

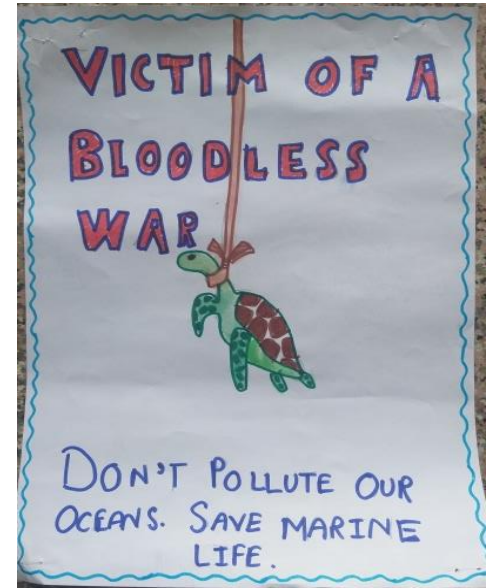
TERI's Implementation plan under the project entitled
“Promotion of Countermeasures Against Marine
Plastic Litter in Southeast Asia and India”

Prepared For



United Nations Environment Programme (UNEP)

Date: November 15, 2019





Who We Are

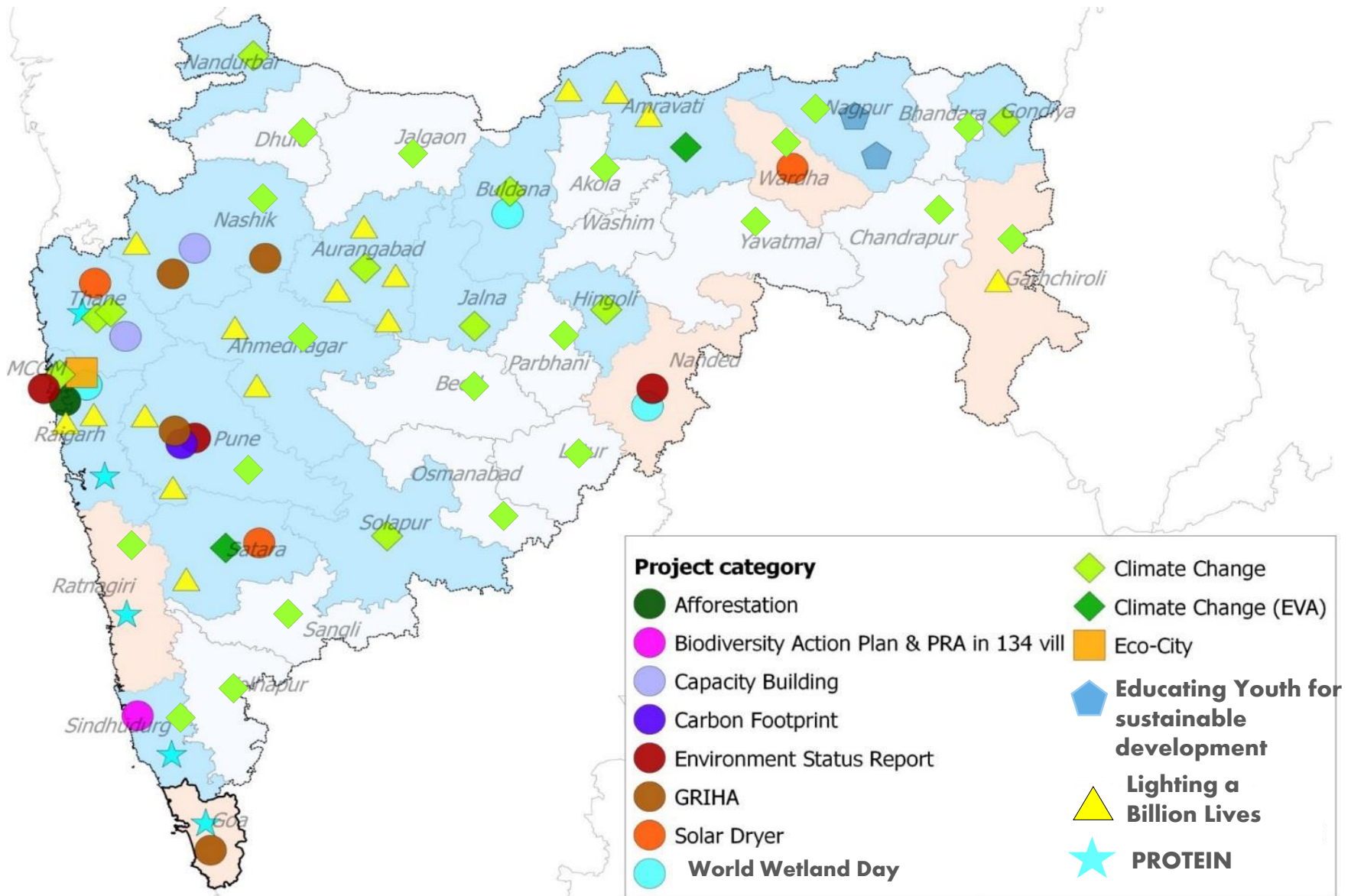
- Established in 1974
- India's Largest Independent Non-Profit research Institute
- Regional centers have been established in Bengaluru, Goa, Guwahati, Mumbai, and the Himalayas.

