

Efficient Waste Management for achieving NDC targets

Context

- Being a member of Paris Agreement, NDCs are considered key to the implementation of the historic Paris Agreement, which set the target of limiting global warming to 1.5 to 2 degrees Celsius above pre-industrial levels.
- In December 2020, Nepal has submitted second NDC with the commitment to limit the Green House Gases (GHGs) emissions through the sector wise targets. The treatment of wastewater and fecal sludge is expected to reduce around 258 Gg CO₂ eq. compared to BAU, creating an enabling environment to public and private sector for the treatment of industrial and municipal waste including fecal sludge.
- The major GHGs produced from waste management include the biogenic carbon dioxide (CO₂) and non-methane volatile organic compounds (NMVOCs) as well as smaller amounts of nitrous oxide (N₂O), nitrogen oxides (NO_x) and carbon monoxide (CO).

Key Message

- The Nepal second Nationally Determined Contribution (NDC, 2020) has set specific targets for waste management sector of 258 Gg CO₂ eq. compared to Business As Usual creating an enabling environment to public and private sector for the treatment of industrial and municipal waste including fecal sludge.
- The second NDC (2020) lack an economy-wise greenhouse gas (GHG) emission reduction targets, thus, pose challenge to quantify emissions reduction contributions of all sectors.
- Differentiated roles of government institutions at local, provincial and national levels for implementing second NDC specific to Action Plan of Waste Management Sector is imperative for achieving the Zero emission.
- Improving the existing waste management practices (e.g., landfill gas recovery, improved landfill practices; and engineered wastewater management) is the key strategy to achieve the effective mitigation of GHG emissions.

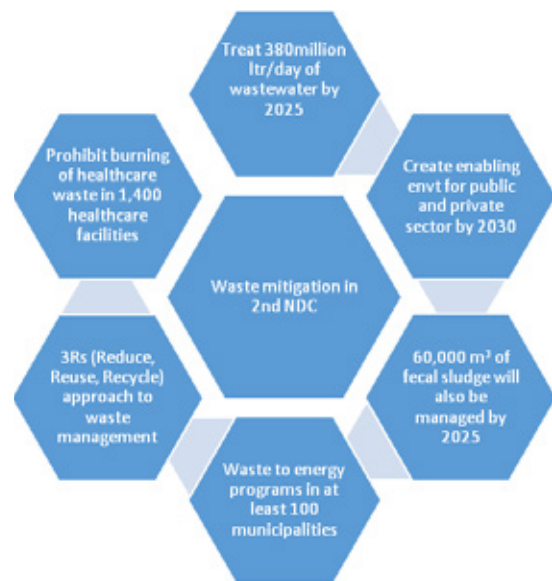
- A major goal of second NDC in waste management component is to contribute to achieve clean and healthy environment.
- Nepal is party to all major UN Conventions on Waste and Chemicals, namely, BRS (Basel, Rotterdam, Stockholm) Conventions, had adopted SAICM (Strategic Approaches of International Chemical Management)

as well as signatory to UN Minamata Convention on Mercury that emphasize the roles of nations to address safe management of both hazards and non-hazardous wastes through environment sound management (ESM) technology and practices like Best Available Technology (BAT) and Best Environment Practice (BEP).

Waste Mitigation components in second NDC

The second NDC (2020) acknowledges the importance of managing various wastes including wastewater and fecal sludge for achieving the net zero emission goal in the long-term. The key waste mitigation components are presented in the sketch.

Prominent experts have emphasized that waste management sector is critical not only to reduce emission reduction as stipulated in second NDC but equally for achieving the national goals of SDGs and Sendai Framework for Disaster Management. Major challenges lie on effective implementation of the NDC itself in which the track records remain dismal.



Mitigation components in waste sector
(Source: Second NDC, 2020)



Round table discussion with experts on waste sector

Gap analysis

- The second NDC (2020) lack an economy-wise greenhouse gas (GHG) emission reduction targets, thus, pose challenge to quantify emissions reduction contributions of all sectors.
- Lack of sector wise implementation plans is another prominent gap in the second NDC. It lacks the detail implementation plans along with the set of activities and approaches required to meet its set target.
- Although there are various targets of waste management including the waste segregation, recycling and waste to energy programs in at least 100 municipalities following the 3Rs (Reduce, Reuse, Recycle) approach, doubts lie on materializing the same while taking into consideration of waste management promoting to co-production of energy and organic fertilizer from solid waste, wastewater and fecal sludge.
- The issues of underestimate of the emission target based on the waste generation data taken from 1st NDC report that had used even much older data of 2004 yr. So the 2nd NCD emission reduction target data is not based on real increased waste scenario of 2020. It is good to either reflect this underestimate of waste and thus target or provide the good justification of the waste sector target emission set up will be necessary to reflect.

Way forward

Meeting the targets set on second NDC is imperative for fulfilling Nepal's international commitments. Rolling out the implementation plan while engaging with the multiple stakeholders among others the CSOs and

youths, representatives of climate vulnerable, landless and small holder's farmers and other marginalized communities is the first important step towards the right direction.

Policy Level

- Defining responsibility and accountability with timeline is critical for implementing second NDC that is closely interlinked with other national plans and sector wise targets such as SDG and Sendai Framework.
- In order to establish linkages of waste management with emission reduction targets, formulation of environmental standards for each type of waste management systems is recommended.
- Establishment of Waste Management and Monitoring Unit with mandate of GHGs emission reduction at provincial and local levels with sound technical and financial capacity is essential policy step for meaningful implementation of second NDC.

Local level

- Implement innovative and circular way of managing waste such as Zero Waste. Many European and Asian cities are already practicing zero waste city plan.
- Public awareness through demonstration and campaigns, involvement of the private sector, and civil organizations strengthening of local bodies will contribute to better management of waste.
- Wider public acceptance and participations is the best ways to solve the waste issue.
- Capacity building of the implementing agencies should be incorporated in action plan.
- Waste management to be linked with economy, income generation through PPP. If we can scale up the waste to energy, organic fertilizer and Material Recovery Facility (MRF) then only waste to value and contribution towards GHGs reduction can be achieved.

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Acknowledgement

Publication of this policy brief has been possible by the support received from various agencies and individuals. The authors would like to thank Technical Advisor Dr. Ngamindra Dahal for intellectual inputs. CEN acknowledges the policy inputs received from Mr. Ram Charitra Shah, Mr. Dinesh Raj Manandhar, Dr. Sanjay Nath Khanal, Mr. Pranaya Shrestha and Dr. Alka Sapkota.

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