Consultation Meeting on the Pre-Zero draft of new declaration on

3R and Circular Economy

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Secretary (GoN)

Outline of Presentation

- Introduction of Nepal
- Waste Management in Nepal
- Solid Waste Management Policies of Nepal
- Government Initiatives
- Major recycling industries in Nepal
- Achievements in Solid Waste Management
- Challenges
- Possible Collaboration
- Some Glimpse about Solid Waste Management in Nepal

Introduction of Nepal

Lat: $26^0 22'$ and $30^0 27'$ N
Lon: $80^0 04'$ and $88^0 12'$ E

Total Area: 147,181 Km^2
0.1% of global area

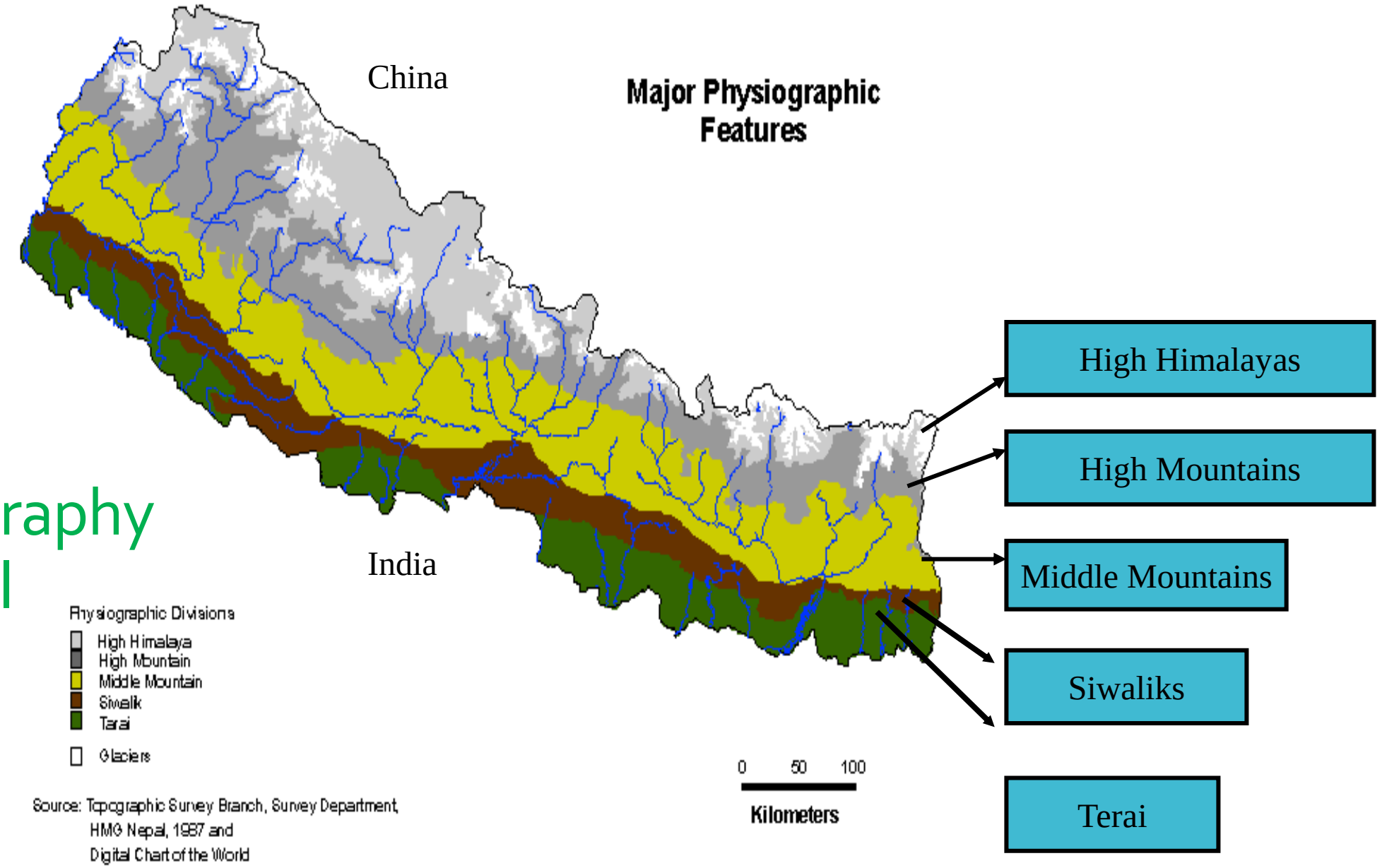
Rich in cultural, ecological and biological diversity

The lowlands are at sea level and the mountains of the Himalaya are the tallest in the world.

