



**.SORT**  
— करो —

**Don't Waste  
Your Waste !**

# ABOUT INDIA 2022

India2022 is a coalition of global and Indian businesses, committed to creating a new model of growth in India by 2022, the 75<sup>th</sup> year of India's independence. The coalition launched in March 2017 With the support Of its founding partners — Hindalco, an Aditya Birla Group Company; Baker Hughes, a GE company (BHGE); Cjient; Hindustan Unilever Limited, Shell and TechnipFMC. The then president of India, Shri Pranab Mukherjee. praised this initiative as "the need of the hour" Since then new partners - Tata Trusts, State Bank of India and WPP - have also joined the coalition, which aims to leverage the power of collaboration to unlock a new kind of growth in India

## PARTNERS

### FOUNDING PARTNERS



*Hindustan Unilever Limited*



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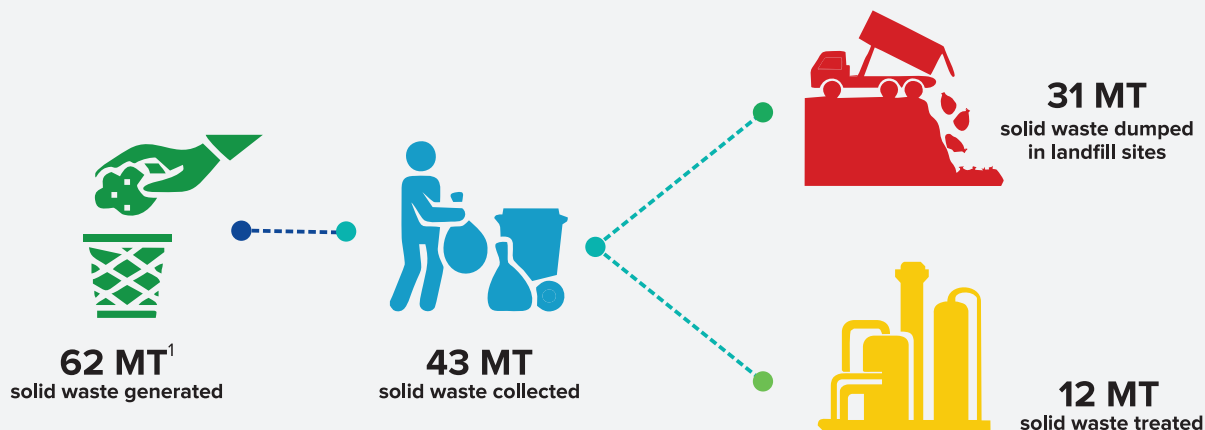
### ON-GROUND PARTNERS



# How many of us think twice before throwing trash in the waste bin

This seemingly trivial act can collectively produce enormous lasting consequences.

## India is among the top solid waste generators in the world



\*MT: Million tonnes per year

Out of the total waste generated, only about 75–80% of the waste gets collected and only 22–28% of this waste processed and treated. It is no news that this has an irreversible impact not only on the environment and economy, but also every individual.

## SEGREGATION AS A SOLUTION

### Citizens hold the key to achieving circularity

Much of the waste being sent to landfills can be put to good use via recycling and composting, thus achieving circularity across the value chain. While there are recycling and other end of life solutions in the market, plastics and other materials continue to clog our drains, rivers and oceans **because they are not disposed appropriately and thus cannot be recycled/composted.**

### Segregation of waste at source is 75 per cent of the battle won

We need to start at the beginning - at the point of waste generation. It has been identified time and again that waste segregation is the key to solving the waste crisis. Not only does it ensure maximum value recovery but also reduces the cost of recycling and overall waste disposal. Proper segregation of waste thus leads to a “circular economy” creating green jobs, reducing consumption of virgin resources and promoting innovations. No doubt has been noted that the cities that have been segregating their waste most efficiently have been able to effectively process and treat it.

## SORT Karo

SORT Karo programme was launched on 05th June 2019 to take waste segregation to all residents and communities in Mumbai’s Dahisar and Borivali localities. It is enabled by Hindustan Unilever Limited, through the India2022 coalition, and led by Xynteo. SORT Karo is creating awareness about waste segregation, helping households manage their waste responsibly and also monitoring the progress made by residents. SORT Karo is being implemented by RaddiConnect and supported by the Solid Waste Management department of the Municipal Corporation of Greater Mumbai in R-North ward.



