TIEEDI
PERMACULTURE
FOUNDATION

ZERO WASTE DCRC, Alipurduar

PROJECT REPORT

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TABLE OF CONTENTS

AGENDA

This doc is prepared to serve as a reference document for organizing and planning a DCRC venue with zero waste perspective during elections in India based on the experience of executing the zero waste DCRC venue in Alipurduar, in the district of West Bengal held on the ground of parliamentary general elections 2024.

It will highlight the environmental impact of conducting a DCRC venue zero waste by analyzing the footfall, analyzing the numbers and also share an assessment of the impact on the environment and communities.

APPROACH

- Establishing the key challenges for holistic waste management for such large scale program
- Recommendations to resolve the problems before executing the plan
- No landfill dumping of waste generated during the event
- No burning of waste generated during the event
- No single use flex banners used as signages or for anything inside DCRC
- No single use type of decoration material used for the decoration or beautification purpose in DCRC
- No single use plastic plates and glasses while serving the food or drinks in food park
- Onboarding of the *safai karmacharis* from Municipal department by training them as zero waste officers and NCC students as volunteers
- Providing support and creating awareness in SHG groups to not use single use plates for serving food in food park during event
- Paper cups also avoided in food park to serve drinks like tea or juices
- Ensuring that the non-biodegradable waste is taken to material recovery facility for secondary segregation and then to recyclers for further processing
- Aimed at holistic management of waste generated during event

March-April 2024

PRE-ELECTION DISCUSSIONS AND ACTIVITIES

- Orientation of the holistic waste management to the officers and the associated local SHGs, conducted virtually and in-person a day before event
- Assist in selecting holistic options like biodegradable leaf plates, reusable glasses, compostable decoration material, printing material etc.
- In person orientation sessions with the zero waste officers, sanitation workers and volunteers were conducted along with defining everyone's roles and responsibility to execute the plan within timelines.
- Final Reece before the EVM machine distribution day to check arrangements and clean up of area
- Coordination with the appointed local vendors to ensure that all the ordered materials are available one day before.
- Coordination with the painters and printers to prepare posters and signages and ensuring it will be printed on reusable cotton cloth banners
- Briefing to teams regarding specific timings to follow on event days
- Pre-event clean up at the DCRC venue one day before to ensure all legacy waste is clear and venue is clean
- Arranging a zero waste eco store in the venue-food park area to spread the usage of environment friendly products amongst the citizens and officers

March-April 2024

WASTE REDUCTION

- As observed in the past, DCRC venues generate a lot of single use plastic. Alternatives to this was identified and orders were placed with vendors for biodegradables and reusables.

- On-site infrastructure was setup for composting the biodegradables and for washing the reusables.

PROCESSING BIODEGRADABLE WASTE:

- Composting unit was designed adhering to our principles of :
  - Cost effectiveness.
  - Natural building materials.
  - Ease of use.
  - Very little maintenance.

PROCESSING NON-BIODEGRADABLE WASTE:

- Onsite Materials Recovery Facility was designed to:
  - Maximum recovery of recyclables.
  - Segregation chambers for each category of waste.
  - Comfortable workspace for the zero waste officers to segregate the waste.
  - Use of natural building materials to build the space.
  - Ease of access for vehicles to transport the waste further to TIEEDI.

EXECUTION PLAN

Team distribution:

- An experienced team of seven zero waste officers from TIEEDI were assigned operational roles to execute the project.
- Local volunteers were identified from the college NCC groups.
- Local municipality safai karmacharis were also onboarded.

Waste Generation Hotspots identified as follows:

a. Food park
b. Material recovery facility
c. Composting unit
d. Polling booth counters and material checking sheds

EXECUTION PLAN

Operational processes carried out as follows:

1. Source segregation:

Two bin system is implemented to segregate waste-at-source as biodegradables and non-biodegradables. Bin quantities calculated as per the waste projection.

2. Manpower Training

Online orientation was conducted before the event for the zero waste officers and onsite pre-event training was conducted for the volunteers and the *safai karmacharies.*

EXECUTION PLAN

Operational processes carried out are as follows:

3. Decentralized composting unit

Segregated biodegradable waste was composted in a simple and easy to use in-situ composting unit.

4. Materials Recovery Facility

Non-biodedgradable was further segregated into 22 further categories and tagged as recyclables and non-recylables.

EXECUTION PLAN

Operational processes carried out are as follows:

5. Sanitary Waste

Menstrual pads were collected in specially designed pouches and later sent to the PadCare processing facility in Pune, India.