Birth place of lord buddha

Contains eight of the world highest peak

Physiography of Nepal



NEPAL: Weather & Climate

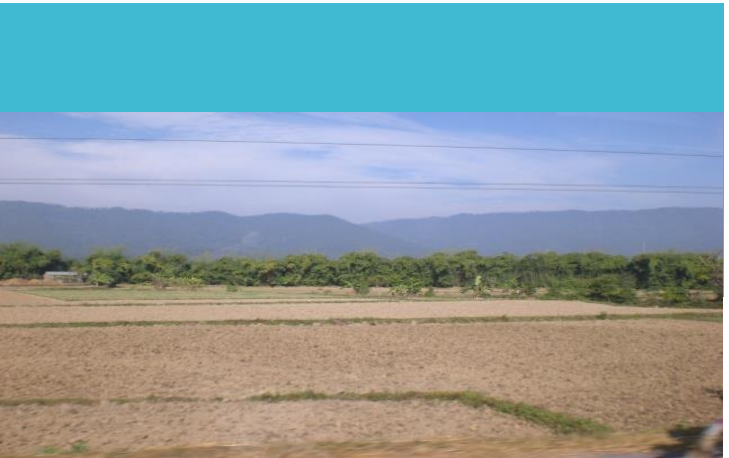
Climate: Alpine cold semi desert type to tropical humid type

Season: 4 distinct [Pre-monsoon (M-My), Monsoon (J-S), Post Monsoon (O-N) & Winter (D-F)]

Rainfall: 1600 mm (165 mm - 5500 mm) /yr

Precipitation: Varies from east to west

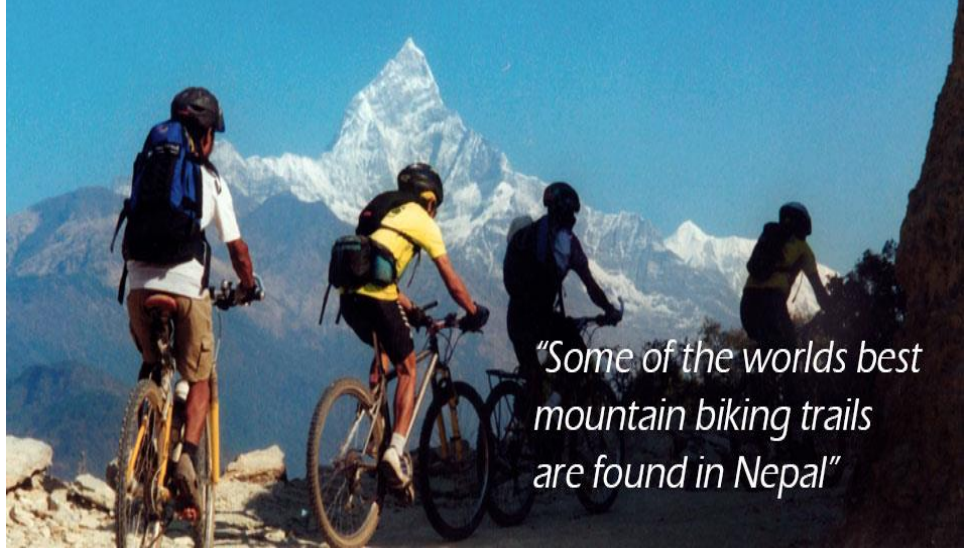
Annual temperature rise: 0.04-0.06^{0}C



Tourism Sites

Tourism Sites


www.explorehimalaya.com


"Some of the worlds best
mountain biking trails
are found in Nepal"

Waste Management in Nepal

- Refers to garbage or trash management.
- A System for handling all of the trash.
- Municipal waste collection, recycling programs, dumps and incinerator.
- Reduce > Reuse > Recycle

