bE-Responsible: An initiative for e-waste management

1. Project Summary:

Saahas in partnership with Environmental Synergies in Development (ENSYDE), is implementing an initiative called bE-Responsible, to encourage responsible e-waste management in 30 wards of Bengaluru. The initiative focuses on non-bulk e-waste collection through sensitisation and multiple collection/disposal options for households d institutions, and sending the collected e-waste to authorised recyclers. The program was started in November 2016 and since then we have reached out to hundreds of institutions and Resident Welfare Associations (RWAs) in Bengaluru to on-board them to bE-Responsible Initiative. We have tied-up with recyclers authorised by the Karnataka State Pollution Control Board (KSPCB) to ensure that the e-waste collected is managed in a socially and environmentally responsible manner.

2. Situation before Project Intervention:

E-waste is emerging as the fastest growing waste stream across the world due to digitization, consumerism and obsolescence. India ranks 4th in the world for e-waste generation and Bengaluru ranks 3rd in India. E-waste contains hazardous materials, therefore it needs to be collected and processed in safe and scientific conditions. However, in the absence of strict enforcement of rules, lack of awareness and dedicated collection infrastructure, most of the e-waste ends up in the informal or unorganized sector.

Bengaluru was no exception, until November 2016. The city had very few formal e-waste collection systems and very few citizens were aware about the harmful effects of handing over the e-waste to informal sector.

3. Aim of bE-Responsible program:

- Channelization of non-bulk e-waste to authorised recycler
- Providing multiple collection and disposal options of e-waste to the citizens

4. Awareness campaigns:

Sensitization campaigns form a very important component of the program. Various awareness and training sessions are conducted as part of the initiative in Residential societies, Bangalore One centres, Post offices, Commercial centres, Schools, Colleges, etc. Social media platforms have also been used to spread awareness of issues around e-waste disposal. The program has received very good media coverage in both local language as well as English via radio jingles, newspaper articles, etc.

Pic 1: Awareness event at Bangalore one centre

Pic 2: Awareness event at Post office

Pic 3: Awareness event at Schools

Pic 4: Awareness event at Commercial Centre

5. E-waste disposal options:

Through this program we have provided three very easy options for the citizens to drop e-waste. Following are the options:

a. E-waste drop boxes at public places:

Through an exciting collaboration with India Post, Bangalore One Centres, Rotary club and MK Retail, we have placed public pilfer proof e-waste drop box at many of their centres. These drop boxes are regularly emptied by our mobile collection van and a receipt for the e-waste collected from the bin is shared with the respective authorities. The e-waste collected in sent to a KSPCB authorized recycler.

Pic 5: Public E-waste drop box

Pic 6: Public dropping e-waste in Public e-waste drop box

b. Registering for monthly e-waste pick up:

We help residential societies and layouts, offices, etc. set up e-waste drop boxes in there complexes and our mobile van collects e-waste on schedule intimated in advance.

Pic 7: A resident dropping e-waste in the e-waste drop box set up in the residential complex

c. On call pick up request:

Through our hotline number we provide an option to citizens with big bulky e-waste items such as microwaves, refrigerators, etc., to schedule the pick-up of e-waste from their doorstep.

Pic 8: Our staff collecting e-waste as part of an on-call request

6. Project Impact:

Through this initiative we have collected approximately **50 Tons** of e-waste in a span of 2 years from 30 wards of Bangalore and routed it to authorised recycler.

