



FOOD “WASTE”- AN UNTOUCHED GOLDMINE

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IMPORTANT TIMELINES

SWM Rules



2016

Balancing Bits



2018

Operations Lead



2022

BACKGROUND

- Gurgaon

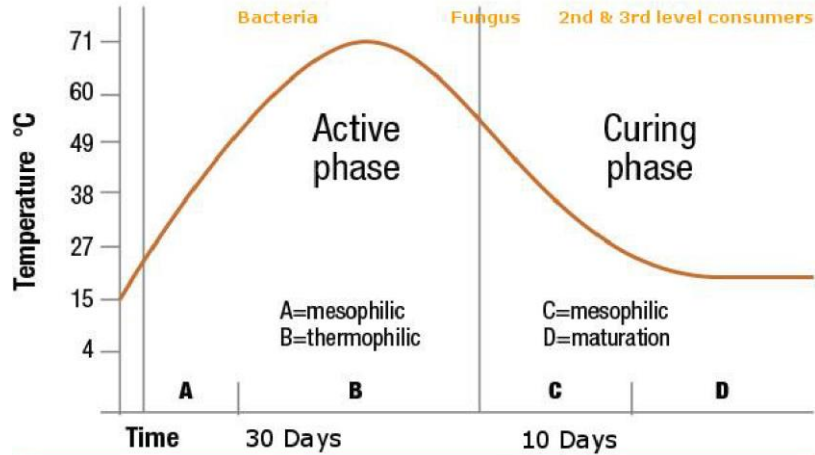
- VALUE OF FOOD WASTAGE IN INDIA IS AROUND ₹92,000 CRORES/ANNUM (UN)

- OVER 250 OF THE 500 FORTUNE COMPANIES ARE LOCATED IN GURUGRAM CONTRIBUTING TO THE POPULATION AND POLLUTION RISE.

- WE CAN EASILY EARN A REVENUE OF 353 CRORE **“ONLY”** FROM SELLING COMPOST

- POPULATION OF GURUGRAM IS CLOSE TO 2.5 MILLION AND IS EXPECTED TO GROW TO 4.3 MILLION BY 2031 (GURUGRAM MASTER PLAN 2031)

Aerobic Hot Composting - Natural process where bacteria in the presence of air (oxygen) breaks down the organic matter through their metabolic activities and change organic wastes into valuable humus-like materials and minerals called “compost”.



Consists Of Two Phases-

THERMOPHILIC- Temperature of the composting pile increases, providing the ideal environment for good bacteria to have kids. Temperature remains in between 45°C to 65°C. Generally lasts for around 30 days.

MESOPHILIC - Temperature starts to decrease, remains less than 45°C. Lasts for 10 days.

Food waste is mixed with horticulture waste to get carbon component and food waste is the nitrogen component. To fulfil NPK composition we add some bacterial enzymes.

TECHNOLOGY



Identifying organic waste as a economic opportunity for India

METHODOLOGY

- IN PERSON DISCUSSIONS
- OBSERVATIONS
- INCLUDED DATA POINTS ON THE BASIS OF 2031 WASTE GENERATION

RESULTS AND DISCUSSION

- 71% IS KITCHEN WASTE
- POPULATION INCREASE BY 36% YEAR GROWTH
- 10% TO 30% IS COMPOST

CALCULATIONS (IN THE HUMBLEST WAY POSSIBLE)

- 2300 TPD (Tonnes per Day) – Generation of food waste in Gurugram {if 4.3 million people generates 1.084 kg/day then it makes 4661 TPD solid waste- 71% of 4661 is 3310 TPD}
- $2300 \times 30 = 71300$ TPM (Tonnes Per Month)
- $71300 \times 12 = 855600$ TPY (Tonnes Per Year)
- Compost Assumed (10% of 855600 = 85560 Tonnes And 30% of 855600 = 256680)
- Taking 10% of the convertible compost, we get (85560000 kilos * 40 rupees = ₹3422400000), Since price of 1 Kg Compost is ₹40, at present.- Rounding of to 343 Crore Rupees
- According to Census 2011 there are 7935 Towns and cities in India- to ease up the calculation 2000 cities * 3000000000 rupees = 6 Lakh Crores
- Remember the very first point? –
- Value of food wastage in India is around ₹92,000 crores/annum- Is only 15% of the amount that we got.

- Reductions in CH₄ emissions
- Decreasing the height of dumpsites
- Reclaiming landfill area
- Employment opportunities

POINTS OF DISCUSSION

Landfills-Dumpsites

Landfill is a system of trash and garbage disposal in which the waste is buried between layers of earth to build up low-lying land and designed to protect the environment from contaminants.

About 40% - 60% methane gas is emitted from landfills dumpsites

CH₄ is 25 times more harmful in terms of global warming than CO₂ emission.

Dumpsites contribute to CH₄ emissions by 64% in India.

Global methane emissions from landfill dumpsites to increase more than 30 million tons every year.

Tipping fees-1000 Rupees/MT could have been saved 350 Crores alone in 2020 by not dumping in Bandhwari Dumpsite.

Carbon Credit

- A permit which allows a country or organization or an individual to produce a certain amount of carbon emissions and which can be traded on the exchange if the full allowed credits is not used. A system which motivates an entity to seek ways to decrease their carbon emissions and adopt cleaner ways of doing business.
- In July 2022 – 1 Carbon credit holds the price of \$3. Trading is possible at a web platform named GoldStandard.org. Currently involved with – VNVAdvisory.
- India is considered to claim about 31% of the total world carbon trade.