- The GoN is fully committed for the management of solid wastes in the country.
- MoUD and MoFE at Central level are responsible to formulate policy and coordination for implementation and environmental regulation
- Waste management is largely the responsibility of the local governments ie Municipalities (753)
- Urban area like Kathmandu, and a number of municipalities facing significant challenges in managing increasing volume of waste
- Waste management practices are less developed and open dumping is common in Rural municipalities

- Out of the total 753 local governments only 271(6 metropolitan city, 11 sub-metropolitan city and 254 municipalities) managing waste properly
- Only 30 (14.2%) municipalities recycle their waste
- The recycling of waste was higher among metropolitan cities (50%) and sub-metropolitan cities (40%) as compared to the municipalities accounting only 11.7%.
- The recycled quantity of waste averaged 4.1% of the total waste produced which indicates a large potential of reuse and resource recovery for the municipalities.
- Among the total municipalities only 114 (42.1%) municipalities are using the landfill sites.
- Out of the total 97 landfill sites, only 7 sites have treatment system.







GLASS & METAL WASTE
NON BIODEGRADABLE WASTE
BIO DEGRADABLE WASTE

- Circular Economy and Solid Waste management are crucial area to be focused for Sustainable Development in Nepal
- A circular economy is an economic system aimed at eliminating waste and the continual use of resources. In Nepal adopting a circular economy involves:
  - Reducing waste through design, production and consumption stages
  - Reusing and Recycling: Re-useable and returnable packaging eg. Reuse of glass bottle to refill Coca cola, Fanta etc. Recycling plastic to manufacture new products
  - Resource Efficiency: Extending the useful life of products, properly maintaining, repairing and updating electronic products, household appliances, furniture and other durable goods.

1. Municipal Initiatives: Some municipalities like Kathmandu have started waste segregation at source and composting organic waste, a valuable resource for agriculture and gardening.

2. Zero Waste Himalaya: A movement from Pokhara based NGO aimed at promoting zero waste practices and policies

3. NGOs Activities: Various NGOs like (Doko at Kathmandu) are active in raising awareness and implementing projects related to recycling waste and waste reduction

in Nepal

Biogas

Organic manure

Principle followed.

The 3Rs (Reduce, Reuse, Recycle) to be followed for waste management.

Solid Waste Management Policies in Nepal

1. **Solid Waste Management Act, 2011**
2. **Local Government Operation Act, 2017**
3. **National Urban Development Strategy, 2017**
4. **Environment Protection Act 2019**

Solid Waste Management Act, 2011

- Provides a comprehensive legal framework for managing solid waste in the country.
- Defines the roles and responsibilities of local bodies, the private sector, and the public in waste management.
- Sets out prohibitions on illegal waste disposal and specifies penalties for non-compliance.

Solid Waste Management Act, 2011

- The local body shall prescribe to separate the solid waste into at least organic and inorganic including different kinds at its source.

- The liability of transporting the solid waste up to the collection Centre by separating at its source as prescribed under Sub-section (1) shall lie on individual organization or body responsible for the production of such waste and the local body may for this purpose provide required technology, goods, equipment and container etc.

Solid Waste Management Act, 2011

- Local Body may, take necessary steps to encourage the reduction, re-use and recycling use of solid waste, by issuing necessary directives for its effective implementation. (Section 10)
- Local Body may coordinate with the concerned industry in the works to encourage the reduction of quantity of solid waste by making re-use of the material used for packing industrial products. (Section 10)

Local Government Operation Act, 2017

- Empowers local governments to manage solid waste within their jurisdictions.
- Allows local bodies to allocate resources and funds for effective waste management.

National Urban Development Strategy, 2017

- Integrates waste management into broader urban planning and development strategies.
- Encourages the adoption of sustainable waste management practices in urban areas.

Environment Protection Act, 2019

- Establishes guidelines for environmental protection, including waste management.

technical support to local government from MOFAGA to MoUD.

2. Revision of Solid Waste Management Act by MoUD

3. Construction and operation of Banchare dada Sanitary Land fill site for the solid waste management of Kathmandu Valley.