1,200 +

Staff Strength

- Engineering
- Architecture
- Economics
- Natural and social science
- Biotechnology
- Architecture
- Public policy
- Environment science

Outreach of TERI in Western region (Maharashtra & Goa)



TERI's Scope of Work

Location : Mumbai, Mumbai Metropolitan Region

1. Collaborate with local stakeholders for an on-ground campaign to reduce plastic pollution
2. Community engagement and outreach
3. Design and distribution of outreach material
4. River/coastal clean-up activities along with data collection
5. Collection of visual records - pre and post intervention



Proposed Activity 1

Multi Stakeholder Discussion Forum

Tentative : December 2019

Image Source :

https://www.google.com/search?q=STAKEHOLDER+ICON&tbm=isch&chips=q:stakeholder+icon,g_1:stakeholder+engagement:oMSK3vhvVbc%3D&rlz=1C1GIGM_enIN671IN671&hl=en-US&ved=2ahUKEwjHidHjxtzIAhVW33MBHfmzAIEQ4IYoBnoECAEQHw&biw=1349&bih=625#imgrc=qlgBZoUll1AMSM

Objectives

1)To bring together stakeholders from government, institutional and grassroots levels



2)To provide a forum to discuss about the on ground problems faced by grassroots stakeholders in terms of plastic waste



3)To provide awareness about policy measures related to plastic waste



4) To discuss about and encourage use of alternatives to plastics at individual and community level



5) To provide inputs to policy makers based on interaction with other stakeholders (academia, industries, corporates and other grass roots stakeholders)



Stakeholder Discussion

Tentative topics for discussion

Topic 1

Need of the event: Plastic pollution and its impacts on humans and environment

Topic 2

The plastic waste problem and Government Policies on Plastics in Maharashtra: Special emphasis on Mumbai

Topic 3

Ground realities of plastic pollution: experiences of fishermen, rag pickers, ferry boat drivers and other stakeholders

Topic 4

Affordable alternatives to plastics and doable actions for grass root level stakeholders to reduce plastic pollution

Expected outcomes

1) Interaction among different stakeholders

2) Opportunities for collaboration for future activities under the project

3) Outreach and awareness about the problem of plastic pollution and existing government policies

4) Awareness about affordable alternatives to plastics and ways to reduce and manage plastic in daily life



Mega Event

Proposed Activity 2

**Event on February 2, 2020
(World Wetlands Day)
@ Mumbai**

*To emphasize upon circularity of plastic through
innovation.*

Commitement for 5 saplings per person in MY family

Inbox

mascha sinha verma <mascha@rediffmail.com>

Mon, Nov 11, 3:41 PM (14 hours ago)

to me, Anupam, Anupam

Hi Anjali,

Thank you very much for the great opportunity on cleaning activity at Vashi Mini Sea Shore are on 02Nov2019.

It was a wonderful initiative and a great learning activity for the kids as well.

In continuation to this, our family is committed to raise 5 trees per person in our family. So we will be raising 20 saplings.

In future also, our family would like to be the part of such initiatives. Do let us know about upcoming programs. We would be happy to join.

Regards

Mascha:-)

9819103289.