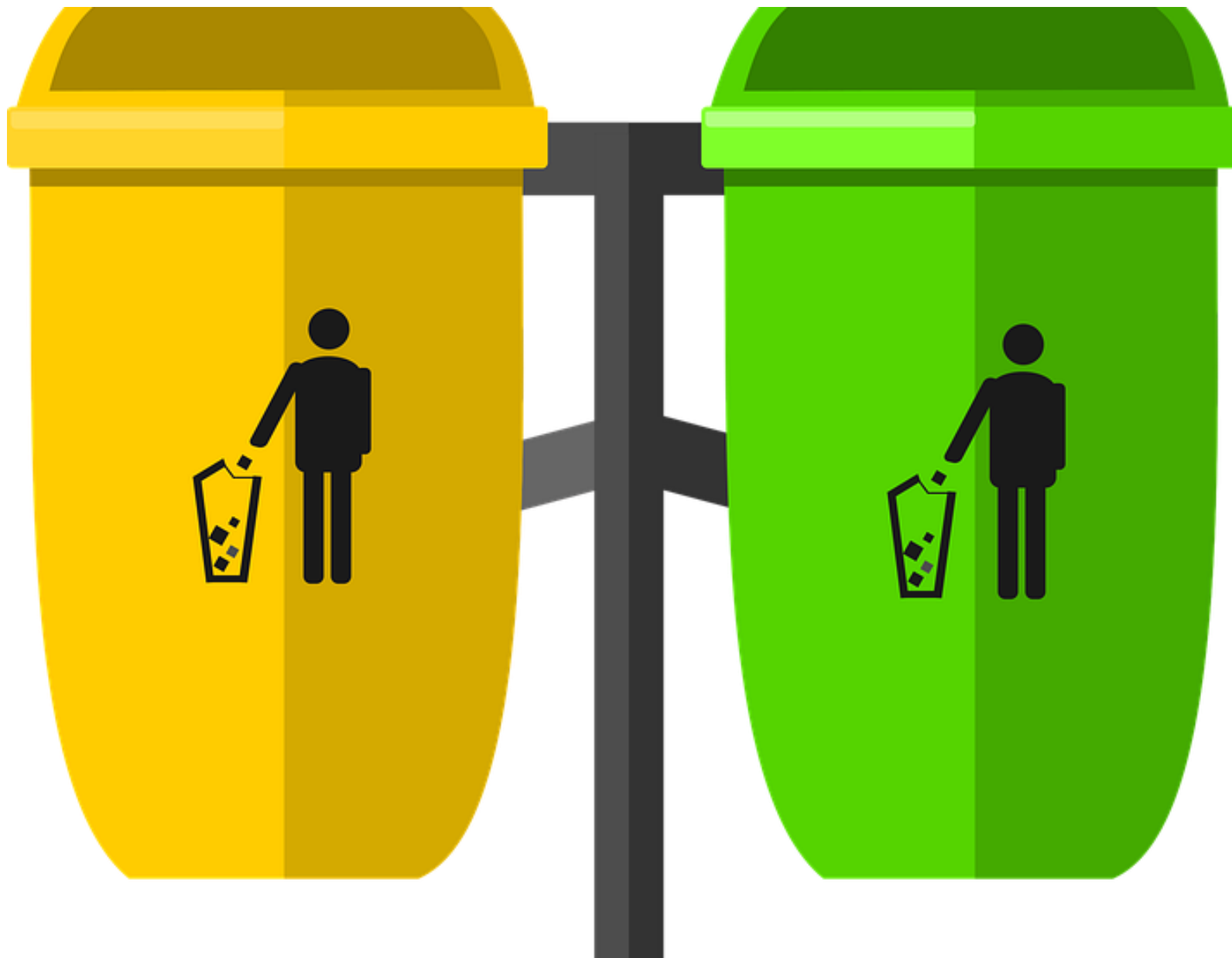
WAY FORWARD

- There Is No Highly Skilled Labor Required To Recycle The Food Waste Into Compost.
- The 800 Million Farming Community In India Has A Unique Opportunity Where They Can Earn From Carbon Credits
- Delhi Metro Rail Corporation (DMRC) Has Become The First Rail Project In The World To Earn Carbon Credits Because Of Using Regenerative Braking System In Its Rolling Stock Which Uses 30% Less Electricity.
- Ministry Should Enhance Local Organic Fertilizer Production
- More campaigns like #SaveSoil to aware the importance of soil enrichment.
- The existing Dumpsites can be further treated with two of the existing methods namely, Bio-mining and Bio-capping. These two methods are being followed in Indore and Bhopal respectively, no doubt these scientific technologies are very new to us therefore we need to observe and study the data being retrieved from the ground after implementing these two technologies to manage our existing landfill areas.
- Policy Strengthening (Scientific Landfills, Convenience fee charges from Citizens #MyWasteMyResponsibility)

LIMITATIONS

Of the study

- Not included other greenhouse gases (CO₂, N₂O, NO, and NO₂) emissions
- Further studies should emphasize in detail, the positive impact of improved food waste management on the ground water and leachate releasing problems associated with the current landfill sites
- Didn't discussed about GHG emissions related to the composting process, compost packaging and transportation
- Need more detailed analysis that can evaluate job creation's economic impact in the composting business



Although, these problems can easily be managed if we do not dump our food waste at the dumpsites, its as simple as that. This topic wouldn't exist, but I would like to thanks those who **don't segregate** their wet and dry waste in the respective dustbins despite having various kinds of banners, songs, and initiatives. I am again **extremely thankful** to them for giving me this opportunity.

“Waste is not a waste, but a Goldmine not mined.”

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A rustic wooden wall made of vertical planks, with two small square openings near the top. At the bottom, a wooden sign reads "THANK YOU." in red, hand-painted letters. The sign is placed on a patch of grass, with a grey concrete surface in the foreground.

THANK YOU.