

Clean Air Convening SWM

Problem - SWM

- Wet waste in landfill leading to fires, leading to air pollution
 - 50-60% of HH waste is wet waste.
- Solution
 - Decentralised processing – as close to the source
 - Segregation
- Horticulture waste in winters,
- Seasonal changes because of leaves burning, along with plastic – for disposal, and for heat
- For heating water and cooking, use of plastic and wood – in low income areas, construction sites, slums, villages,
- No replacement for kerosene to start fire. Coal dust from Steel plant
- Govt not recognising it as a problem, very little data, no monitoring tool and methods
- What is being burnt, emission inventory- decentralised and centralised burning
- Vehicles which are used for waste management being in poor condition
- Open vs closed burning (in WTE and other small incinerators) – reasons are strong lobbying, easier to manage for administrators
- Fire is supposed to be pure culturally in many regions,
- Lack of regular collection from garbage vulnerable points leading to distributed burnings
- Lack of capacities in adopting technologies without understanding whether it is appropriate for our conditions – like Incinerators, biogas plants
- Population increase and hence increase in density of population should make us rethink the solutions

Problem – C&D

- Infra is likely to grow 3 fold in till 2030
- Not just houses, it is related to all kinds of infrastructure Frequency of demolition, expansion of infra,
- Making C&D waste visible is important, No monitoring of illegal dumping, illegal dumpsites become air pollution hot spots.
- govt accountability, no single agency
- Air pollution during the life cycle of construction is not well understood
- No data available – take photos, estimate volume and then tonnage
- Processing plants are there, but no collection is there
- Collection system is broken, collection point is available in NOIDA but outside trucks not allowed.
- Not covering of transportation vehicles
- Most collection vehicles are diesel based trucks, and are carrying higher loads than capacity, so emissions are higher, no EV alternatives
- Concrete roads replacing tar roads, but right methods are not used – has more problem of dust
- No percolation of water because of concrete roads
- Demolition of bricks and concrete together makes recycled output less lucrative because of more porosity, no enforcement of segregation at demolition
- Dumping is the largest problem of air pollution for CnD waste
- Broken window theory
- RERA and HERA plans cover C&D waste handling, but fines are low. Maybe the fines have to be higher
- Green covers being torn
- Connection between NCAP and C&D waste management – funding under NCAP can be used to improve C&D waste management.
- Recycling is not viable because the output

Solutions - SWM

- Lack of segregation. Wet waste in landfill leading to fires, leading to air pollution. 50-60% of HH waste is wet waste.
 - **ACTION:** Wet waste should be treated at source.
 - Household level composting. OWC and other solutions. Individual composters. Tax concessions for home composting. Incentivise it.
 - Awareness, TG: Children / schools , Slum level awareness (flashcards, pictorial ICE, art), About incentives, involve architects and builders to design spot on this
 - Training, workshops, guidance min 2 months
 - Adoption Studies
 - Separate commercial waste (bazaars, two-time pickup,)
 - Norms for waste management in building plans
 - Bhagidaari needed - work should not increase
 - "Dirty" mindset needs to change - Social Behavioural Change Communication
 - Traditional practices - compost as "gold"
 - Ujjwala scheme - affordability of LPG is low
 - **WHO:**
 - ULB sanitary inspectors to safai karamchari,
 - Waste contractors
 - RWA collaboration, Apartment level,
 - NGOs
 - Schools and colleges
 - Slum dwellers
- Waste burning. Horticulture waste in winters, Seasonal changes because of leaves burning, along with plastic – for disposal, and for heat, For heating water and cooking, use of plastic and wood – in low income areas, construction sites, slums, villages,
 - **ACTION:**
 - Solar heaters, Smokeless chulhas , affordable clean cookstoves (CSR supported - can provide to each society), Solar/ Biogas for community level cooking
 - Government schemes - provide alternatives to community bonfires
 - ICE - on health impacts, HAP toolkits, ULB awareness on identifying the problem,
 - Incentives - How to create an incentive to report, Target setting, ward-wise target / allocated to person responsible per ward, community level recognition, competitions,
 - Disincentives - Audit framework, checking of enforcement,
 - Migrant Labour - Builders to provide clean heating option, better housing alternatives, Winter shelters with blankets, cookstoves etc.
 - Monitoring: Mapping of hotspots, time to time audits, drone surveys, use latest technology
 - Fine for urban middle class
 - Technology: AI, photograph of each households waste,
 - **WHO:**
 - Slum dwellers
 - Homeless
 - Construction labour
 - Security guards
 - RWAs can take onus for this - should get fined
 - ULB
- No replacement for kerosene to start fire. Coal dust from Steel plant
 - **ACTION:** This is an affordability issue.
 - Govt schemes, Ujjwala yojana - stoves exist, but need to subsidise cylinders, basti fires,
 - Save cylinder, use sparingly, cylinder rate needs to reduce for those in Ujjwala Yojana,
 - Iron and Steel companies, use good coal, remaining coal dust is made into little bricks, v low cost. After burning it, what remains is ash. How to dispose that.
 - Slag dumping, Coal dust management - not covered either, health impacts,
 - IEC - Health checkups, mapping of health