#### LOCATION

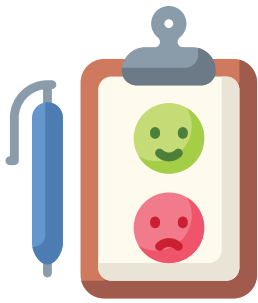
R North Ward,  
Dahisar West,  
Mumbai



#### TARGET AUDIENCE

~2000 Households

# SORT Karo Model



## Macro & Micro Surveys

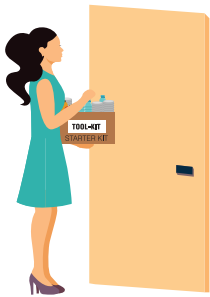
**Macro survey** undertaken to understand infrastructure of waste collection & storage and current waste collection practices in housing societies.

**Micro Survey** was undertaken to understand % waste segregation.



## Change in daily operations

Safai Saathi's in each building being trained on waste segregation and waste collection & storage habits. Safai Sathi's provided with basic PPE's (gloves and masks) and dry & reject waste collection bags for collection. 3 bins for Wet, Dry and Reject waste has been set-up in every housing society.



## Door-to-door Awareness

The SORT karo team undertook door-to-door awareness in all households. By which the team explained residents about 3-way segregation and infrastructure change in waste collection.

The SORT Karo team distributed a trifold, segregation chart and 2 bins (for dry & reject waste).



## Continuous Engagement

SORT Karo team has kept continuous engagement with residents via social media, posters, messages over entire project duration.



## Periodic Audits

SORT Karo team alongwith MCGM officials kept undertaking continuous audits of waste segregation and collection.

If found guilty MCGM sent notices to housing societies and after 2 warnings penalty was applied.



## Streamlined pickups

The dry waste collection pickups was streamlined 2 times per week and upon request.

# SURVEY UNDERTAKEN

Surveys were conducted twice as – Baseline and Endline - with a gap of 2-3 months starting in the last week of May 2019:



## Quantitative Analysis

In every society, at least 2 micro and macro survey were conducted, one before and other after the interventions.

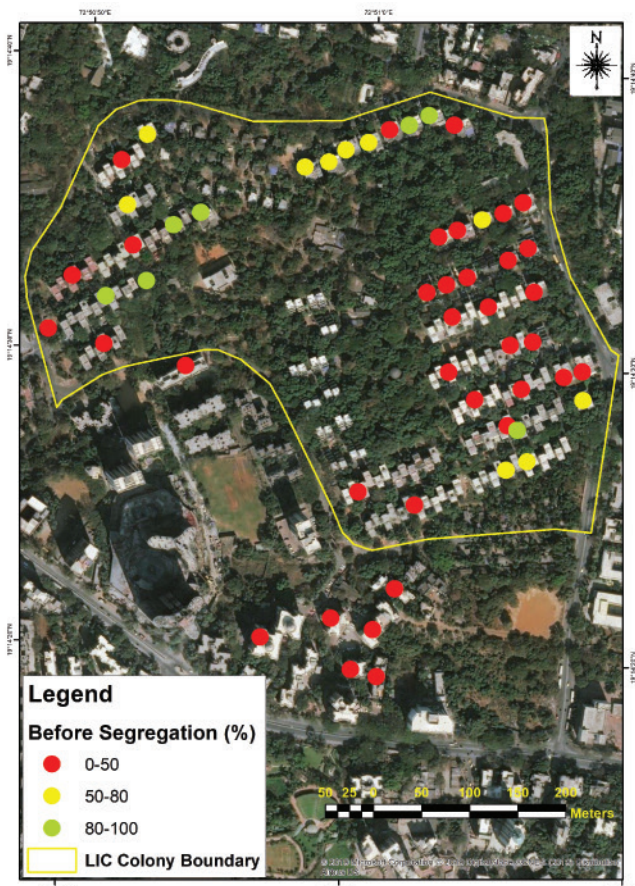
### Micro survey:

The micro survey entailed going door to door with the collection staff/safai saathi of the society and taking note of whether people are giving segregated waste or not.

