Description

**Problem**: A report reveals that the Indian government imports 45 million tons of garbage every year from different countries. Not only this, but this number also increases by 4 percent every year. On the other hand, INDIA produces 65 million tons of waste every year. This waste that accumulates in such a huge quantity is of many types. One is recyclable i.e., plastic, the other type being the non-biodegradable waste, and at last bio-medical such as sanitary and hazardous waste. All this waste is being dumped on free land if this continues then in the coming years every city will several numbers of these "WASTE MOUNTAIN"

In a country like India, the biggest problem is Waste Management. India is fifth – largest economy by nominal GDP in the world but still lags in waste management. India is importing around 90000 tons of scrap from other countries despite having its own very huge collection of waste that’s a big problem. The daily waste production in India ranges from about 1,00,000 metric tons. A survey conducted by a verified source states that if this amount of waste production continues like that without its proper management, then each city in India will have its own Heap of Garbage. The main problem that comes across recycling waste is the segregation of the different kinds of waste from such a huge collection. This could be solved at the primary level let us say from the houses if the people get aware of the kinds of waste and segregation is done at the time of collection of waste then this issue can be solved.

As per the data given by **INDIAN AGRO & RECYCLED PAPER MILLS ASSOCIATION** India imports 60% of its total required raw paper from outside India. Our proposed solution of segregation of waste will help India in making itself **ATMANIRBHAR** in the field of Paper management.

**Solution**: We are revolutionizing the field of waste management by changing the behavior and mindset of people towards waste. It will be done by making them aware that they can monetize their waste.

These steps will lead them to treat waste properly.

We will ask the people to segregate the waste at the source into multiple categories and in return, we will provide them with rewards like gift vouchers, coupons, and cashback through our website or app.

We will work in the following steps:

1. We will allure the public by giving them rewards for segregating the waste right from their homes.

2. We will take the segregated waste from people, recycle it to make market ready products.

3. We will sell this market-ready product in the relevant industry which will be our main source of return.

4.The public will receive Wcoins for every delivery of garbage which can be redeemed later in the form of awards, gifts and other exciting prizes.

5.This solution will help the country in solving its garbage handling problem.

6. We will appeal the public to segregate the waste into various subcategories such as: Plastic waste, Paper waste, E- waste and organic waste, for each transaction the public will be awarded with Wcoins in their E- wallets which can be redeemed later on.

7. We will create a family ranking system based on their contribution towards segregation. Top families will be rewarded and appreciated by the government.

Following are the ways how we are managing the wastes:

1.Organic Waste:

Profit

(From this we give profit share to public)

2.Plastic Waste and In-organic Waste:

3.E-Waste:

Approx Estimation (For a Truck which covers 700-800 Homes):

1.For Organic Waste.

1-Truck can cover =800 Homes. (Source : <https://schec.gov> )

Each Home Produce avg 0.5 kg of organic waste daily, then

the total organic waste is carried by truck = (0.5) \*800 = 400kg

Approx Net organic waste by a truck = 700kg - 800kg

1000kg of waste produce = 65 kg of methane =97.5 kg/m3=1.68\*97.5= 163.8 L(Source : <https://www.biocycle.net> )

According to it 1 liter of methane costs =approx. 84 Rs (source <https://www.globalpetrolprices.com> )

So-net 1 ton of waste = 13,759.2 Rs

Then after the production of gas, the residual is converted into compost.

1 kg of dry waste makes 2 kg of compost.(Source : by an PhD research).

So-net compost can be produced by a truck = 2\*800=1600 kg

Cost of 1 kg of compost = 10 Rs

So-net cost = 10\*1600 = 16000 Rs

2.For Plastic & Inorganic Waste:

Following data is gathered after discussing with the multiple recycling industries

and from the internet.

|  |  |
| --- | --- |
| Waste | Price (Rs./kg) |
| Plastic bottle scrap | 51 |
| HDPE(plastic) | 45 |
| LDPE(plastic) | 50 |
| EV | 85 |
| Newspaper | 30 |
| Normal Paper | 25 |
| Cardboard(Gatta) | 30 |
| Glass Bottles | 10 |
| Mixed Plastic | 25 |

**Approx Estimation**

* Total Waste generated by 1 home on daily basis: 0.5kg
* Total Waste generated by 1000 home on daily basis: 0.5kg \* 1000 = 500kg
* The minimum rate of mixed plastic is 25 Rs/Kg and the minimum rate of paper waste is also 25 Rs/Kg
* 500 x 25 =Rs 12500/day
* 12500 x 30 = Rs 3,75,000/month

**Approximate Expenditure**

* Farm house cost = Rs 20,000 max
* 2 vehicle will cover minimum 1000 homes(500 each)
* Cost of 2 vehicle’s diesel and rent = 4000/day(2000 each)
* Cost of running 2 vehicles for a month = Rs 1,20,000
* No. of driver and helper = 4(2 each vehicle)
* Driver and helper charges = 4 x 10000 = Rs 40000 max
* Number of labours required for segregating the waste = 4
* Labour charge = 4 x 10000 = Rs 40000 max
* The segregated waste will be transported to factory once in a week.
* Number of transportation time in a month = 4

