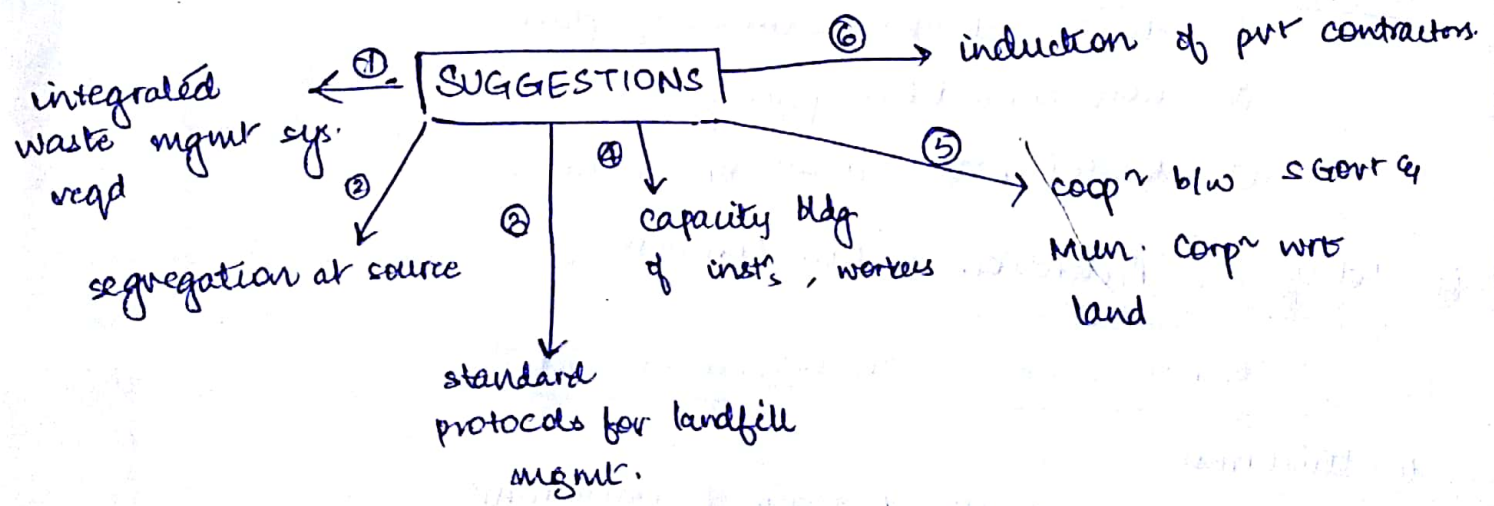
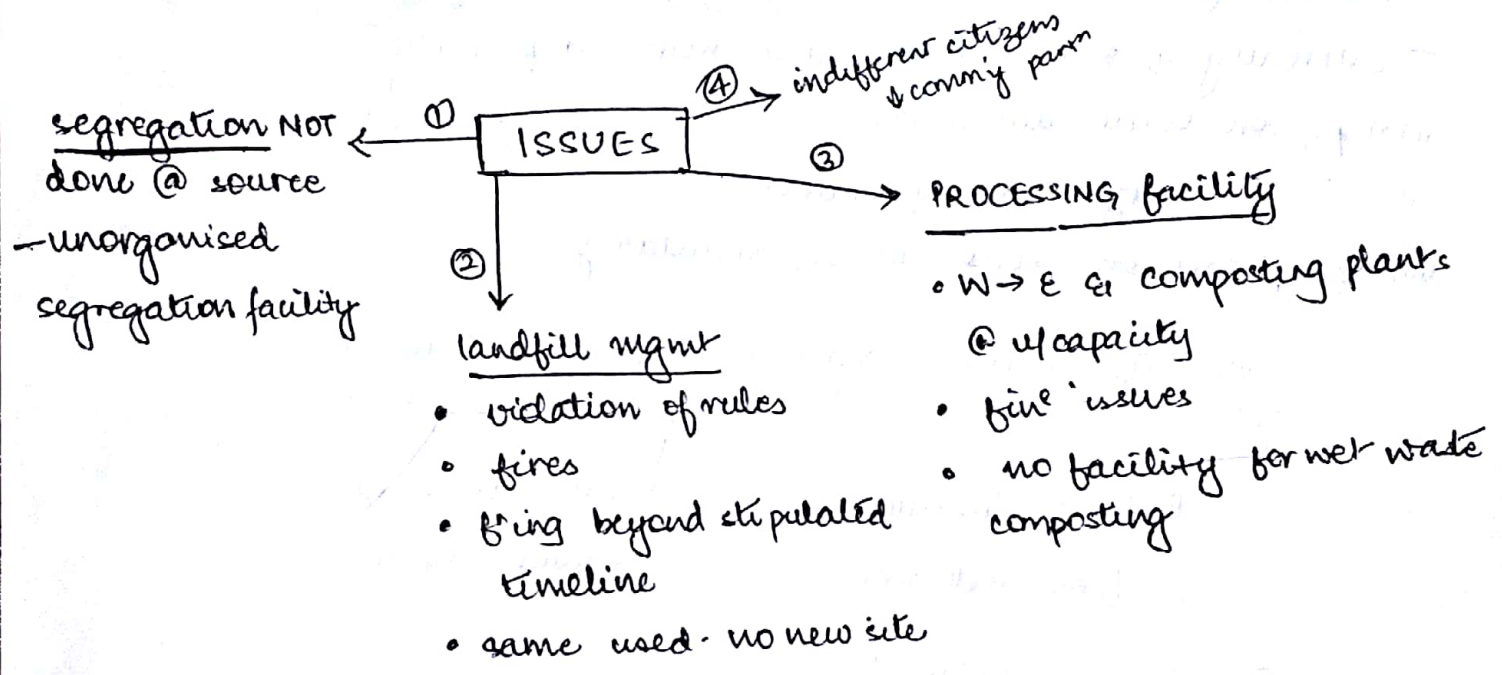