4. Construction of Land fill Site at various municipalities.

Government Initiatives

5. Strengthening the municipal capacity in 3R.

6. Promotion 3R activities at local level.

7. Preparation of short term, mid term & long term solid waste management action plan.

Government Initiatives

- M.Sc. Program in Environmental Science, Environment Management and Environment Engineering under various Universities in Nepal have integrated solid waste management in their academic curricula
- SWMTSC and municipalities have been conducting the various trainings for communities regarding waste handling, reuse, recycling of organic and inorganic waste including composting and other recycling options of different waste material

Major recycling industries in Nepal

- Plastic Recycling Industries
- Paper recycling industries
- Metal Recycling Industries

Achievements in Solid Waste Management

- Sanitary Land fill site of with capacity of 1500 ton per day is built and in operation at bancharedada, Nuwkot-Dhading (30 km from core of the city)
- Sanitary Landfill with capacity of 20 tons/day and service life of 20-25 years developed in Butwal and Birgunj under Secondary Towns Integrated Urban Environmental Improvement Project
- Household collection coverage increased to 90% in Janakpur (baseline 41%), Siddharthanagar (baseline 79%) and Nepalgunj (baseline 63%) and non recyclable waste disposed off in the landfill site under Integrated Urban Developmet Project

Achievements in Solid Waste Management

- Integrated Solid Waste Management (ISWM) along with Fecal Sludge Treatment Plant (FSTP) under construction in 3 municipalities (Dhangadhi, Godawari and Bheemdatta) – Under Regional Urban Development Project.

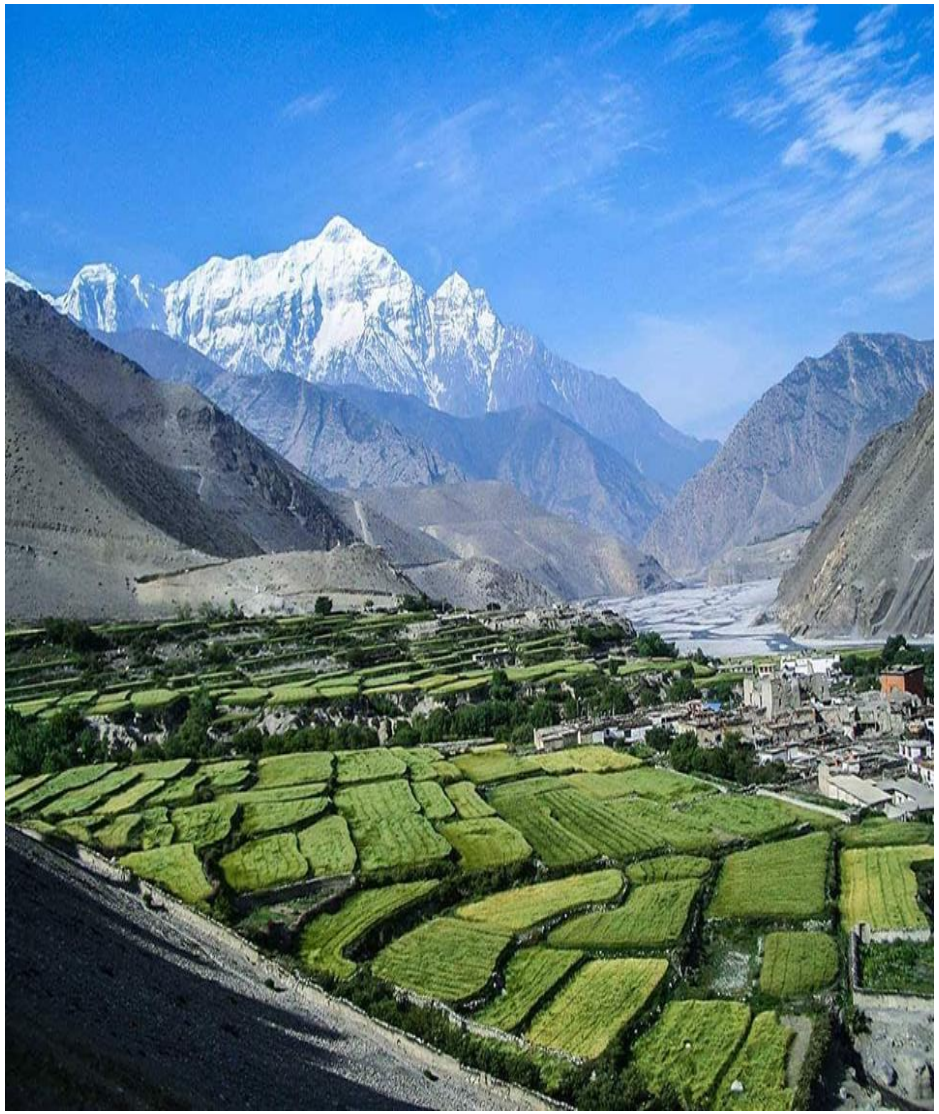
- Improving the entire system from segregation and collection, through reduce, reuse and recycle (the 3Rs), to transportation and final disposal at the sanitary landfill including resource recovery facilities.