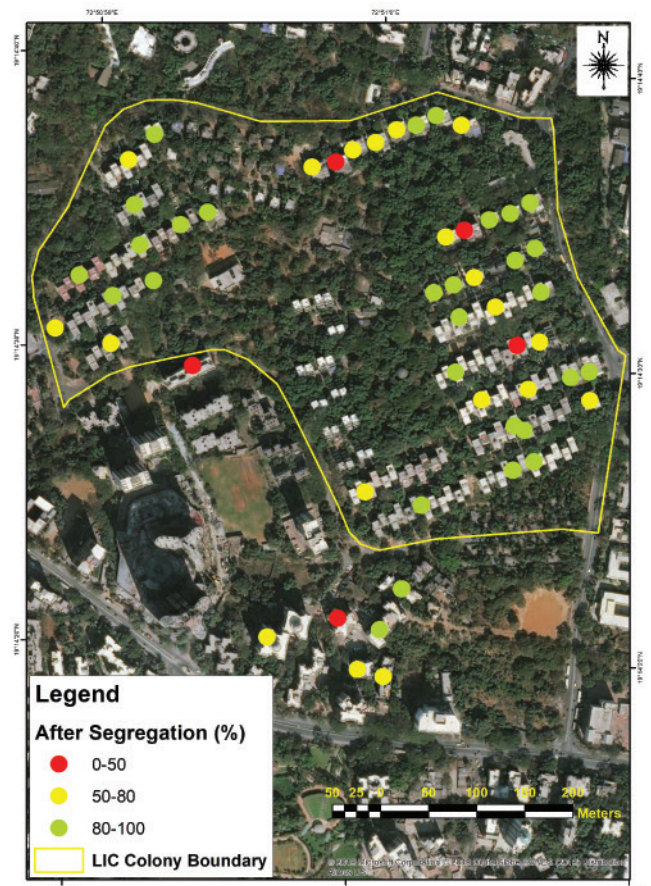
### Macro survey:

The macro survey was conducted along with the micro survey and was focused on collection and storage infrastructure in societies along with details of Safai Saathis.



**JUNE '19**



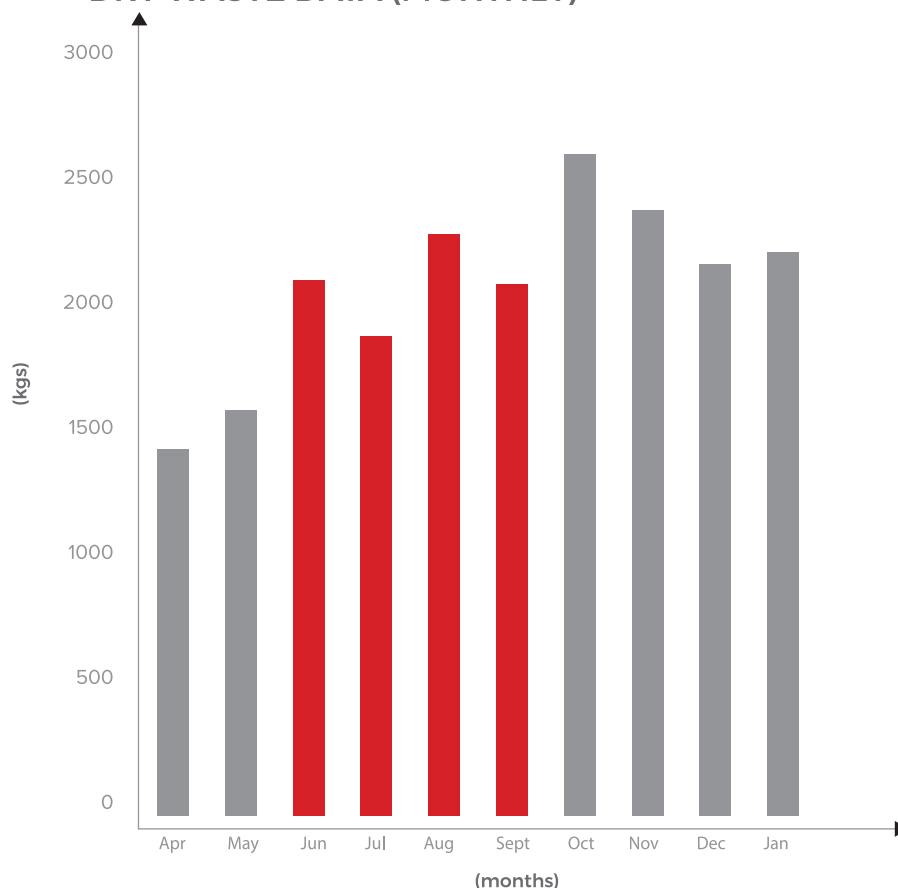
**SEPT '19**



# BEFORE - AFTER SURVEY RESULTS

	Before	After
 <p>Segregation at source</p>	Less than <b>32%</b> were segregating two ways	More than <b>79%</b> started segregating 3 ways
 <p>Segregated Door to Door Collection</p>	Only <b>29%</b> of the safai saathis were carrying separate bags for dry waste	<b>97%</b> of safai saathis started carrying 1 bin, at least, 1 bag. Rest started self drop system.
 <p>3 Community bins for segregated storage</p>	Only <b>46%</b> of the buildings had minimum required storage facility	<b>100%</b> buildings later had minimum required storage infrastructure
 <p>Dry waste collection from societies</p>	Poor quality dry waste was being collected from only <b>15 out of 46</b> buildings	Good quality dry waste is now being picked up from <b>43 out of 46</b> buildings
 <p>Dry recyclables diverted from landfills towards something good</p>	Approximately <b>180 kgs</b> per week was being collected earlier	Approximately <b>480 kgs</b> per week has started coming in now

