Nepal

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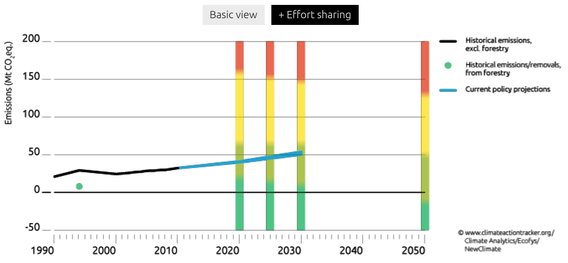

Note: Hover over the coloured bars for a pop-up with the fair emissions range per effort sharing category. More information here.

Assessment

Nepal's Nationally Determined Contribution (NDC), submitted in October 2016, is more ambitious than its Intended Nationally Determined Contribution (INDC) submitted earlier this year. While the INDC contained a list of ten targets, Nepal has added four more targets to its NDC. These targets include plans to increase renewable energy production which shows Nepal's intent to move to a low carbon development pathway. The NDC does not include any overall greenhouse gas (GHG) emission reduction targets. We could not quantify the overall impact of Nepal's targets on GHG emissions and therefore we could not rate the NDC. That said, the NDC contains ambitious targets, expected to result in emissions reductions compared to the current policy projections, which lie in the "sufficient" range.

Nepal's current policies are consistent with limiting warming to below 2°C without requiring other countries to make much deeper reductions and comparably greater effort. In 2017, we will assess whether this target is in line with the Paris Agreement's stronger 1.5°C warming limit.

Given that Nepal's NDC consists of many individual actions with different target years and that some actions lack detail and leave room for further specification, we were not able to quantify and rate the aggregate impact of Nepal's NDC on GHG emissions. We encourage Nepal to provide more clarity on its climate change targets in its next NDC.

As of 2010, Nepal's own emissions make up less than 0.1% of global emissions. With its current policies, Nepal's GHG emissions are expected to increase to between 50–53 MtCO_2e by 2030 (an increase of 55–66% compared to 2010 levels). Even with this increase, the country's per capita emissions would only grow from 1.2 tCO_2e/cap as of 2010 to 1.5–1.6 tCO_2e/cap by 2030, still far below the 2012 world average of 7.6 tCO_2e/cap (JRC, 2016).

Pledges and targets

Paris Agreement targets

Copenhagen pledge	
2020 target	None
Paris Agreement target	
Ratified	Yes
2030 target	List of 14 targets No overall GHG reduction target
Long term goal(s)	
Long-term goal(s)	None

Nepal submitted its NDC on 5 October, 2016. In its NDC, Nepal published plans to build resilience to climate change impacts as well as to reduce GHG emissions (Government of Nepal, 2016a). Nepal has given central importance to climate change adaptation in its development plans and policies. It plans to rely mostly on technical and financial support from development partners to implement these plans (Government of Nepal, 2016a). Although Nepal has shown its intent to contribute to reduce GHG emissions, it has not outlined any clear overall GHG reduction target or commitment in its NDC. Under its Low Carbon Economic Development Strategy, it aims to catalyse concrete actions that would support low carbon economic development. This strategy would focus on mitigating emissions in the energy, agriculture, industry, transport, waste, residential and commercial sectors (Government of Nepal, 2016a). Some of the main elements with regards to emission mitigation in its NDC (Government of Nepal, 2016a) are:

- To achieve 80% electrification through renewable energy resources by 2050
- To reduce dependency on fossil fuels by 50%
- To expand its energy mix focusing on renewables by 20% by 2020
- To increase the share of electric vehicles up to 20% from 2010 level by 2020
- To decrease its dependency on fossils in transport sector to 50% by 2050
- To maintain 40% of the total area of the country under forest cover
- To reduce about 14 million tonnes of CO_2e by 2020 with a sub-national project on REDD+
- To deploy renewable systems under the National Rural Renewable Energy Program (NRREP)
- To build an electrical (hydro-powered) rail network by 2040

The measures reflect Nepal's objective to steer itself on a low carbon development pathway, but there are many individual actions with different target years, and some actions lack detail and leave room for further specification. In the NDC, the National Rural and Renewable Energy Program (NRREP) is mentioned. However, many of the details under NRREP are missing, such as the target year, the characteristics of the energy systems to be installed, and whether the target is additional or cumulative. Therefore, it was not possible to quantify the aggregate effect of these targets. However, Nepal does have a long-term vision to decarbonise its electricity sector and reduce its dependency on fossil fuels.

