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GCHA Submission: Consultation on the Draft NDC of Nepal, Baishakh 2082 / April 2025

The Global Climate and Health Alliance (GCHA) is a network of 200+ organisations spanning every continent. This submission has been prepared with guidance from GCHA's staff representative from Nepal, informed by data provided by the Lancet Countdown on Health and Climate Change from its 2024 report (included below, and also appended to this submission). It focuses on how human health can be optimised through Nepal's climate action.

Climate change is already undermining human health in Nepal. The IPCC makes it clear that climate induced hazards will worsen with every incremental increase in temperature. In 2024, global average temperature rise exceeded 1.5°C for the first time. It is vital to adapt to these growing risks, and also for all countries (with greatest reductions by highest emitters) to reduce emissions to ensure that the limits of adaptation in health and health-determining sectors such as cross sectors including energy, agriculture, transport, water and sanitation, and urban planning are not exceeded. Meanwhile, action on climate change offers significant public health opportunities, reducing future health hazards through emissions reductions, and adapting to ensure that systems can protect populations from health harming impacts. By taking action across sectors Nepal has an opportunity to improve air quality, access to nutritious diets, safe water, active travel systems which promote physical activity, and protective living environments, thus promoting good health.

Recognition of health linkages and actions to address them must be embedded in climate policymaking to support healthy, resilient and economically productive populations, while also maximising returns on investment due to health-related savings from the co-benefits described above.

We have arranged our comments according to seven elements that we consider to be relevant for effectively embedding health considerations in climate planning, as follows. For each element, we provide a summary of how this is already addressed in the NDC and of current relevant evidence on the topic, followed by recommendations of how the NDC could be further strengthened in various sections of the NDC. Recognising that this submission touches on many varied issues, **we wish to particularly highlight the recommendations on black carbon in section 1 and air pollution in section 5.**

1. Emissions reductions target
2. Integrated governance
3. Health losses and damages
4. Action in the healthcare sector
5. Actions in health-determining sectors
6. Economic and financial considerations
7. Responding to the needs and priorities of most affected group

1. Emissions reductions target

Emissions reductions in line with each country's fair share to limit warming to 1.5°C are vital to protect populations against health hazards of climate change and avoid exceeding the limits of adaptation. In the draft NDC 3.0, Nepal sets out the target to reduce net GHG emissions and removals by 8,299 GgCO2eq in 2030 and 15,809 GgCO2eq in 2035 compared to the Business-As-Usual Scenario. We note that for the second NDC, Climate Action Tracker rated the unconditional NDC target against fair share and being 1.5°C compatible, for which we congratulate Nepal. However the conditional NDC target against modelled domestic pathways was ranked as critically insufficient, meaning that if all countries were to follow Nepal's approach, warming would exceed 4°C. Such levels of warming would be catastrophic for human health. Indeed, the 2019 Hindu Kush Himalaya Assessment notes that even if global warming is kept to 1.5 °C, warming in the Hindu Kush Himalaya region will likely be at least 0.3°C higher, and in the northwest Himalaya and Karakoram at least 0.7 °C higher, with adverse impacts on livelihoods and wellbeing.

Reducing short lived climate pollutants (SLCPs), including methane (a precursor of tropospheric ozone) and health harming black carbon, tropospheric ozone, and HFCs, provides near-term benefit for emissions reductions and for human health. Black carbon is an especially relevant consideration for Nepal. It is incomplete combustion, for example of wood, waste and fossil fuels. Black carbon drives warming as it is very effective at absorbing light. While it lasts only days to weeks in the atmosphere but has significant direct and indirect impacts on the climate, snow and ice (a key consideration for mountain regions), agriculture, and human health (including as a component of PM2.5 air pollution).

Recommendations

- **Section II:** Ensure conditional elements of the target set out in the draft NDC are compatible with 1.5°C, underscoring the need for increased international climate finance.
- **Section II:** We suggest adding an action related to future planning, monitoring and/or a target for the reduction of black carbon, in order to maximise short term gains both for climate mitigation and human health.

2. Integrated governance

Since climate outcomes and public health are intersectional in nature and defined by whole of economic approaches, integrated governance is essential to ensure coordinated and holistic approaches. We strongly support the consideration in the draft NDC 3.0 that mitigation targets are designed to result in numerous co-benefits including energy security, reduced indoor and outdoor air pollution, healthy people, increase in quality of life and income, social equity, ecosystem services and climate resilience, all of which support good public health; as well as the recognition of occupational health safety of workers in just transitions. We commend the Government of Nepal for the coordination thus far in developing the NDC with inputs from across line ministries.

