Organic Waste Management in Nepal

Traditional Vs Modern Systems for SWM in Nepal

How we view waste & our attitude is the problem

Modern attitudes SWM
- "Waste needs to be dumped somewhere"
- "It’s the municipality’s or government’s job"
- "Out of sight, out of mind"
- Sweep & Dump

Opportunities for organic waste management
- Animal feed
  - Direct or processed
- Energy
  - Briquette
  - Biogas
- Compost
  - Aerobic compost
  - Vermi compost
  - Biogas slurry
  - Others

Composition of Municipal Waste in Nepal

Opportunities for organic waste management

Composting of Municipal Waste in Kathmandu

Compost Chamber

Municipal waste composting in Kathmandu started in 1986 but has not been successful. Main challenges: Management, marketing, quality of compost.
Medium Scale Vermi Composting

Main Challenge: Marketing, Sustainability & Scaling Up

Vermi Composting Research & Demonstration at Horticulture Centre

Composting by NGOs

Rato Pul

Kupundol

Successful pilot projects. Need to scale up. This will require support for land and marketing

Composting by NGOs in Kathmandu

Harisiddhi

Recycling, Composting and Landfilling Facilities at Karauti Danda

Compost Plant operated by Kalpabriksha in Chovar, Kathmandu

Pit Composting at landfill site is a good initiation but some problems: contaminants (mainly glass) in compost & marketing
Compost plants outside Kathmandu

Household Composting

Central Compost Plant with PSP

Marketing of Compost

Biogas at Schechen Monastery

Puxin Biogas at Mirabel Resort, Dhulikhel

- Proposals called and MOU signed with private party twice but the process has not moved any further
- **Advantage**
  - Reduction in environmental impacts of landfiling
  - Reduction in cost of landfiling
  - Private sector investment could reduce investment requirement and risk to government
  - CKV estimated investment cost to be Rs. 220 M; private sector proposal in 2000: Rs. 100 M
  - Possible for Carbon financing
  - Increase life of landfill
  - Low lead time required
- **Disadvantage or Risk**
  - Need land for compost plant
  - Need to find private party
- **Potentially a large market, but marketing is a major challenge**
- **Need an effective marketing strategy for different segments**
  - Product: quality, packaging, branding
  - Price: Current price: Rs. 10-15/kg
  - Place: A good distribution network is often missing
  - Promotion: Targeted campaigns for brand awareness & sale promotion
- **Although some efforts have been made to market compost in Nepal, it is often the most neglected part of composting projects**
Household level SWM based Biogas

Household biogas in urban areas is feasible but price is a bit high (Rs. 30,000 for ARTI model)

Legal, Policy & Institutional Framework

- Central
  - National SWM Policy, 1996 is not being implemented
  - SWMRC’s role is not yet clear
  - A new SWM Act is in the process of being formed
  - Good system for promoting dung based biogas plants, but nothing for municipal waste based biogas
  - Agricultural Policy, 2001 promotes organic agriculture but no standards

- Municipalities
  - Often too busy in crisis management
  - Limited resources, especially in smaller municipalities
  - Some good initiatives
  - Lack of political leadership - decision making and coordination difficult

- Private Sector & NGOs
  - Providing waste collection services to about 50% of households in KTM
  - Some are involved in recycling and public education
  - Need coordination and support from municipalities
  - Potential for expanding their roles is very high

Conclusions

- Need to consider waste as a resource, particularly organic waste
- Some successful pilot projects on composting and biogas but there is a need to address challenges such as operation & maintenance, sustainability and scaling up of these technologies
- Waste separation at source needs to be implemented
- Household based composting & biogas can be scaled up with increased awareness, technical assistance and incentives
- Community based composting is possible where land is available, but marketing and sustainability needs to be ensured
- Biogas could be appropriate for vegetable market or food waste
- Need to strengthen local governments
- Partnership with private sector and local communities is important

Thank You