**DRY WASTE DATA (MONTHLY)**



# SURVEY UNDERTAKEN



## Qualitative Analysis

### Knowledge, Attitude, and Practice (KAP) :

A survey was conducted with residents of LIC Colony during door to door outreach. During baseline total of 634 responses were collected. A total of 450 responses were collected revisiting the same households during the endline.

#### Post Intervention:

83% were confident about segregating their waste into wet, dry and reject bins.

#### Attitudes toward waste segregation

- (1) 90% disagree with “garbage problem can only be solved by the government”
- (2) 80% disagree with “burning is the solution to dispose of garbage”
- (3) 56% believed more than half of the waste they produce can be reclaimed.
- (4) Most identified benefits of waste segregation were:

Benefit	Percentage of people who agreed
Cleaner air to breathe in	81%
Fewer diseases	68%
Less waste lying around	52%
Less plastic in food	28%
Animals don't die	12%

#### Barriers to change:

According to respondents, the problem lies with the municipal corporation that sends only one truck and safai saathis who mix it during collection. 90% of respondents stated during the baseline survey that all their waste ended in landfills. Post-intervention there was a 30% dip in people who were sure it landed in landfills.

# INTERVENTIONS

## Waste infrastructure upgrade

Waste infrastructure upgrade comprises of storage bins for different types of waste, storage location for the bins within a housing society, adequate collection tools/methods provided to safai saathi's and lastly every stakeholder is aware of all this.

The waste infrastructure for a segregating society requires, at least, a certain minimum set up for segregated waste collection bins (3 type of bins), waste storage location, timely waste collection to come into existence and sustain.

## Our intervention

1. After identification of system gaps during our surveys, we requested bins from MCGM and local corporator office; which they obliged and provided.
2. We used color-coded vinyl stickers to distinguish 3 types of bins for wet, dry & reject waste
3. We provided at least 1 bin and 2 gunni bags (for dry & reject waste) for waste collection
4. Once everything was in place, we ensured the changes are communicated to all stakeholders.







## INTERVENTIONS

### Engagement with Safai Saathi's

The safai saathi's are the people hired by local housing society towards door-to-door collection waste and society cleanup activities. These people are paid in cash on monthly payment basis, generally with no document to prove that they have been hired by the society for the job. These safai saathi's crucially stand between households and the MCGM waste collection and transportation. However, given the informal economy nature of their work and lack of awareness and training, they form a very weak connection point. Also, awareness becomes a futile exercise if household segregates and they do not collect or store separately at the society level which hampers overall waste collection.

### Our intervention

1. For the sessions, safai saathi's were initially invited in groups of 6-10 people for a session wherein they were also given gloves, masks, and gunny bags to use for collection apart from general training on waste management.
2. Safai saathis were warmed up to the idea of 3-way segregation using games, discussions on the larger problem of segregation and how it affects them even more personally.
3. Safai saathi's are the first ones who have reach to segregated dry waste. Selling these recyclable dry waste (glass, metal, paper, plastic bottles, etc.) forms a major part of their earnings. Therefore, the receiving of segregated waste becomes appealing to them.