Recommendations

- **Section I:** Especially if other recommendations in this submission can be considered, we propose that health is could also be specifically recognised alongside poverty reduction as a co-benefit of implementing the NDC.
- **Section VI:** In addition to the existing consideration of health as a cross-cutting co-benefit of mitigation, we propose that optimising health gains is also a consideration of adaptation across sectors.
- **Section VI:** We also recommend that health equity is considered as a core pillar of just transitions, including and beyond the occupational safety of workers. Health of communities can be improved through improved access to reliable, safe, clean and affordable renewable energy (including local renewable energy grids) in preference to fossil fuels and biomass combustion for electricity generation and household energy use.

- **Section VI:** With regards to implementation and reporting across relevant line Ministries, we respectfully propose that the Ministry of Health could report both on actions taken within the healthcare sector, and also the health gains of implementation across other sectors (for example, through improvements in air quality).
- **Section VI:** Recognising that Nepal has transitioned to a Federal system in the last decade, we note the importance of good practice sharing with regards to localising the implementation of the NDC to local governments, including but not limited to health related actions.

3. Health losses and damages

We commend the inclusion of a loss and damage section in the draft NDC of Nepal. Health impacts of climate change in Nepal are recognised in the draft NDC among other economic and non-economic losses and damages impacts. We strongly support the aim of Nepal to conduct existing and projected research on economic and non-economic losses and damages arising from climate change, including physical and psychological health impacts.

Recommendations:

- **Section I:** Where impacts including floods, droughts, landslides, glacial lake outburst floods, fires and heatwaves are referred to, the implications for health losses and damages should be referred to.
- **Section IV:** We propose that additional information is included on specific climate related health impacts in Nepal, and if possible that these are quantified. Specific health impacts identified in the 2022 national vulnerability and adaptation assessment of climate sensitive diseases and health risks should be mentioned, helping to build the case for actions identified in the NDC within the health sector and health-determining sectors. In addition, section 4 of a 2021 Assessment by IFRC on climate change impacts on health and livelihoods in Nepal lists and in some cases quantifies climate risks for a wide variety of health threats, while other sections of the report discuss important links between climate change, health and livelihoods. The Lancet Countdown on Health and Climate Change also notes the following information for Nepal:
    - *Health impacts of heat exposure:* As temperatures rise, populations in Nepal face growing risks of disease and mortality associated with heat exposure. Elderly populations, those with underlying chronic health conditions (including cardiovascular disease, heart disease, diabetes), and very young children are most at risk. The rising temperatures also pose a health threat of heat stress and heat stroke to those undertaking physical activity, including recreational or labour-related activities. In 2023, individuals were exposed to heat levels that posed a moderate or higher risk of heat stress if undertaking moderate physical activity (like running), for 4.3 hours each day on average. This represents a 68% increase to the average exposure to heat stress risk in the 1990s (indicator 1.1.2).
    - *Growing risk of transmission of infectious diseases:* The rising temperatures and changes in humidity and precipitation patterns caused by climate change are changing the likelihood of transmission of infectious diseases transmitted by vectors (like mosquitoes or ticks). Climatic conditions in Nepal have remained highly suitable for the transmission of dengue by Aedes aegypti mosquitoes, at a climate-defined transmission potential (R0) of 1.23. Conditions are however also becoming increasingly suitable for the transmission of dengue by Aedes albopictus mosquitoes, the transmission potential for which has increased by 109%, from 0.42 on average in 1951-1960, to 0.88 in 2014-2024 (indicator 1.3.1). As a result, Nepal is likely to see an increase in dengue incidence, demanding increased actions to protect local populations. Similar patterns for disease transmission are observed for Zika and chikungunya.
    - *Increased wildfire exposure:* Between 2003–2007 and 2019–2023, people in Nepal were exposed to wildfires much more frequently. On average each year, wildfire exposure increased by nearly 64%. The number of days with very high or extremely high wildfire risk also rose by about 15% during this time.

4. Action in the healthcare sector

Since a heavy burden of the human impacts of climate change falls in the healthcare sector, and since the healthcare sector contributes 4.1% of total national emissions in the case of Nepal), adaptation and mitigation actions should be specified in NDCs. We commend the inclusion of an adaptation action and time-specific targets for healthcare worker training and climate-sensitive disease surveillance, provincial vulnerability and adaptation assessments, and the updating of the health national adaptation plan. We also applaud the inclusion of time-specific targets for managing healthcare waste with non-burn technologies as part of mitigation efforts, electric vehicles and low carbon environmentally friendly WASH services for the healthcare sector, and low GHG alternatives for traditional anaesthetic gases and inhalers which will also improve air quality and related health outcomes.

