



At a Glance

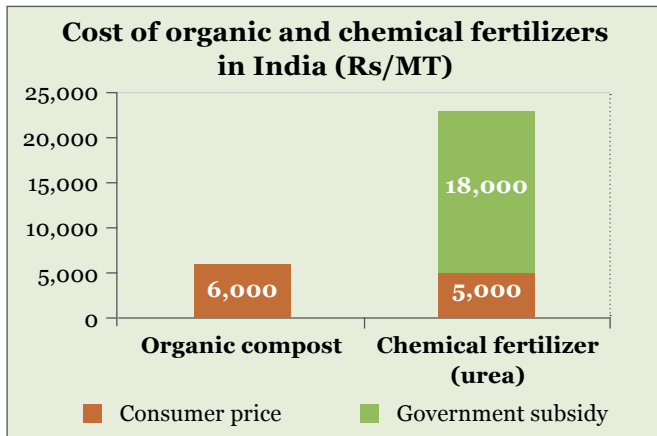
COMPOSTING

Compost is a humus-like substance created by the biological action of microbes present in wet waste on biodegradable material, under controlled ventilation, temperature, and moisture conditions.

Compost is produced aerobically (in piles, windrows, drums or silos by natural or mechanical aeration) or anaerobically by fermenting food waste. Vermicomposting uses worms to create compost.

THE CRISIS

- Only a small fraction of the biodegradable waste generated in India is composted.
- There is no nationwide survey on decentralised composting units in the country.
- In 2014, India's composting facilities were running way below capacity.
- Lack of source segregation of waste creates mixed waste that is much more labour intensive to compost.
- Mixed waste can release heavy metals and other toxins that enter the food chain through fertilisers from the compost.
- As chemical fertilisers are hugely subsidised, farmers opt to use urea instead of city compost.



Source: "A Natural Solution: The wisdom of decentralized composting schemes in India", Chintan Report: Decentralized Compost in Delhi.

GOING TO SEED

12% of the annual subsidy for chemical fertilisers could establish compost plants in at least 400 cities across India.

- **Centralised plants have consistently failed** due to high costs and lack of marketing avenues.

RETURNING TO DUST

- Percentage of organic waste in total waste in India (2010): 48–60%
- Calorific value of Indian organic waste: 800–12 kcal/kg
- Percentage of biodegradable waste from total: 60%
- Annual potential for composting in India: 4.3 million MT
- Cities with composting facilities (2008): 22
- Cities with composting facilities (2010): 40
- Total approved composting plants in India (2018): 639 (117 in operation and 199 planned)
- Percentage of waste composted in centralised plants: 7%
- Trash burnt daily in Delhi: 190–246 MT
- Capital investment for a composting plant: Rs 200,000/ MT of waste
- Selling price of compost: Rs 2,000–2,200/ MT
- Compost from 100 MT of mixed waste: 6.5 MT
- Subsidy on chemical fertilisers: 75%
- Fertiliser subsidy in 2009–10: Rs 49,980 crore
- Cost of 1 MT of urea for farmers: Rs 5,000
- Cost of 1 MT of compost for farmers: Rs 6,000
- Cost of 1 T of urea without subsidy: Rs 23,000

THE LAWS

- In the **1960s**, the **Ministry of Food and Agriculture** offered **soft loans** to urban local bodies for promoting composting of MSW.
- The **Fourth Five Year Plan** provided **grants and loans to state governments** for setting up MSW composting units.
- In **1974**, the **Government of India** introduced a **modified scheme to review municipal solid waste composting facilities** in cities with population over 0.3 million.
- In **1994**, over **35 composting facilities** emerged with **private sector** participation.
- According to the **Solid Waste Management Rules, 2016**, the government would:
 - provide market development assistance on city compost;
 - promote its co-marketing with chemical fertilisers;
 - set up quality testing laboratories.

GOING FORWARD

- **Use waste as a resource** that can be converted into compost to feed the land.
- **Promote decentralised composting** by involving and incentivising local communities.

GOING TO SEED

Organic waste from:

- Food and vegetables
- Garden
- Livestock
- Paper

contains ample amounts of nutrients for healthy agricultural crop and other plant growth:

- Nitrogen
- Phosphorus
- Potash

- Local and central governments must work together to **train interested parties** to meet the requisite quality standards.
- Urban local bodies should **train waste pickers for decentralised composting**.
- **Stipulate a minimum support price** for compost, especially from decentralised locations. Municipality horticulture departments should be the key procurement agencies.

chintan
environmental research and action group

238, Sidhartha Enclave, New Delhi - 110014, India
T: + 91-11-46574171/72/73, F: +91-11-46574174
E: info@chintan-india.org