# INTERVENTIONS

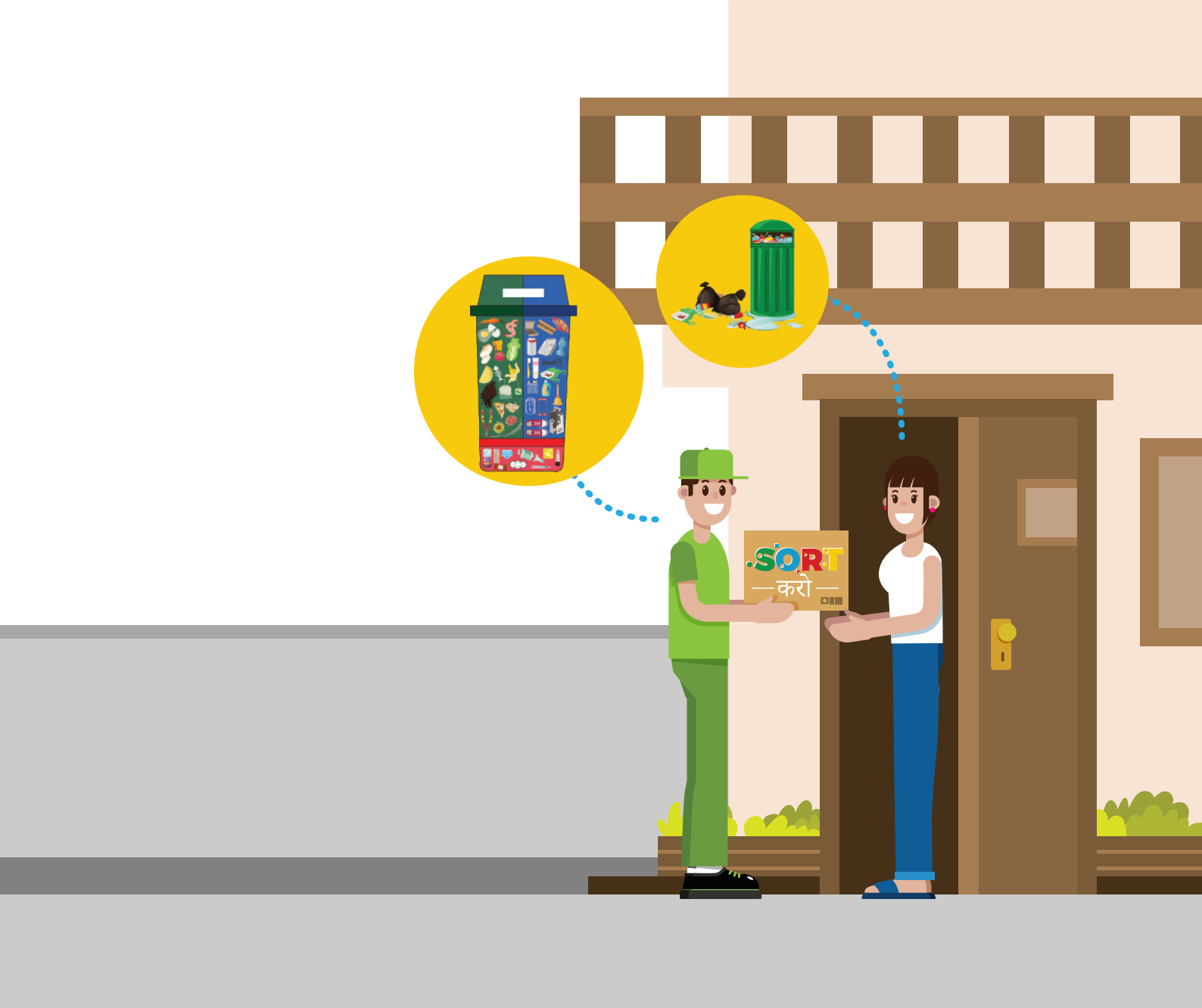
## Community engagement

Community engagement holds important piece in overall success of project, as they hold the key towards showing overall results.

## Our intervention

1. We held a launch event on World Environment Day (5<sup>th</sup> June), in which we undertook briefing sessions with residents and provided generic idea of project interventions.
2. Students from Skilllabs performed a skit (based on waste segregation) in common community gathering areas.
3. Undertook briefing sessions with community during their common gathering times and played waste segregation games with residents.





## INTERVENTIONS

### Door to door awareness

We opted with door-to-door awareness methodology for communicating the message to residents alongside distribution of segregation kit and separate bins.

### Our intervention

1. Prior undertaking to door-to-door awareness, official notice from association had gone out and communication of project kick-off sent to all residents
2. We undertook door-to-door sessions with all residents comprise of project update, waste management best practices, how to segregate waste, common mistakes, etc.
3. We distributed a 2-pager trifold on project and segregation chare to residents

# INTERVENTIONS

## Distribution of 2 bins to all residents.

We opted with door-to-door awareness methodology for communicating the message to residents alongside distribution of segregation kit and separate bins.

## Our intervention

1. We distributed 2 color bins to all residents (Blue- for dry waste and Red- for reject waste)
2. The main reason to distribute bins, to make sure there are no lapses in waste segregation at source among residents
3. Also, the color coded bins helps safai saathi's for segregated waste collection daily basis





## INTERVENTIONS

### Digital communication to residents

Periodic communication through active digital channels served as catalyst for fast transformation in LIC colony.

### Our intervention

1. We created community WhatsApp groups alongwith used old groups for continuous engagement within residents.
2. Constantly digital messages were being circulated with people through WhatsApp groups.
3. Timely, notices, progress report and challenges communicated regularly to key stakeholders
4. The platform also acted as a grievances portal where people could complain if there were any issues in waste management supply chain.