Following is our environmental impact:

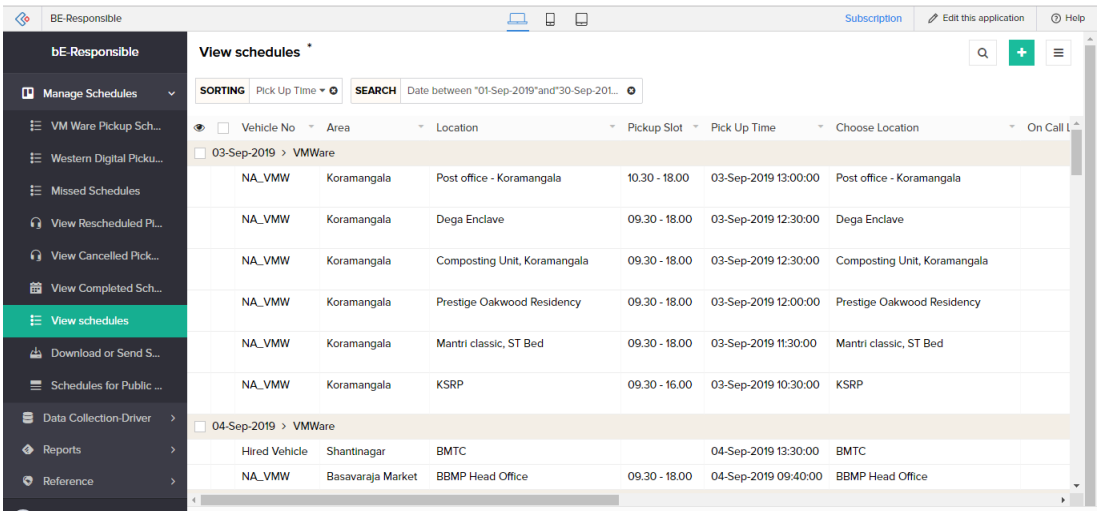
- **GHG** emissions reduced by **14379.21 kgs**
- **Toxic metals** diverted **296.62 kgs**
- **Total metals** recovered **3483.9 kgs**

7. Usage of IT:

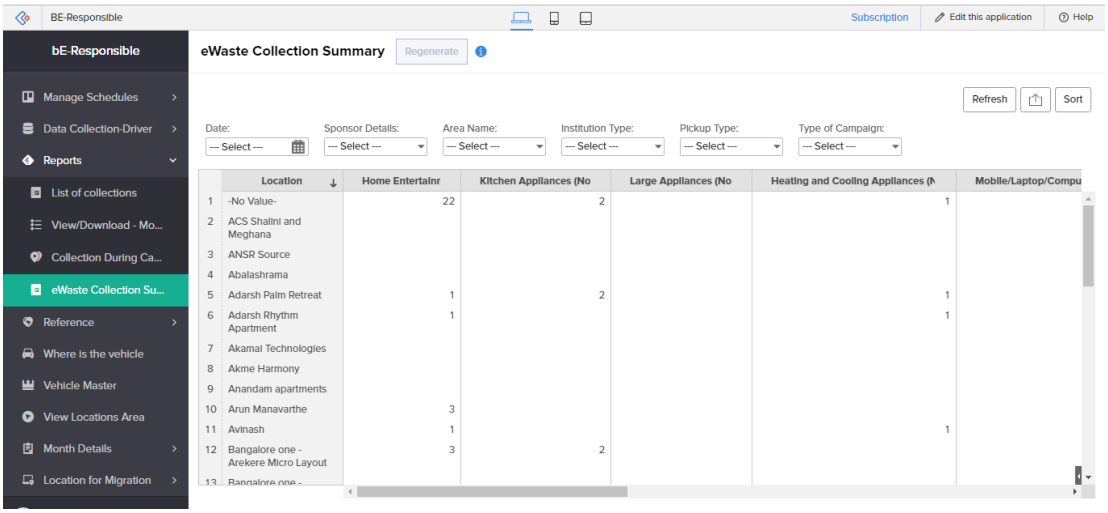
In order to scale the program, we have extensively used IT tools to optimize the collection schedule and routes, manage the database of donors of e-waste, send out automated receipts and maintain the records of collection data. A Zoho based app has been developed for this purpose.

Before intervention of Zoho, all our campaign and collection data was tracked in traditional google sheets which and even the scheduling for pickups were done manually and hence our resources weren't used in an optimal way. After getting a Zoho app built to track our data, schedule the e-waste pick-ups, send out e-receipts for e-waste collected and tracking of campaign data, our overhead on a lot of the manual work has reduced and hence we are now able to focus more on the important cause that we are working on.