Challenges

- Weak institutional capacity
- Rare use of innovative technology
- Financial sustainability
- Community bargaining in and around landfill sites
- Lack of technical human resources for better management of solid waste
- Lack of awareness and self ownership
- Low level of research and development in the sector
- Medical and e-waste management
- Operation of Solid waste management infrastructures
- Fecal waste Management

Possible Collaboration

- Technical Support
- Human Resources Development
- Financial Support



Some Glimpse About Solid Waste Management in Nepal

SWM infrastructures under construction

1. Waste collection and Transportation facilities

2. Landfill site

3. Leachate collection tank

4. Sludge drying beds

Banchare dada Sanitary land fill Site

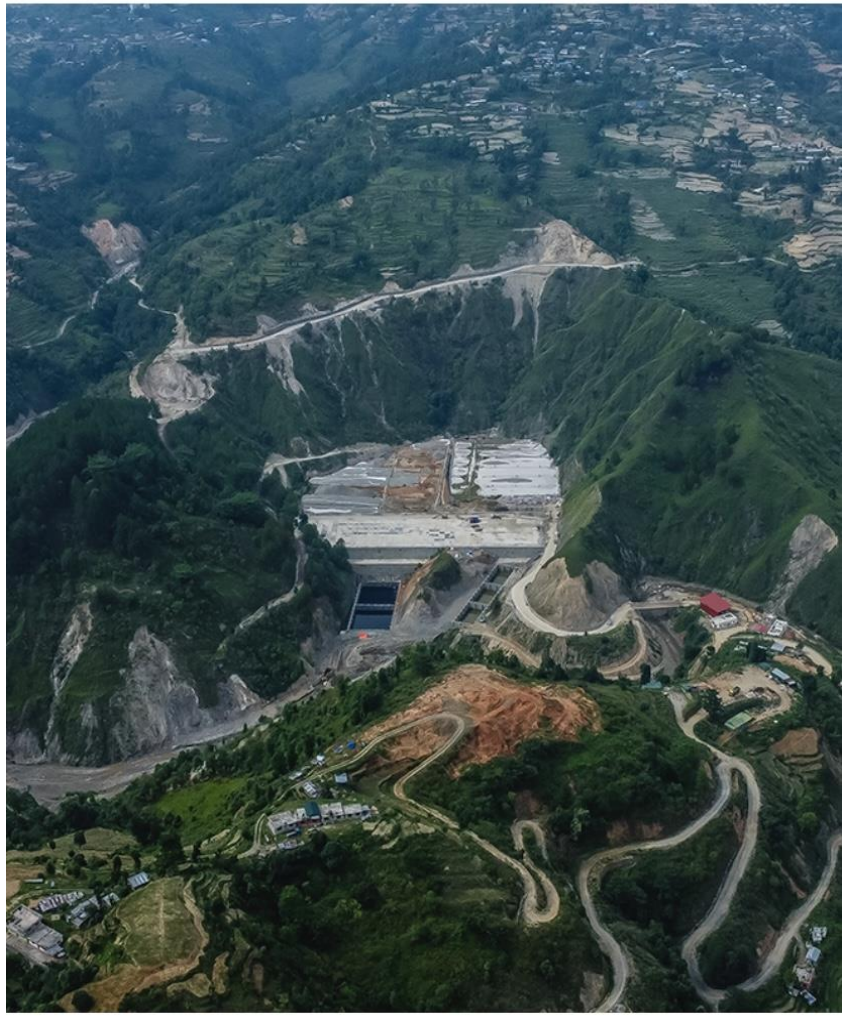
Banchare dada Sanitary land fill Site

Capacity: 5 million Cum

Design period : 20 years

Leachate tank capacity : 20000 Cum

Area of Cell1/2: 31000 Sqm



Waste to Energy Plant at Dharan Sub-Metropolitan City

Bio-gas Plant in Pokhara Metropolitan City

Plastic Road Construction at Kirtipur Municipality

ended up in the landfill site decreasing the life-span of landfill site.