# KEY OBSERVATIONS

## Residents

1. People are most concerned about whether or not the waste that they segregate will be collected by the authorities
2. Most residents did not know about rinsing dry waste packets before throwing them into the dry bin.
3. A common reply for residents was that segregation is “ too time consuming.” It is therefore important to appeal to the community repeatedly and communicate the impact their actions can have on the environment so that they are pushed to act.

## Safai Saathis

1. Selling recyclables formed a considerable part of the Safai Saathis' income given the salaries drawn for the door to door collection from societies is low.
2. The sessions focused on how segregation correlates to an increase in income for them besides better working conditions in terms of cleanliness and the respect they receive.
3. They started collecting in a segregated fashion alongwith separated storage of waste. The transition, however, happened over days with multiple follow-ups.

## Housing Society Level

1. Continuous monitoring is required by societies. Committee members are the best to initiate monitoring within their respective buildings.
2. However, societies didn't take the lead by themselves, it required periodic checks from the project team.
3. A good push came after they received a notice from authorities like MCGM when they started making an effort on an immediate basis.

## Dry Waste Collection Centre (DWCC):

1. The DWCC reported a considerable improvement in not just quantity but also the quality of the dry waste received by them.
2. The improvement in quality can also be attributed to the 3-way segregation intervention
3. Regular pick-up of dry waste from housing societies helped in the cause.
4. The Dry Waste Vehicle needs to have proper branding and signage for people to know they exist

# CHALLENGES

## Infrastructure

Securing minimum required infrastructure was not in the hands of the SORT karo team but had to be released through MCGM or by the local corporator's office. This is critical because the physical infrastructure not only ensures people continue to segregate but also makes the process of waste collection smooth.

There needs to be a provision in housing society's budget towards arranging basic infrastructure for waste collection and storage within their premises. This includes big storage bins, cleaning infrastructure, PPEs for safai saathi's, bags, etc.

## Residents

1. Infrastructure modifications are as important as awareness building.
2. People do struggle with telling what will go where especially with mixed items.
3. People need to be taught 'how to throw waste efficiently'.
4. People require third party recognition that the waste infrastructure is working, with valid proof points.
5. Residents do not realize that segregation needs investment in-terms of requisite infrastructure in building and safai saathi trainings.

## MCGM and Dry waste collection

1. Dry waste van drivers are not familiar with the collection location and have to be guided to each society.
2. While officially the days are fixed for dry waste collection, the actual collection happens haphazardly; it needs day-to-day monitoring and periodic training of people collecting waste.
3. During the contract renewal period, the dry waste collection agency remained unavailable for over 15 days. There was a tremendous drop in segregation levels during that period.
4. There are glitches in coordination between DWCC and the collection vehicle contractor, which sometimes jeopardizes the smooth functioning of the whole collection system.

## Safai Saathis

1. There are no contracts with safai saathis at the building level, therefore their roles and responsibilities for waste management never communicated to them properly. This also makes societies reluctant towards providing minimum wages, basic insurance to workers and PPEs.
2. It is very hard to break their routine of collecting waste in one bin. Safai saathis have to be first convinced to start segregating separately. Left to societies, it will most likely get stuck on demand for more pay for more work required for segregated collection.
3. Due to the fact, their benefit is incremental and not tremendous in the system, their conviction remains low during the period of transition requiring multiple follow-ups.

# RECOMMENDATIONS

## a) Recommendations to MCGM

### i) Information Education and Communication (IEC) activities

1. MCGM needs to tweak their IEC activities towards 3-way waste segregation from current 2 way (Wet and Dry waste)
2. Instead of distributing one Green bin for waste segregation, MCGM can look into distribution of Blue bin (for dry waste) and Red bin (for reject waste)
3. IEC activities in the ward need to be strengthened through social media like WhatsApp, Instagram and Twitter for faster and effective communication
4. IEC activities need to focus on waste management infrastructure upgrade within communities and education of safai saathis
5. MCGM needs to make housing societies aware of incentives and penalties of non-compliance towards waste management
6. MCGM needs to undertake periodic audits within communities

### ii) Dry waste Collection:

1. Undertake regular training of dry waste collection vehicle staff for capacity building.
2. Dry waste collection system can be made efficient with coordination and tracking of dry waste pickups.
3. Contracts to be renewed well in time so that it doesn't disrupt the collection of dry waste management stakeholders
4. Efficient routing of trucks for dry waste collection alongside regular communication to residents about it.