Recommendations

- **Section III:** Including references to the existing 2024 Health National Adaptation Plan and 2022 national vulnerability and adaptation assessment could reinforce policy coherence. Comparison of the HNAP to the WHO Operational framework for building climate resilient and low carbon health systems, and the IFRC report on climate change impacts on health and livelihoods in Nepal could reveal additional adaptation measures worthy of consideration. In particular, we note that mental health impacts of climate change are under-addressed in many settings around the world.
- **Section III:** We propose including a baseline to enable demonstration of progress. For example, "the disease burden attributed to ambient and household air pollution will be reduced from XXX/100,000 in 2020 to 77/100,000 by 2030 and 60/100,000 by 2035." We also suggest including additional detail on what the rate of X/100,000 includes or refers to.
- **Section II:** Nepal is not a large greenhouse gas emitter, and care should be taken to ensure that mitigation measures in the healthcare sector are not to the detriment of quality of care, and the following points are raised with this in mind. If deemed appropriate, a commitment could be made to ensuring the energy efficiency of new healthcare infrastructure under section II.B. In addition to Solar Institutional Solar Photovoltaic System (ISPS) being installed in schools, investments in ISPS for health facilities could contribute to emissions reductions while also improving energy access during extreme weather events, thus improving climate resilience. Additional information can be found in the WHO Operational framework for building climate resilient and low carbon health systems.

5. Action in health-determining sectors

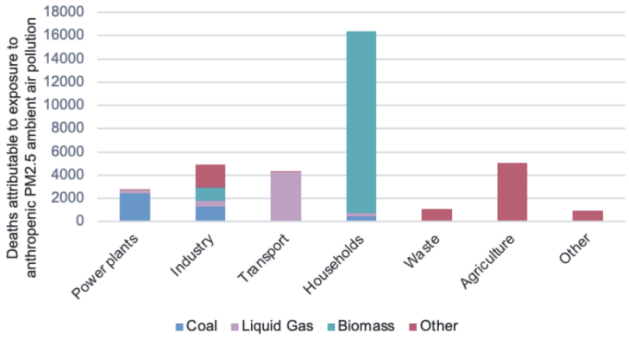
In order to ensure that health systems are not overwhelmed as a result of climate inaction, just transitions across sectors should consider how health gains can be maximised. We strongly support the targets in the draft NDC for renewable energy expansion and energy efficiency; electric vehicles; clean cooking and household energy; brick kilns; agricultural burning; and forest fire prevention together will reduce the health burden of ambient, household and occupational air pollution. The emphasis on water supply, drinking water and WASH will additionally help to protect populations from food insecurity, dehydration, and water-borne disease, Increasing greening in urban areas will protect residents from the urban heat island effect.

Recommendations

- **Additional section:** According to the Lancet Countdown, ambient air pollution from human activities was responsible for more than 35,000 deaths from particulate air pollution ($PM_{2.5}$) in Nepal in 2021. Of these deaths, 27% came from fossil fuel burning, with 12% from coal burning alone, and a staggering 47% from

biomass burning. The vast majority of these deaths can be prevented by a just transition to renewable energy sources that avoid the combustion of fossil fuels and biomass, while reducing greenhouse gas emissions (indicators 3.2.1 & 4.1.4). Media reports suggest the challenge is particularly severe in recent months. Given the shared opportunity to address climate change and human health, we propose including a dedicated section on air quality in the NDC which cuts across both mitigation and adaptation. This section should outline the extent of the health burden of air pollution, associated economic costs, and should bring together the actions taken on renewable energy and household energy, transport, brick kilns, agricultural burning and wildfire prevention. It should include actions to improve air quality monitoring, including black carbon.