POST-EVENT ACTIVITIES

1. Final segregation of collected materials.
2. Quality check and Waste audit.
3. Debriefing session with zero waste officers, SHG members, sanitation workers and NCC volunteers conducted to capture their experiences and learnings.

WASTE AUDIT

- The amount of waste generated (in kgs) of biodegradbales and non-biodegradables were captured during the waste audit.
- The non-biodegradables category was further split into 22 different categories and each categories waste output was captured in a detailed report.

IMPACT ASSESSMENT

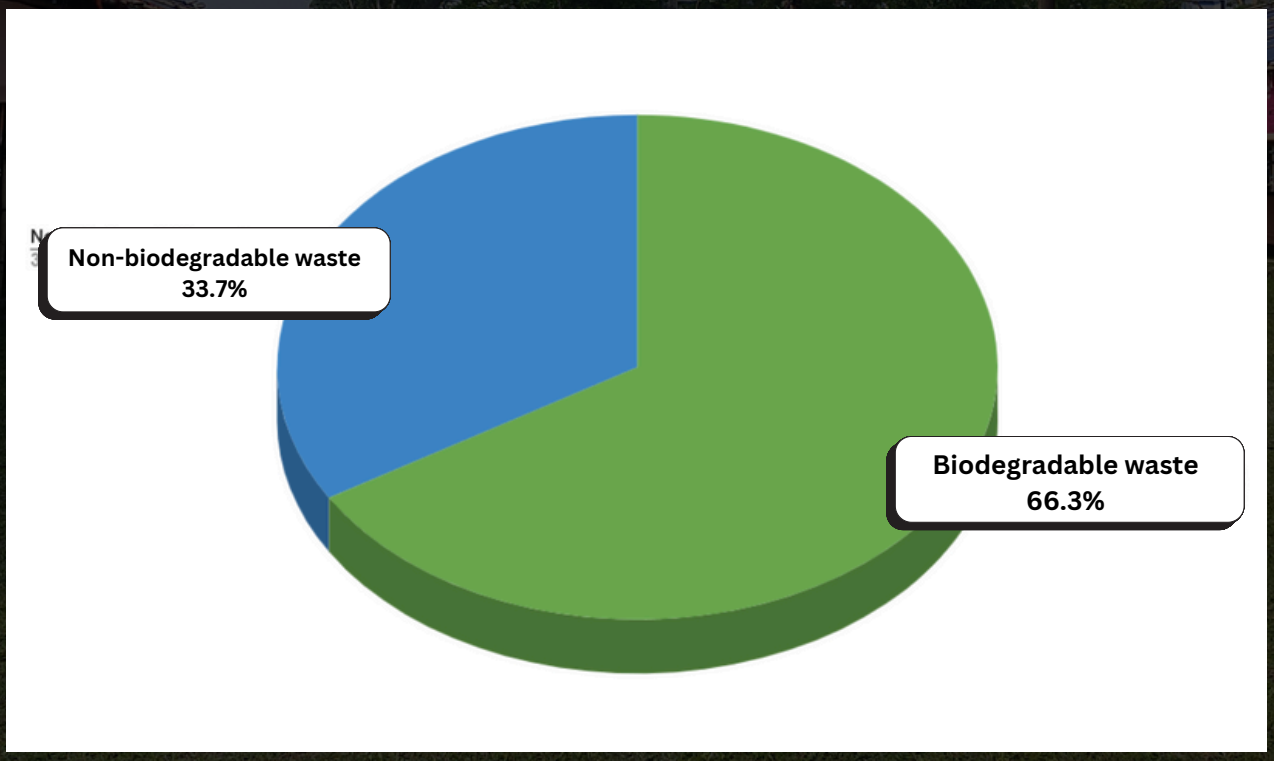
The right bins in the right place increases recovery rate.

BIODEGRADABLE WASTE COMPOSTED: 528.31 KGS

Which is equivalent to approximately 0.264 tons of CO2 equivalent (or 264.155 kg CO2 eq).