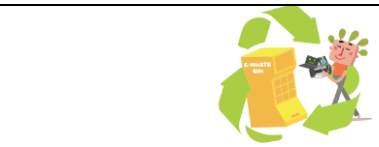
Other than this we are also working on integrating with other logistics app to further smoothen our processes.



Pic 9: Scheduling



Pic 10: Collection data



Collection of eWaste on 05-Sep-2019 from Post office - Banashakari Inbox

manvelalur@ensydeindia.org via usermail.zohocreator.com

to me

Dear Customer,

We have collected e-Waste from your premises on 05-Sep-2019

SNo	Particulars	Qty	Charges
	eWaste Total	14.00	₹0.0

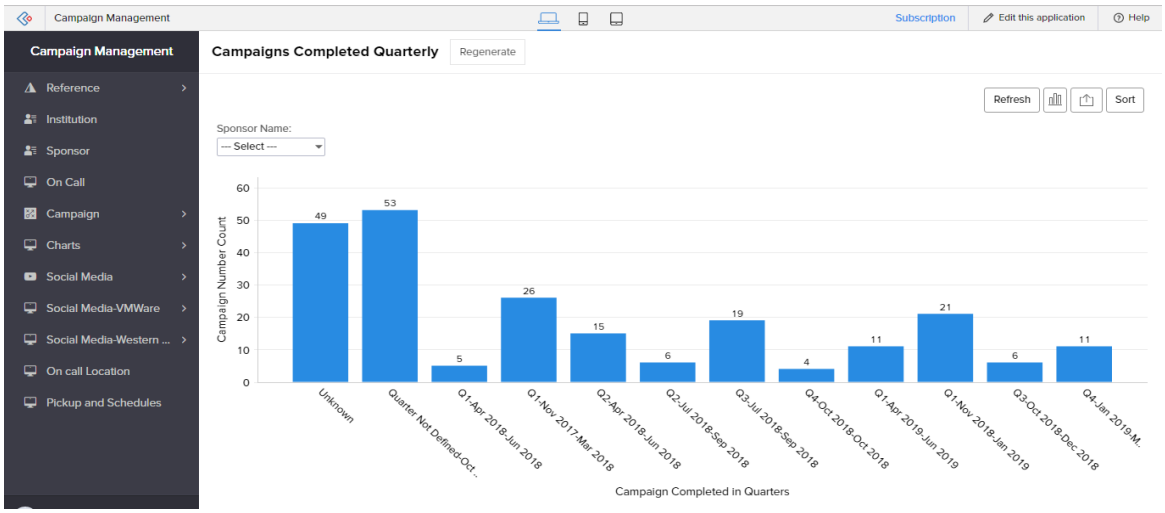
Thank You for disposing your e-Waste responsibly.

Please give us your feedback: https://www.surveymonkey.com/r/KG6HNXY

Regards,

Project Coordinator

Pic 11: E-receipts



Pic 12: Campaign data

Following are the issues that are solved using IT:

1. <u>Pilferage:</u>

   E-waste has good value in the market and hence we used to face a lot of pilferage issues but now using Zoho app we are tracking our vehicle with the automatic schedule generated by the system and also are able to track the data on the collected e-waste.

2. <u>Traceability:</u>

   Through Zoho platform, we are able to keep a track of collected e-waste into different categories like location from where the e-waste was collected, type of e-waste collected, frequency of e-waste collection, etc.

3. <u>Improvement in efficiency:</u>

   Earlier we used to schedule the pick-ups manually and hence we weren't using the resources optimally. Zoho app schedules the pick-up based on the google maps and hence we are now able to do more pick-ups and hence use the resources optimally.

8. Conclusion:

Technology isn't just an industry, it is a way of transforming an existing system. Technology plays a critical role in sustainable development as it makes the development more handy and easy to replicate.