1.7 lakh ton MSW/day **SOLID Waste Mgmt** Target: 700MN from MSW plants syn.

as per WB - the process of collecting treating disposing solid wastes generated by all urban popⁿ groups.

* rules laid down by Central Govt by EPA 1986
 CPCB & SPCB monitor the compliance of standards
 mgmt of wastes rest w/ MUNICIPAL CORPORATIONS.



62mT solid waste / yr - 43mT - collected - only 12mT treated
 60% 20% treated.

RECENT EFFORTS -

- ① all power distⁿ co_s to buy elec^y from power plants fuelled by solid waste
- ② pvt fertilizer co_s to buy compost extracted from MSW.
- ③ **Constⁿ & Demolition Waste Mgmt Rules** by MoEF.
- reason for ↑ air pollⁿ dumped in water bodies ^{↑ Yamuna} mangroves
- currently w/ 8 MW rules ∴ not managed properly
(i) resp^y on local authorities
(ii) " " large scale generators Sprr - 98% recycled
(iii) emphasis on reuse 10-20% mandatory

WASTE WATER Treatment in Urban Areas

Effluent treatment
- from industries

sewage treatment
- human waste

ISSUES

- ① only 31% treated
 - ② technological backwardness of plants
 - ③ non competitive pricing
 - ④ treated water distⁿ n/w is weak
- ④ Policy on Promotion of city compost

PLASTIC waste management rules

- ① thickness
- ② Gs have been given & resp^y of implement^r
- ③ extended producer resp^y
- ④ resp^y of v^{is}tal waste generator to sort as per SWM rules
- ⑤ resp^y of street vendors & retailers
plastic for road cover

e-waste mgmt Rules

replace 2011 rules
MoEF.

4% of global

5th highest (UN)

15% ring pa

40% of 1st landfill

has recoverables

- ① EXTENDED PRODUCER RESPONSIBILITY - earlier only consumers, recyclers
exclusive collection & exchange w/ target
resp'y of producer - 30% now - 70% year 70%
- CPCB - regⁿ & monitoring r/t SPCB.

ease of implementation:

(i) Deposit Refund scheme

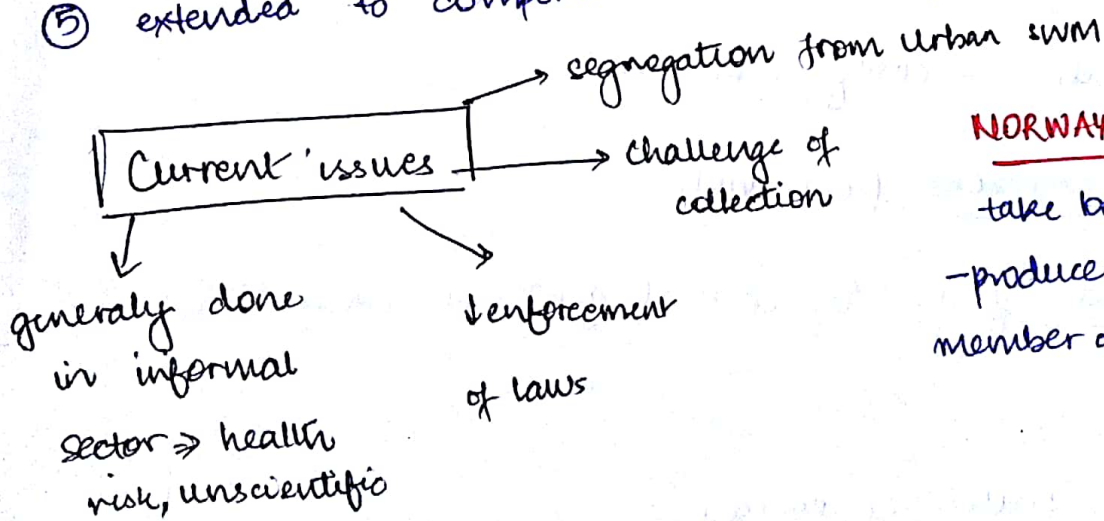
Delhi - installed
e-waste bins

② resp'y on govt to train & protect health of e-cycling workers

③ Bulk consumer Resp'y: file annual returns

④ RoHS: Redⁿ of hazardous substances during Mfg stage

⑤ extended to components and spare parts too - like CFL



NORWAY Model

take back COs.

- producers have to be a member of a take back co.

FLY ASH

- Coal combustion products - $SiO_2 + Al_2O_3 + CaO \Rightarrow$ fine particles

NEGATIVES → cannot support trees ∴ ↓ root support

↓
Contamⁿ of ground water
↓ in recharging of ground water

USGS → filling low lying areas.
↓
Constⁿ material → rly embankments
↓
filling marsh

WHY? → Iⁿ coal - ↑ ash content ~40%

↓
2009 with MoEF

↓
Maha Govt - export policy

WTE plant -

burns all the mun waste

burns RDF (Refuse Derived Fuel)
- combustible components of MSW

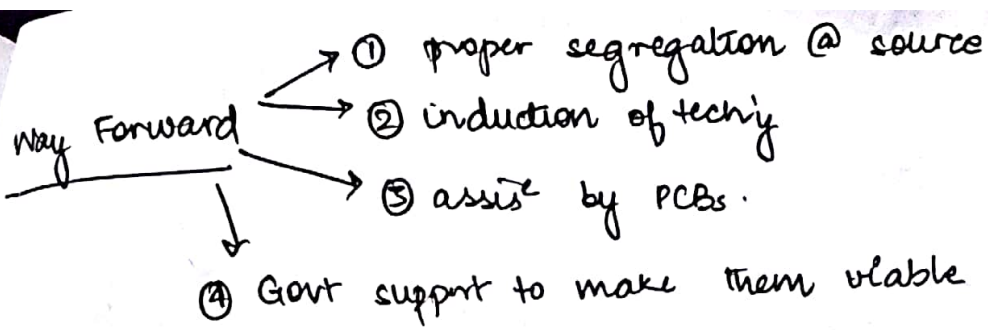
Challenges → ① Tech'y - costly, ↓ known
→ ② Emissions from plants

③ fine viability as Ter cost of genⁿ with conventional sources.

Adv → ① reliable source of energy
→ ② landfill sites are ltd.

↓
③ net GHG reducer as CH₄ emitted out of landfill sites decomposition

④ by prod. can be used as fertilizers
⑤ alternative source of energy



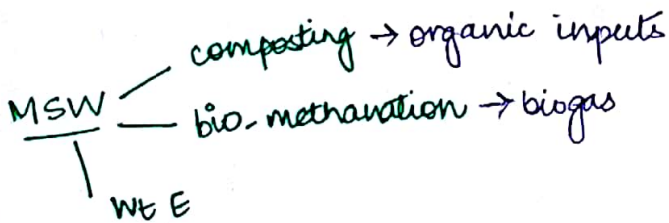
BUFFER ZONE - SNM Rules, 2016

CPCB - issued guidelines - to maintain buffer zone around landfills to minimize/prevent the impact of L-waste disposal

- to all future plants
- existing - measures such as planting trees & odor free tech'g

landfill - least preferred
BUT most widespread option in I

currently only guideline = 500 m from residential areas



FLY ASH UTILISⁿ POLICY Maha

Ash content of coal : 30 - 45%.
imported coal = 10-15%.

- ① cluster devt of ash based ind_s - eg cement
- ② cement, building material, roads, brick.
- ③ agral land - ↑ prod'y
- ④ export after treating it w/ cenosphere.