Solutions - SWM

- Govt not recognising it as a problem, very little data, no monitoring tool and methods
 - **Actions:**
 - Research methodologies: NGOs, PHDs, University collaborations
 - Mapping on ground & multiple checkpoints: Crowd sourced, mine data from govt apps, squads to monitor hotspots, compile different databases, Govt apps, alternatives with private apps for data collection
 - Campaigns: Partner with good ad agencies, social media campaigns,
 - RWA level checkpoint, household level identification,
 - Behavioural intervention triggers: SBCC
- Emission inventory- decentralised and centralised burning
- Vehicles which are used for waste management being in poor condition
 - **Actions:**
 - PUC, small EVs for d2d
 - Trainings for govt officials
 - Onboard monitoring devices for overload checking, driver behaviour, etc.
 - Better IoT, integrative w mparivahan
- Open vs closed burning (in WTE and other small incinerators) – reasons are strong lobbying, easier to manage for administrators
 - **ACTION:**
 - Guideline from Gol for ULBs on best practices about WtE
 - Anti lobbying campaigns via experts
 - Transparency of data
 - Capacity building of ULB + Citizen awareness, political campaigns + Anti campaign from media
 - Collaboration between journalists, experts, lawyers, social media experts... NGT.... create pressure
 - Recharge activists mental energies - reporting + community drives / festival style
 - **WHO**
 - Universities, professors
 - NEERI

Solutions - SWM

- Culture / Behaviour: Fire is supposed to be pure culturally in many regions,
 - Action:
 - Messaging: What is truly holy? Burning plastic is making fire “impure”.
 - Focus on noise pollution - talk about children’s education...
 - Trade licenses linkage
- Lack of regular collection from garbage vulnerable points leading to distributed burnings
- Lack of capacities in adopting technologies without understanding whether it is appropriate for our conditions – like Incinerators, biogas plants
- Population increase and hence increase in density of population should make us rethink the solutions
- Others:
 - Decentralised waste collection
 - Land crunch for MRF, land pooling, new cities vs existing cities - Pinjra model on roadsides, Under flyovers (for MSW put fire safety measures)
 - NIMBY - Community / Lane composters + participation, Make a model project -> compost -> vegetable gardens; ULB officials who support & monitor such initiatives see more success; education-level agnostic outputs

Solutions – C&D

1. Infra is likely to grow 3 fold in till 2030. Not just houses, it is related to all kinds of infrastructure Frequency of demolition, expansion of infra
2. Making C&D waste visible is important, No monitoring of illegal dumping, illegal dumpsites become air pollution hot spots.
 - a. For citizens: Malba spotting walks for citizens using MCD or Malba Map app and upload the locations of C&D dumping.
 - b. Helpline for calling for complaints and pick up
 - c. Ward fact sheets and QR codes for disposal locations and contact numbers
 - d. Dissemination of AQI numbers to people
 - e. Nukkad natak for ULB officials, students, C&D waste collectors,
 - f. Short videos on social media, IVRS messages, use of influencers
3. Govt accountability, no single agency
 - a. Need for a separate Dept for C&D waste management under the Municipal Corporation. This should be same dept (city town planning dept) who gives approval for construction.
 - b. Dedicated flow of funds
 - c. Digitization of processes for transparency of construction, waste generation & disposal (like it is being followed fro biomedical waste)
4. Air pollution during the life cycle of construction is not well understood
5. Data availability – take photos, estimate volume and then tonnage

Solutions – C&D

6. Processing plants are there, but collection system is broken. For example, collection point is available in NOIDA but outside trucks not allowed.
 - a. Empanelment of vendors for addressing from small generators like households
 - b. Collection from non-bulk can be responsibility of municipal corporations.
 - c. Separate agency for collection is required (as MSW contracts are weight based, so contractors mix the C&D waste with MSW to increase the waste to get more tipping fee). Separate contracts for MSW and C&D waste
 - d. Designated space for collection of C&D waste and it should be advertised
 - e. Awareness about source segregation of C&D waste, educate the demolition team
 - f. Dumping to be penalised
 - g. EPR for cement and ceramic producers
7. Not covering of transportation vehicles, running at over capacity etc
 - a. Vehicle should be covered, open vehicles can be challaned, water sprinkling
 - b. Training for drivers and collectors
8. Other points:
 - a. Architects should ensure sanction plan has the C&D waste plan
 - b. Training and welfare for the waste workers working on C&D waste
 - c. Air pollution from the C&D waste recycling plants needs to be controlled (through monitoring by PCBs, through better planning and implementation of the regulations?)
 - d. Maintenance of the monitoring equipment to be done periodically
9. Key stakeholders in order of priority:
 - a. ULB officials
 - b. Community
 - c. Builders & Architects

Solutions – C&D

8. Most collection vehicles are diesel based trucks, and are carrying higher loads than capacity, so emissions are higher, no EV alternatives
9. Concrete roads replacing tar roads, but right methods are not used – has more problem of dust
10. No percolation of water because of concrete roads
11. Demolition of bricks and concrete together makes recycled output less lucrative because of more porosity, no enforcement of segregation at demolition
12. Dumping is the largest problem of air pollution for CnD waste
13. Broken window theory
14. RERA and HERA plans cover C&D waste handling, but fines are low. Maybe the fines have to be higher
15. Green covers being torn
16. Connection between NCAP and C&D waste management – funding under NCAP can be used to improve C&D waste management.
17. Recycling is not viable because the output