Photo source: The Rising Nepal, 2021

Similarly, a trial road paved out of waste plastic was also constructed in Kirtipur by Green Road Waste Management Pvt. Ltd. in co-ordination with concerned municipality. The road extends to about more than 200-metres from Kirtipur Gate.

Plastic roads would be a boon for Nepal's Terai having hot and extremely humid climate, where temperature frequently cross 45°C and torrential rains create havoc, leading most of the roads with big potholes (Adhikari, 2020).

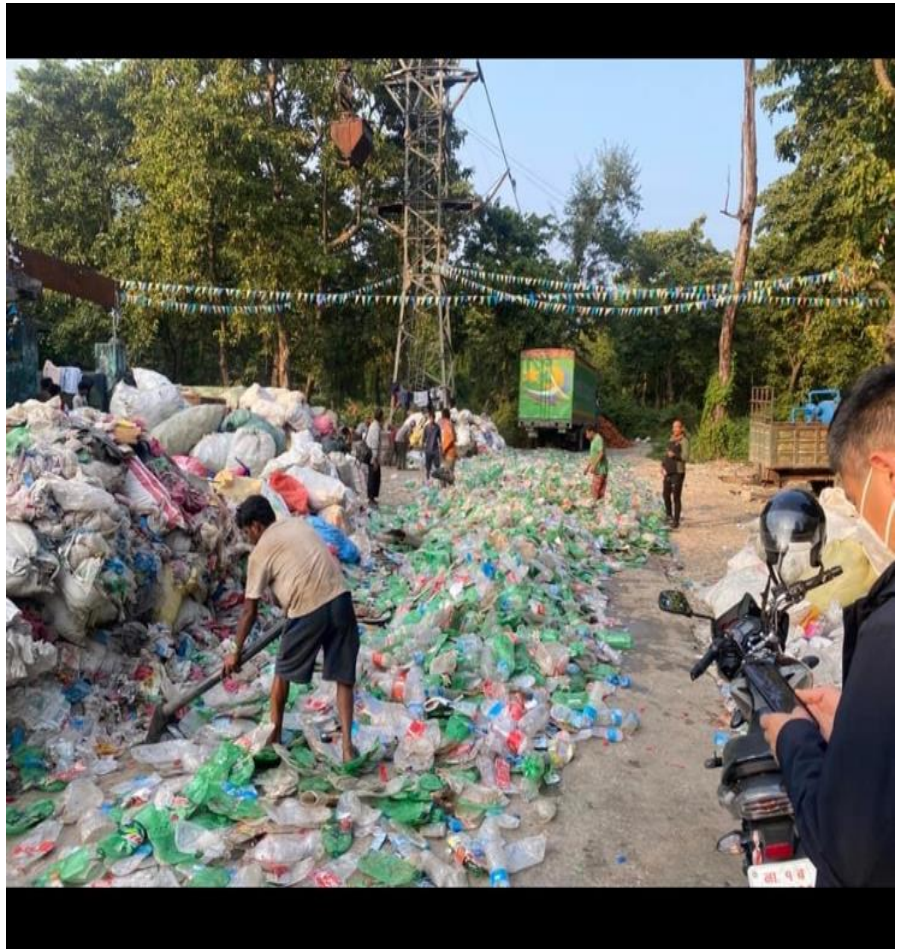
Organic Composting

Resource recovery by the informal sector at a landfill site.

Bio-gas Plant in Damak Municipality

Waste Collection Center at Waling Municipality

Kamalamai Municipality Waste Segregation Center



Waste to energy plant and dump site, Itahari-10, Dumartakka

Waste Segregation Plant Heatuda

Thank You