Objectives

1. To design a large scale campaign (3.5 months)

- To demonstrate meaningful multiple reuse of non-recyclable plastic bottles
- To offset the carbon footprint of these bottles by raising native trees saplings in these bottles
- To build up events and target oriented activities to encourage stake holder participation

2. To organize an event on the occasion of World Wetlands Day (WWD), 2nd February 2020

- To hand over the nurtured saplings for afforestation to Government departments and other stakeholders
- To apply for ***entry to Limca Book of Records for reusing at least 50,000 plastic bottles to raise 50,000 thousand saplings*** and handing them over to stakeholders for afforestation



- **Developing Large Network of Stakeholders** thereby connecting to masses.
- Ideal opportunity **to draw attention** of government and policy makers
- Large scale **Capacity Building** through series of training/awareness activities





- Reaching and involving mass of people in **short project time span/deadline**
- **Influencing Human perception** in case of Waste segregation and religious sentiments.
- **Accessibility** such as in case of Clean up in Mangroves

Circularity



Sourcing and Significance

	Sourcing	Significance
 <p>PET Bottles (50 thousand)</p>	<ol style="list-style-type: none">1) Beach Clean up Activities.2) 5 bottles/Person (self procured)<ul style="list-style-type: none">• Academia• Universities• Banks• Corporates	<ol style="list-style-type: none">1. Demonstrating a novel reuse of collected waste plastic.2. Thereby reusing of bottles collected may reduce the marine litter.
 <p>Saplings (50 thousand)</p>	<p>Native trees : Banyan , Peepul , Neem , Ashoka, Tamarind.</p> <p>Identification of Trainers</p> <p>↓</p> <p>Training of Trainers (ToT) for Treasure Hunt.</p>	<p>Refer to Slide no. 13 & 14</p>
 <p>(Soil)</p>	<p>Local Nursery/Soil Providers and NMMC (Navi Mumbai Municipal Corporation), Coffee waste</p>	<p>Use of compost made up of municipal waste.</p>

Treasure Hunt for Native Trees:

A step to save the treasure being lost



Saplings of native trees growing along the road

- Numerous saplings germinate along the footpaths, in cracks of walls and other such places
- Lack of conducive environment- do not necessarily survive
- If nurtured and raised properly- will flourish well

The Treasure Hunt

- Involve students and other volunteers to collect this treasure being wasted
- Nurture it for a year
- Transplant them



Native Trees: Potential Unexplored



Banyan (*Ficus benghalensis*)
(Vad, Bargad)

- Medicinal properties: leaf, bark, seeds and fig cure disorders like diarrhea, polyuria, dental, diabetes and urine disorders
- Wood : making door panels, boxes
- Bark : making paper and ropes
- Figs: edible
- Habitat for numerous bird species
- Provides shade



Sacred Fig (*Ficus religiosa*)
(Peepal, Pimpal)

- Host for Lac Insects
- Fodder for goats and cattle
- Figs: edible
- Bark: extraction of reddish dye; cure inflammations and glandular swelling
- Medicinal uses: beneficial for eczema, asthma, blood purification, digestive ailments



Neem (*Azadirachta indica*)

- Medicinal uses: effective for skin infections, intestinal problems, diabetes, malaria,
- Neem oil: pesticide for grain storage
- Twigs: used for brushing teeth
- Bark fiber: rope making
- Requires less water for growth
- Provides shade

Expected Outcomes

Community
engagement

Establishing linkages
with stakeholders

Awareness among
stakeholders about
marine plastic
pollution, its impacts
and solutions

Emphasis on
responsible disposal
and reuse of plastic
bottles and plastic
waste at large

TERI's experience- LIMCA Book of Records- 2011

Limca Book of Records

National Record 2011

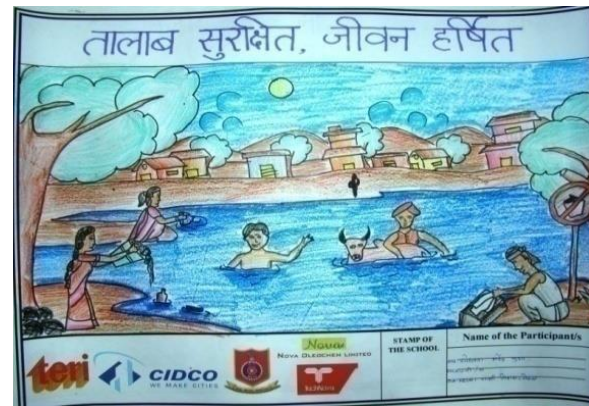
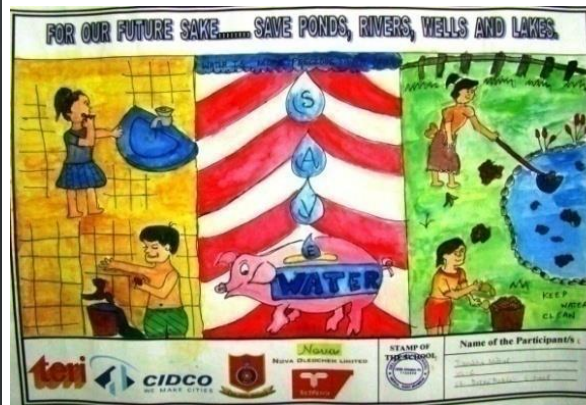
On Feb 2, 2010, World Wetlands Day, The Energy and Resources Institute (TERI) in collaboration with the City & Industrial Development Corporation (CIDCO) and Dept of Transport, Govt of Maharashtra disseminated 9214 handmade paintings of A2 size on the theme of wetland and water management by pasting them on interstate vehicles like buses, trucks and tempos in a record time of 4 hr 51 min.