**Approximate Expenses**

* Total Expenses= 20000 + 40000 + 40000 + 1,20,000= Rs 2,20,000
* Additional Cost = approx. Rs 10000
* Total = Rs 2,30,000

**Profit(monthly)**

* Total Money Generated from waste = Rs 3,75,000
* Total Expenses = Rs 2,30,000
* Total Profit = 375000-230000 = Rs 1,45,000

Considering each home is providing us 0.5 kg waste/day we can provide them approx. **Rs100/month**

So money distributed 100 \* 1000 homes = Rs. 1,00,000

**NET PROFIT = 1,45,000 - 1,00,000 = Rs. 45000**

**Additionally**

We can also earn much more profit from the collected e-waste received from segregation.

It can range from 50 - 2000 Rs from a Home which is dynamic among houses. It depends on the item. (Source: <https://timeofindia.indiatimes.com>

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Details of companies who buying our waste** | | | | | | | |
| **Percentage** | | |  | **Types of Waste** |  |  |  |
| Solid Waste |  | |  | Plastic Waste |  |  |  |
| Plastic |  | |  | Paper Waste |  |  |  |
| Paper |  | |  | Organic Waste |  |  |  |
| E-Waste |  | |  | E-Waste |  |  |  |
|  |  |  |  |  |  |  |  |
| **Plastic Waste Industries & rate per kg** | |  |  |  |  |  |  |
| Companies | Mixed plastic | Plastic-bottle Scrap | HDPE Plastic | LDPE Plastic | EV plastic | Mobile Number | Address |
| Abuzer's Scrap | **20/25** | **51** | **45** | **50** | **85** | **9105-5461-50** | **Delhi** |
| Bottle & CO |  |  |  |  |  |  | **Delhi** |
| Kabadicart | **25** |  |  |  |  | **7251-0640-65** | **Noida** |
| Scrapuncle | **20** |  |  |  |  | **8595-3586-13** | **Delhi** |
| Banyan Recycling Center |  |  |  |  |  |  | **Delhi** |
| Alcis sports |  |  |  |  |  |  | **Noida** |
| RRSSR | **25** | **52** | **44** | **53** | **80** | **9873301543** | **Delhi** |
|  |  |  |  |  |  |  |  |
| **Paper Industries & rate of waste paper** | |  |  |  |  |  |  |
| Companies | Newspaper | Cardboard | Normal paper | Mobile Number | Official Address |  |  |
| Chamunda Papers PVT. Ltd |  |  |  | **9897-1202-02** | **Meerut Road,Hapur** |  |  |
| Ashoka pupl & paper PVT. Ltd |  |  |  | **9810-0767-95** | **Mohan Nagar Ghaziabad** |  |  |
| Kabadicart | **30** | **35** | **25** | **7251-0640-65** | **Noida** |  |  |
| Scrapuncle | **35** | **30** | **20** | **8595-3586-13** | **Delhi** |  |  |
| Kabadiwala | **20** | **25** | **20** | **7697-2602-60** | **Bhopal,MP** |  |  |

**HOW OUR SYSTEM IS WORKING AT LEVEL OF COLLEGE**

Steps involved in managing the waste related problem at college level are as follows:

1. We will collect the waste from the hostels, faculty residents and academic blocks.
2. We will segregate the waste into various subcategories which include Plastic waste, Paper waste, E- waste and organic waste.
3. We will then transport this waste into our **Joint Recycle Factories**.
4. In these factories the waste will be molded and converted to market-ready products and will be sold into the market.

Approx Estimation

* Total Waste generated by college on daily basis: 500Kg.
* But we can use only 200Kg of waste efficiently…
* The minimum rate of mixed plastic is 20 Rs/Kg, and the minimum rate of paper waste is also 25 Rs/Kg
* 200 x 20 =Rs 4000/day
* 4000 x 30 = Rs 120000/month

Approximate Expenditure

* Farmhouse cost = Rs 15000 max
* Number of labours required for segregating the waste = 4
* Labour charge = 4 x 10000 = Rs 40000 max
* The segregated waste will be transported to the factory once in a week.
* Number of transportation time in a month = 4
* Cost of 1 time of transport to the factory = Rs 2000
* Monthly cost of transportation = 4 x 2000 =Rs 8000 = approx. Rs 10000

Approximate Expenses

* Total Expenses= 15000 + 40000 + 10000 = Rs 65000
* Additional Cost = approx. Rs 10000
* Total = Rs 75000

Profit(monthly)

* Total Money Generated from waste = Rs 120000
* Total Expenses = Rs 75000
* Total Profit = 120000-75000 = Rs 45000