### iii) Reject waste management

1. MCGM needs to give communities a basic definition of 'reject waste/household hazardous waste',
2. MCGM should put stringent guidelines for management of reject/household hazardous waste by households
3. As the reject/household hazardous waste couldn't be disposed in a landfill, there needs to be arrangement of pickup from DWCC for scientific disposal





# RECOMMENDATIONS

## b) Recommendations to Housing Societies

1. Housing societies need to take initiatives at their level towards waste management practices
2. Permanently incorporate the mandatory implementation of waste segregation by every household in the society in society guidelines and fine if they aren't, changing this to "Society guidelines should include waste segregation for every household and societies should levy a fine if the guideline is not followed."
3. The complaints should be taken to the right places, for example, when there is a problem with pick-ups, the helpline numbers can be called.
4. Housing societies need to make sure they have minimum infrastructure for collection and storage bins alongwith dedicated space within premises.
5. Give safai saathis the authority to not collect waste if it is not segregated properly.
6. Loop safai saathis in for monitoring purposes and incentivize this process.
7. During the periodic meetings the committee members can update residents about waste management.

## c) Recommendation to DWCC

1. DWCC needs to optimize dry waste collection pickups with given infrastructure limitations
2. DWCC can make efforts towards bringing more visibility in community
3. DWCC operator can open the centre to visiting students and community people towards making them aware of sorting and recycling efforts.
4. DWCC and MCGM needs to have a rhythm of engagement towards periodic monitoring and solving logistic challenges on ground.



# INTERPRETATION OF RESULTS

## The waste management system is stuck in a vicious circle of systems level inefficiencies.

At a project level, we were able to break that circle by getting each component to do their part and conveying the same to the others constantly.

Waste segregation, therefore, requires all the following components to be working with harmonious coordination. One component goes awry, there is a specific period for it to restore the system or the whole system crashes down. Any attempt, therefore, to take segregation onto a larger scale we have to keep these insights in mind. The approach has to be to break that circle that prevents each part in the following chain from doing its part with the least amount of intervention.



# ACKNOWLEDGMENT

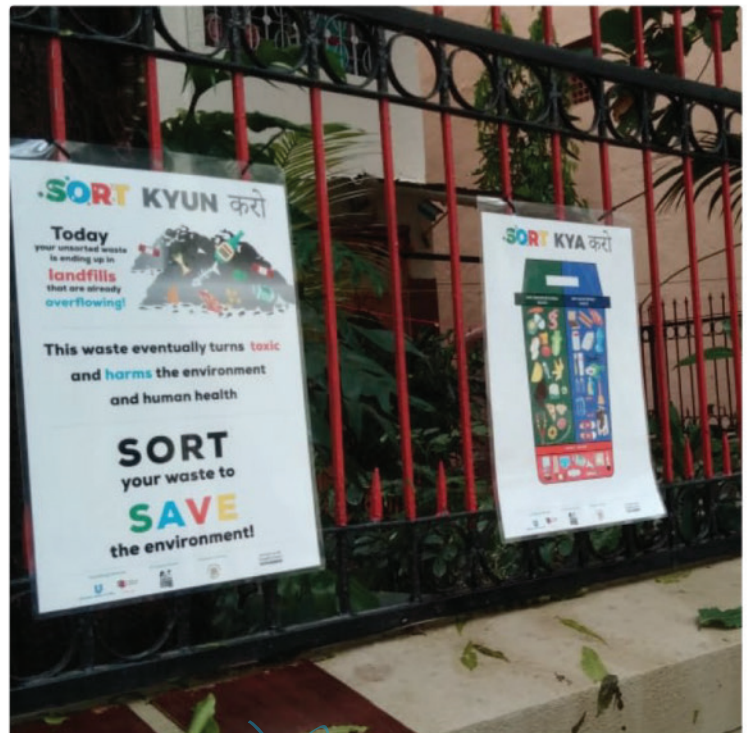
We sincerely appreciate the efforts taken by LIC Colony and other building society committees, residents and safai saathis towards segregating waste effectively. We thank them for being promoters of the Swachh Bharat Abhiyan.