- **Section II:** In addition to helping reduce climate change-related threats to people's health and wellbeing, interventions to reduce the use of dirty fuels would have major benefits to people's health. Replacing dirty fuels with clean renewable energy sources, as well as increasing energy efficiency, can significantly reduce exposure to air pollution, which increases the risk of asthma, respiratory infections, cardiovascular disease, cancer, dementia, and many other adverse health outcomes. If supported through adequate technology transfer, capacity building, and finance, the deployment of clean renewables can also help reduce energy poverty, providing clean fuel sources in remote locations. The Lancet Countdown notes that sectors with the highest potential to save lives from improved air quality are the transport sector and the household sector
    - *Transport sector:* Air pollution from the use of fossil fuels in the transport sector was responsible for 4,300 deaths in 2021, 12% of all air pollution-related deaths. These deaths could be prevented by transitioning to zero-emissions transport systems, including by promoting the use of zero-emission public transport, electric vehicles, and active travel. Active travel, in turn, can have major health benefits by increasing physical activity (indicator 3.2.1).
    - *Household sector:* Nepal has the opportunity to prevent each year over 16,000 deaths caused by exposure to household-derived outdoor air pollution, by promoting the transition to clean renewable energies in the household sector. In addition to this, interventions in the household sector can also help avoid thousands more deaths coming from exposure to air pollution inside people's homes (indicators 3.2.1).



Deaths attributable to exposure to anthropogenic $PM_{2.5}$ ambient air pollution in Nepal by sector and source of emissions in 2021

For measures in the transport sector, we propose consulting with populations to understand barriers to previous efforts to expand active transport, so that these can be overcome, and use of cycle lanes and other active transport measures are taken up. If cable transport is used, care must be taken to avoid land degradation. Fiscal incentives should be used to encourage uptake cleaner and more active transport modes. At the household level, we note that biogas is preferable to biomass and fossil fuel burning from both environmental and health perspectives, but that local renewable energy grids would yield greater improvements.

6. Economic and financial considerations

Budgetary allocations are key for implementation of health-promoting climate actions. In addition, quantifying the health costs of delayed action and harmful subsidies, and the returns on investment from climate action, can strengthen the investment case.

Recommendations:

- **Section III:** Include budget lines for each healthcare sector action (and indeed also for actions in other sectors in corresponding sections of the draft NDC in health and health determining sectors).
- **Section IV:** Include quantification of the costs of health losses and damages. The following information from the Lancet Countdown may be of use:
    - *Costs of heat-related mortality:* The costs of heat-related mortality in Nepal in 2023 totalled US$ 0.38 billion (indicator 4.1.2).
    - *Labour productivity loss due to heat exposure:* Beyond presenting a direct risk to health, exposure of workers to high temperatures also reduces labour productivity, as workers' capacity to do physical labour decreases, and they need to take more breaks. In the period between 2014 and 2023, heat exposure of local workers caused the loss of over 3.4 billion potential labour hours annually on average in Nepal - an 85% increase in the loss of potential labour hours due to heat exposure from the 1990s. This translates to an estimated US$2.8 billion in potential income lost annually due to heat exposure between 2014 and 2023, with the agricultural sector bearing 91.5% of the total impact (losing approximately US$2.6 billion) (indicators 1.1.3 & 4.1.3).
- **Section III or VI:** Include the information on cost savings through actions across sectors, and returns on investment. For example, according to the Lancet Countdown, the cost of national health impacts of air pollution totalled $3.5 billion dollars in 2021 (Indicator 4.1.4) - costs which could be avoided through mitigation actions to improve air quality. Available WHO tools on economic savings include CLIMAQ-H; the Health Economic Assessment Tool (HEAT) for walking and cycling; iSThAT: the Integrated Sustainable Transport and Health Assessment Tool; and the benefits of action to reduce household air pollution (BAR-HAP) tool. Notably, the government of Pakistan worked with WHO and PAHO to produce a detailed report on the benefits of raising ambition in Pakistan's NDC. It was determined that a high ambition scenario could generate health savings of US$ 10 650 million in 2030. This example from Pakistan may serve as a valuable regional best practice, offering insights that Nepal could consider adapting within its own context.

7. Responding to the needs and priorities of most affected groups

Ensuring responsiveness to the needs and priorities of these communities is essential to ensure that inequalities are not widened. Nepal already makes a strong case for ensuring vulnerable communities are engaged in the preparation and implementation of the NDC. The mention of the FPIC Implementation Guideline is especially notable.

Recommendations

- **Section III:** As part of the action on climate-sensitive disease surveillance, epidemiological surveillance data should be disaggregated and reported to reveal impacts on different vulnerable groups. We recommend that vulnerability and adaptation assessments are conducted to identify which groups which are especially vulnerable to particular health impacts (for example, women and children are most exposed to the the health harms of air pollution from unimproved cookstoves; people with disabilities are less mobile during disasters; outdoor, factory, and informal workers face more intense temperatures in heatwaves; older people and children are especially vulnerable to extreme heat) and that specific actions are outlined to protect them.