More than 10,000 students from Navi Mumbai helped in preparing the paintings. Each sheet had catchy slogans in one of the three languages-Marathi, Hindi and English. The first poster was stuck at 9:00 am at the Vashi toll plaza, by G.S Gill, VC and MD, CIDCO. All paintings were dispatched to five toll plazas of the city for dissemination.

Vijaya Ghose

Vijaya Ghose
Editor, Limca Book of Records

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Record of Pasting of **9214** handmade posters (A2 size) on Wetland conservation in record time of **4 hour 51 mins** in collaboration with Transport Department, GoM



Activity 3

PERCEPTION SURVEY

Region

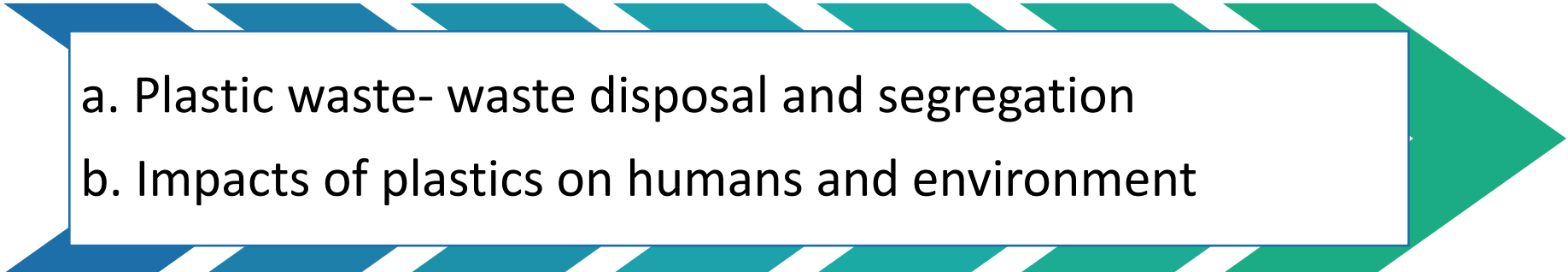
Mumbai Region

Target Location:

24 Municipal Wards (Brihanmumbai Municipal Corporation)

Objectives

1) To assess the perception of local community about:

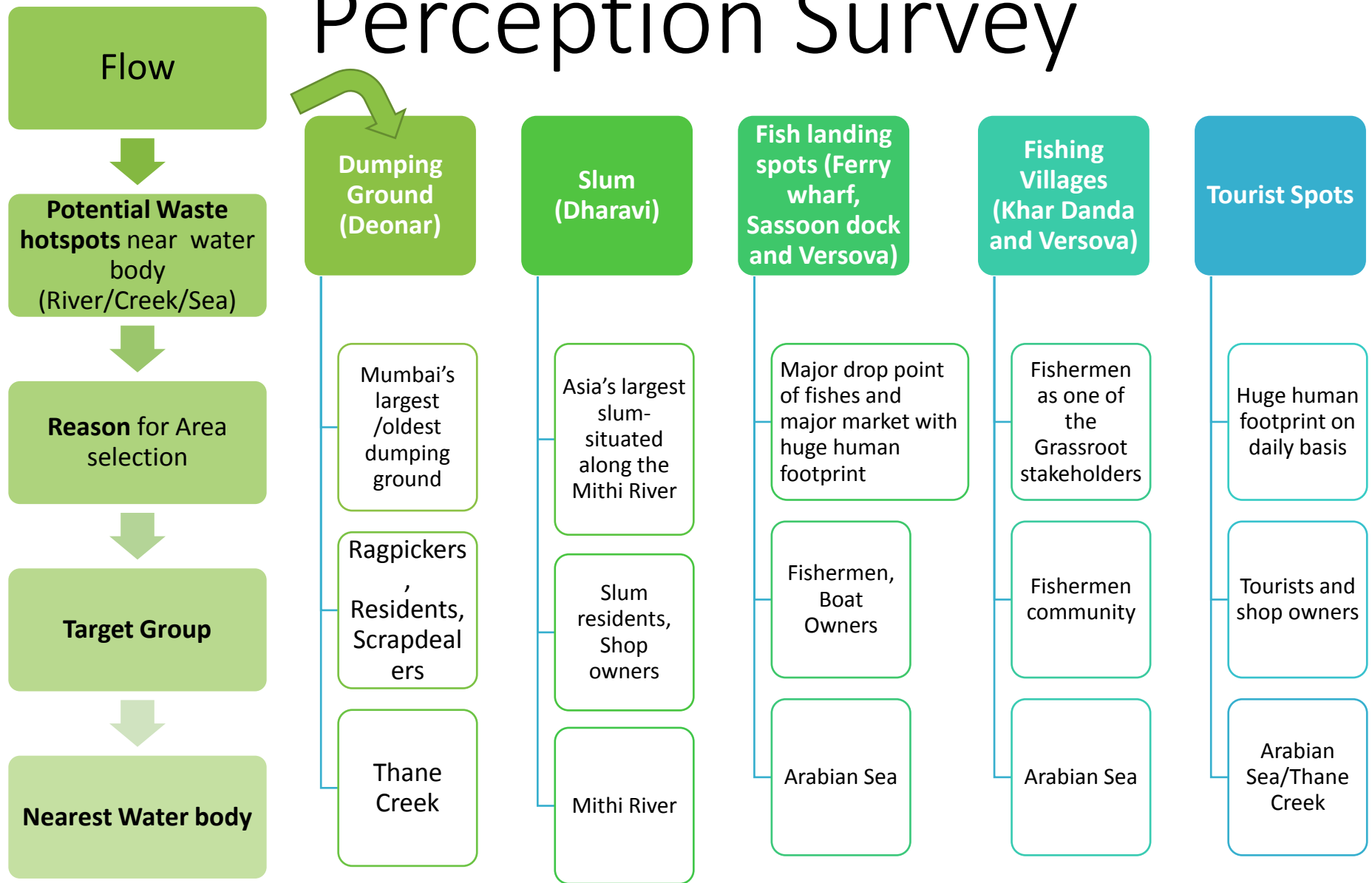
- 
- a. Plastic waste- waste disposal and segregation
 - b. Impacts of plastics on humans and environment

2) To identify major sources and hotspots of plastic waste pollution

3) To assess the perception towards alternatives to plastic-awareness, willingness and actual use

4) To suggest policy interventions based on survey findings

Perception Survey



To maximize the extent and impact of awareness, mix series of outreach activities such as Rally/Skit/Outreach Materials dissemination/Workshops can be adopted in these areas.

Outcomes

Extent of
Household plastic
generation

Major type of
plastic used by
local citizens

Disposal
mechanism

Percentage of
Waste
Segregation

Citizen's
Sensitivity about
plastic waste issue

Extent of use of
plastic
alternatives

CLEAN UP ACTIVITIES

Pilot Scale : Clean up drive – Vashi , Navi Mumbai , India

2nd November 2019



Number of bags collected : 17 Bags

Total WASTE Collected : 281kg

Clean up drive – Vashi , Navi Mumbai , India (2nd November 2019)