Fair share

Given the lack of an overall emissions reduction target and the lack of specificity concerning some of the fourteen targets put forward in Nepal's NDC, we were not able to quantify nor rate Nepal's NDC.

Nepal's projected emission levels in 2020, 2025 and 2030 are in the "sufficient" range. This means Nepal's current policies are consistent with limiting warming to below 2°C without requiring other countries to make much deeper reductions and comparably greater effort. We will assess in 2017 whether this target is in line with the Paris Agreement's stronger 1.5°C warming limit. We determined the upper end of the "medium" range for Nepal using effort-sharing approaches based on equity principles. To be in line with approaches that focus on responsibility and capability, Nepal would need to reduce its emissions from its current policy projected levels.

Current policy projections

Nepal's contribution to global GHG emissions is negligible at only 32 MtCO_2e in 2010, less than 0.1% of global emissions. From 1990–2010 Nepal's GHG emissions excluding LULUCF have increased by 2.2% per year on average. With current policies, this emissions growth is projected to slightly increase to 2.2–2.5% per year, on average, in the period 2010–2030, reaching 50–53 MtCO_2e in 2030. With this slightly increased growth, per capita emissions will still be very low at around 1.5–1.6 tCO_2e per capita by 2030.

The majority of emissions in Nepal are non-CO_2 GHG emissions from the agriculture sector. Methane and nitrous oxide contributed 67% to total GHG emissions in 2010, arising from rice cultivation, enteric fermentation and agricultural soils (Government of Nepal, 2014). Energy-related CO_2 emissions contributed only 28% to Nepal's total emissions in 2010, but this share is projected to increase to between 36–40% by 2030. As of 2012, about 76% of the population has access to electricity (World Bank, 2016) and this share is expected to increase to 100% by 2030 (Shrestha & Shakya, 2012).

Nepal is a highly vulnerable, least developed country. Particular vulnerabilities include rapidly melting glaciers, resulting in the danger of glacial lake outbursts and degradation of agricultural land, on which two thirds of the population base their livelihoods (Ministry of Environment, 2011). Therefore, Nepal has focused its climate change action on adaptation. Nepal has developed nine National Adaptation Programmes of Action (NAPAs). These NAPAs focus mainly on the agricultural sector, water resources and disaster risk management (UNFCCC, 2013). For Nepal to be able to implement these NAPAs, replenishment of the Least Developed Countries Fund (LDCF) is needed (UNFCCC, 2014).

In early 2010, Nepal established the Climate Change Management division in the Ministry of Environment. The main policy related to emissions mitigation is the Climate Change Policy 2011 the central goal of which is 'to improve livelihoods by mitigating and adapting to the adverse effects of climate change, adopting a low-carbon emissions socio-economic development path and supporting and collaborating in the spirits of country's commitments to national and international agreements related to climate change' [sic] (Government of Nepal, 2011). Under the twenty-year hydropower development plan 2010–2030, the Government of Nepal has a target of installing 25 GW of hydro power by 2030.

Nepal has a high deforestation rate due to drivers such as illegal harvesting, overgrazing, forest fires, and a high dependency on forests. There is a strong interest in Reducing Emissions from Deforestation and Forest Degradation (REDD+) and a number or REDD+ readiness projects are being implemented. However, some authors have pointed out that the implementation of REDD+ projects is challenging in Nepal, because of weak governance and high opportunity costs for avoided agricultural expansion (Paudel et al., 2013).

Assumptions

Historical emissions

The historical dataset is based on Nepal's Second National Communication (Government of Nepal, 2015). The 1994 LUCF value is taken from UNFCCC (2011).

Current policy projections

The current policy scenario is based on projections from Nepal's Second National Communication for energy, industry, agriculture and waste sectors (Government of Nepal, 2014). The National Communication sketches five scenarios (BAU, Medium growth, High growth, Medium growth with mitigation and High growth with mitigation) of which two (BAU and Medium growth) have been used to form a range. The High growth scenario was disregarded since it assumes a GDP growth rate of 10% per annum which is not in line with IMF projections of Nepal's GDP (IMF, 2016), and seems unrealistic given an average GDP growth rate of ~4% in the last 10 years (2006–2015). The National Communication's BAU scenario assumes 4.63% GDP growth per year, the medium growth scenario 5% per year.

Sources

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