NON-BIODEGRADABLE WASTE SEGREGATED AND PROCESSED: 267.94 KGS

Which is equivalent to approximately 0.543 tons of CO2 equivalent (or 543.22 kg CO2 equivalent)

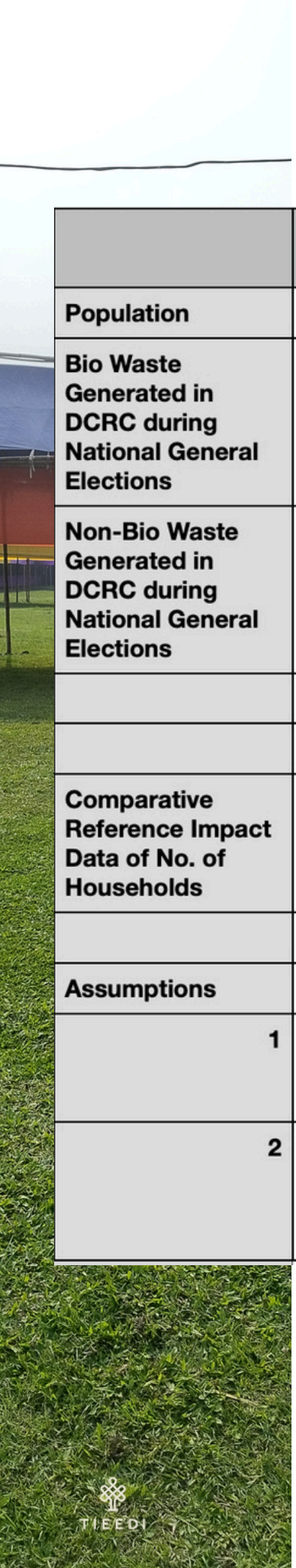


*** FIGURES ARRIVED WITH THE FORMULA:**
CO2 EQUIVALENT = WASTE QUANTITY (TONS) * EMISSION FACTOR (TONS CO2 EQUIVALENT/TON WASTE)

IMPACT ASSESSMENT

Impact review

- This event explored research findings and identified areas where there were opportunities for reducing the environmental impact of such kinds of events.
- It also identified the areas of action and opportunities that would deliver the impact at a larger scale.



KEY FINDINGS:

	Alipurduar	India (Projected Data)
Population	178000	1,44,05,17,794
Bio Waste Generated in DCRC during National General Elections	528.31 **(in kg)**	4275505 **(in kg)**
Non-Bio Waste Generated in DCRC during National General Elections	267.94 **(in kg)**	2168384 **(in kg)**
	796.25	6443889
Comparative Reference Impact Data of No. of Households	565	4573378
Assumptions		
1	The DCRC zero waste venue data correlates to the projection of the data for the entire country and is directly proportional to the population.	
2	Average Waste Generated in an Indian Household is 1.409 kgs. Reference link: https://www.epw.in/engage/article/institutional-framework-implementing-solid-waste-management-india-macro-analysis	

A. WASTE REDUCTION:

- Many **single use items** being used at such large scale events and therefore contribute to generation of waste in higher amount
- **Avoiding single use** materials and/or choosing reusables drastically reduce the volume of waste generated
- Cutlery is major concern at such large scale events, adopting **rent a cutlery** or **biodegradable material** can help to reduce single use

B. CONTAMINATION:

- Insufficient number of waste collection bins at locations cause contaminations and reduce the **rate of recovery**
- Segregation at source ensures the recyclability of materials and drastically decrease the pressure on the existing landfills.

C. KNOWLEDGE SHARING

- Successful zero waste project implementations like this offer **a real time insight** into tried and tested actions which can then be repeated.
- Surveys and execution of such events shows officers are motivated to prioritize **waste reduction** and manage **waste holistically.**
- This will be key in addressing knowledge gaps and **implementing the best practices.**

D. MATERIAL MANAGEMENT

- Until the best practices of zero waste is more mainstream, it is recommended to partner with environmental conservation organisations that specialize on zero waste.

- There needs to be an emphasis of implementing the process design as:
  - Reduce
  - Reuse
  - Recycle

(And in this particular order).

E. WASTE AUDIT

- Waste audit reports can be a great **strategic tool** that helps you identify the sources of waste that is being generated.
- It serves as a ready reckoner to plan for the next event.
- It helps to calculate the costs incurred and saved while executing a zero waste event.

TIEEDI

ACKNOWLEDGMENT

TIEEDI

Pure air, Fresh Water, Rich Soil for all beings!

This certificate is awarded to

District Election Officer & District Magistrate, Alipurduar

In grateful recognition

Of your invaluable participation and commitment to environmental sustainability and holistic waste management by making **DCRC a zero waste event venue** for the ***Parliamentary general elections 2024.***

Total Waste Diverted from the Landfills: 796 kgs.

Composted Biodegradable Waste: 528.31 kgs.

Processed Non-biodegradable Waste: 267.94 kgs.

Utsow Pradhan

Founding Gardener

Tieedi Permaculture Foundation