Mangroves

Vashi Creek

● Collection Points



Waste Collection



Glass waste



Metal waste



Plastic bottles



Styrofoam



Fabric



Other plastic



Floral offerings



Paper & Cardboard



Multilayer packaging plastic waste



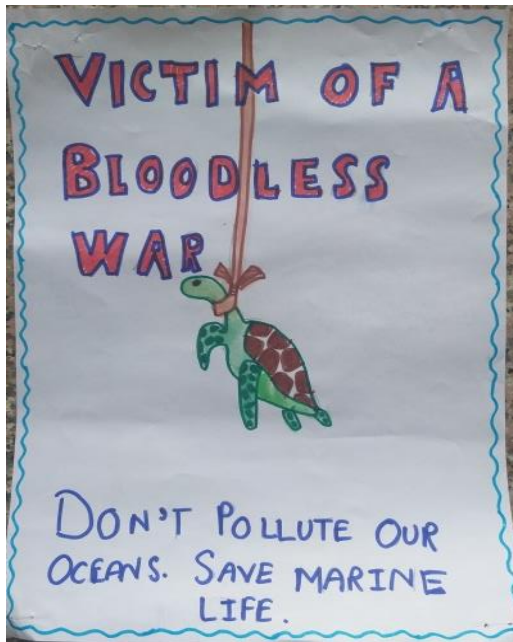
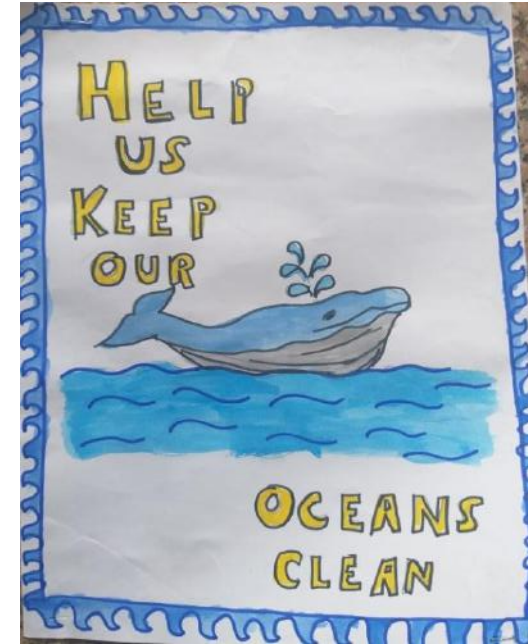
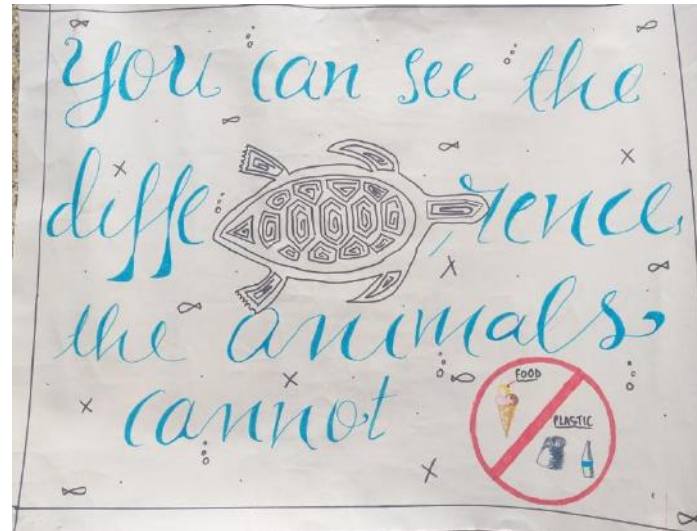
Footwear

SEGREGRATION

DISPOSAL



OUTREACH MATERIAL



Hand made drawings made by *Participants (School students)* who had attended the clean up activity

**Key Observations noted during Pilot scale clean-up activity at Sagar Vihar
(02.11.2019)**

No.	Observations	Recommendation
1	Accessibility in Mangrove areas	Line Transects of specific size for ex. (2 x 2 meter) can be adopted
2	High amount of organic/biodegradable waste	Targeting more on non-biodegradable waste such as Plastic in future activities with application of transect method for better clarity in data collection in mangroves
3	Damaged waste collection bags	<ul style="list-style-type: none">• Plastic bags with high thickness must be used for waste collection.• Carry Additional Plastic bags in spare.• Glass waste can be collected separately in metal container.
4	Waste Segregation from all bags : Time consuming and not feasible	Specific number of collection bags can be segregated systematically instead of all bags. Sample collection method could be adopted

IMPLEMENTATION PLAN

PERT CHART

Important Links

Websites

- TERI website <https://www.teriin.org/>
- TERI'S Nutrition Security website <https://www.teriin.org/projects/nutrition-security/>
- In the Pipeline: Navi Mumbai Eco-City Website

Short Films on Youtube

- TERI: Creating innovative solutions for a sustainable future
<https://www.youtube.com/watch?v=bXkEwhKJBfM>
- Children's Films (23 Videos)
<https://www.youtube.com/playlist?list=PLA03z8v5VgAEENzcDCVpZ0pQ9MvH03UrJ>
- EduGreen (32 videos)
https://www.youtube.com/playlist?list=PLA03z8v5VgAEN5_PGUQAdhH7iTklU4C7A
- Overcoming Malnutrition : A Sustainable Model
<https://www.youtube.com/watch?v=-EX5jEirQBc>



Thank You

<https://www.teriin.org/>



ENERGY



AGRICULTURE



ENVIRONMENT



HABITAT



RESOURCE
SECURITY



CLIMATE



HEALTH
& NUTRITION