 billion/year under the rapid growth scenario.[3]

SDG-15. Ecosystems and biodiversity

There is **high confidence** that climate change exacerbates other impacts on biodiversity. Tree species are vulnerable to drought- and fire-induced mortality during dry periods. River deltas and wetlands are vulnerable to rising sea levels, while glacier melt may affect mountainous regions.

Efforts to halt biodiversity loss (Target 15.5) are threatened. An estimated 20–30 per cent of assessed plant and animal species are at increased risk of extinction with 2–3°C warming.[16]

SDG-16. Peace and justice

The IPCC cites **medium evidence** that some risk factors for increased violence within states are climate sensitive. Heatwaves are associated with increasing violence, and transboundary climate impacts, including on shared water resources, can increase state rivalry.

SDG-17. Means of implementation[5]

Climate change will increase the financial resources and capacity building required for LDCs to achieve the SDGs, in a context of increasing competition for such resources. In small islands, placing long-term climate adaptation needs above presently critical development needs could inadvertently reduce resilience.[3]

The IPCC cites **medium agreement** that climate change will affect trade patterns, given its potential impacts on agricultural prices. Under the mid-range scenario, an increase in imports into developing countries in South Asia and sub-Saharan Africa is projected,[3] potentially undermining Target 17.11, which aims at doubling LDCs' share of exports.

In summary

Climate change will **significantly hamper** LDCs' ability to achieve the SDGs on poverty, hunger, health, water, growth, infrastructure, cities, marine resources and ecosystems. It may also **decrease** LDCs' ability to meet goals on education, gender, energy, inequality, sustainable consumption and production, peace, and implementation. And extreme climate change will make combatting climate change itself more difficult. Climate impacts are also very likely to increase the cost of meeting all SDGs in LDCs, especially under high-emission scenarios.

Climate change will undermine LDCs' ability to achieve the SDGs most critical to their own development strategy:[17] building productive capacity, adding value in natural resource sectors and achieving sustainable structural transformation. Climate change is felt through the interaction of biophysical effects with social and institutional factors: the LDCs' starting point of high poverty levels and weak institutional capacity potentially moves the already huge challenge of the SDGs beyond their reach.

The way forward

When the 'aspirational' SDGs are held up to the realities of climate impacts, it is clear that current levels of ambition in climate and development action render them mere fantasy. If the LDCs are to have a chance of achieving the SDGs, governments must ramp up their ambitions for the agreements on financing for development (Addis Ababa, July), the post-2015 agenda (New York, September) and climate change (COP-21, Paris, December), agreeing that:

- Climate change must be integrated into the plans of LDCs and development partners for achieving SDGs and assessments of financing requirements.
- COP-21 must result in an effective agreement limiting warming to below 2°C.
- Developed countries must meet their commitments to provide at least 0.7 per cent of Gross National Income (GNI) as ODA, and at least 0.15–0.20 per cent of GNI in ODA to LDCs by 2020,[18] and provide new and additional climate finance (which should mean above the 0.7 per cent).
- Developed countries should allocate 50 per cent of their ODA to LDCs and allocate ODA on the basis of countries' needs to meet the SDGs (at Addis).
- LDCs must not be forced to prioritise payment of debts over financing their achievement of the SDGs until developed countries have met their ODA commitments and paid their additional 'climate debts', including compensation for loss and damage beyond adaptation limits.
- Developed countries should provide 50 per cent of the Green Climate Fund adaptation allocation for vulnerable countries including LDCs.[19] Adaptation finance should be targeted towards countries whose ability to meet SDGs will be most hampered by climate change and deployed synergistically with other development, humanitarian and environmental finance in alignment with country needs and priorities.

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Knowledge Products

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This briefing contributes to the work of the LDC Independent Expert Group on the post-2015 development agenda.

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This research was funded by the Netherlands Ministry of Foreign Affairs; however the views expressed do not necessarily reflect the views of the Government of the Netherlands.

Notes

[1] Evidence is from IPCC-AR5 unless otherwise stated. There was not space in this brief to discuss the co-benefits of climate action for SDGs. / [2] UN. 2014. Report of the Open Working Group of the General Assembly on SDGs. See: http://undocs.org/A/68/970 / [3] IPCC. 2014. Working Group II Contribution to the Intergovernmental Panel on Climate Change, Fifth Assessment Report, 2013. See: http://ipcc.ch / [4] Gutierrez, M, McFarland, W, Fonua, L. 2014. Zero Poverty: Think Again. Overseas Development Institute, London. / [5] Priority areas according to the LDCs' development strategy of achieving sustainable structural transformation through productive capacity building and value addition in natural resource sectors (note all of the SDGs represent priority areas for LDCs in accordance with the LDC criteria and Section IV of the Istanbul Programme of Action for the Least Developed Countries for the Decade 2011–2020, but progress in these highlighted areas should enable achievement of the others) / [6] UNFCCC.2002. Climate Change Information Sheet 10. See: http://unfccc.int / [7] Stott, C. 2014. An Examination of the Least Developed Countries in the IPCC AR5 WGII. IIED Issue Paper, London. / [8] Wright, H and Chandani, A. 2014. Gender in scaling up community-based adaptation to climate change. In: Schipper, E F F et al (eds). Community-Based Adaptation to Climate Change: Scaling it Up, Chap. 14. Routledge, London. / [9] Barnett, J and O'Neill, S. Maladaptation. Global Environmental Change 20 211–213. / [10] The right climate for development: Why the SDGs must act on climate change. CARE, CAFOD, Christian Aid, Greenpeace, Practical Action, WWF-UK, September 2014. / [11] UNFCCC. 2013. Non-economic losses in the context of the work programme on loss and damage. Technical Paper FCCC/TP/2013/2. See: http://unfccc.int / [12] UNFCCC. 2005. Climate change: Small island developing states. See: http://unfccc.int / [13] Sachs, J and Schmidt-Traub, G. 2014. http://unsdsn.org/wp-content/uploads/2015/04/150505-SDSN-Financing-Sustainable-Development-Paper.pdf / [14] Schaeffer, M et al. 2014. Africa's Adaptation Gap. See: www.unep.org / [15] UNEP Adaptation Gap Report 2014. See: www.unep.org / [16] IPCC. 2007. Fourth Assessment Report to the Intergovernmental Panel on Climate Change. / [17] This is the authors' interpretation of statements made by the LDCs, in particular the 2014 'Cotonou Agenda': http://unohrlls.org/custom-content/uploads/2014/08/Cotonou-Agenda-310714-9-43-PM-Final.pdf. / [18] Istanbul Programme of Action. See: http://unohrlls.org/UserFiles/File/IPoA.pdf / [19] GCF Fund. 2014. GCF-PA.02/14, 22 February 2014. See: http://gcfund.net