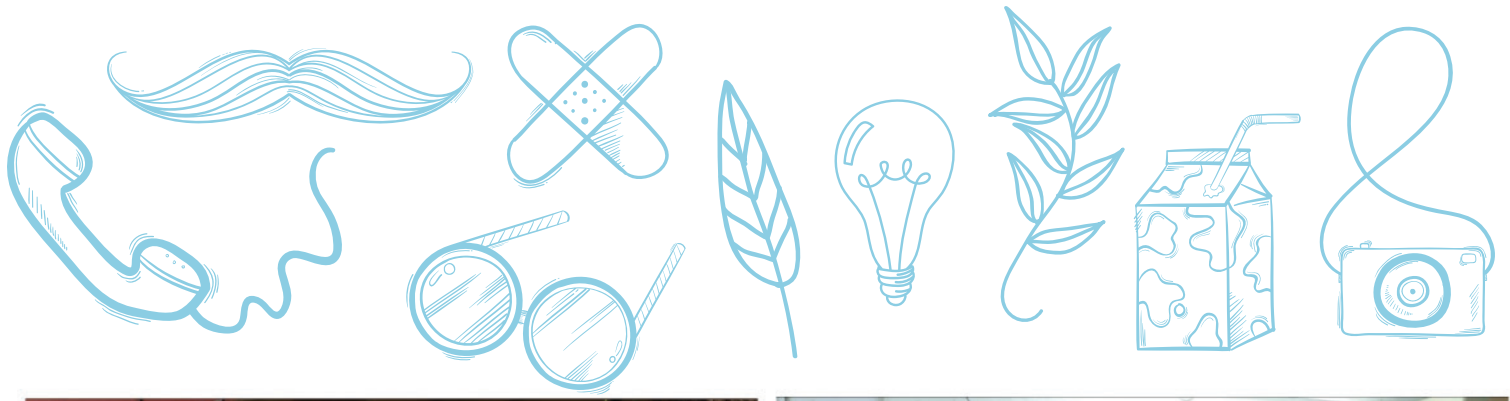
We would like to show our appreciation for the Solid Waste Management department of MCGM for all the support they have offered us. Thank you for your enthusiastic participation in the SORT karo project at your ward level.

We sincerely appreciate the effort and passion the RaddiConnect team put into implementing this project daily. Thank you again, for the successful delivery of the SORT Karo project.

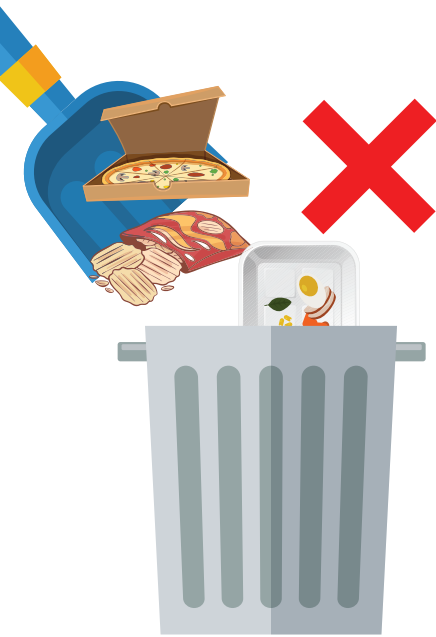
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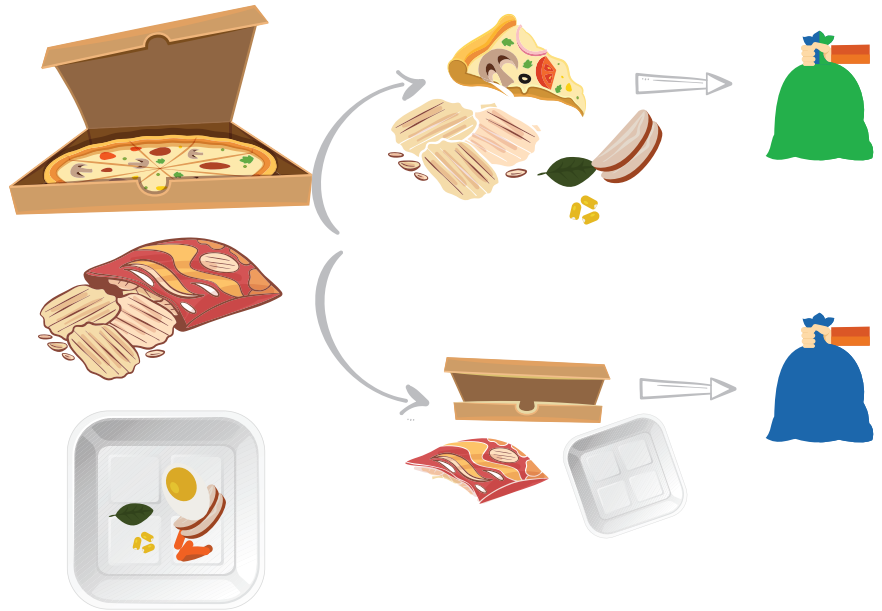




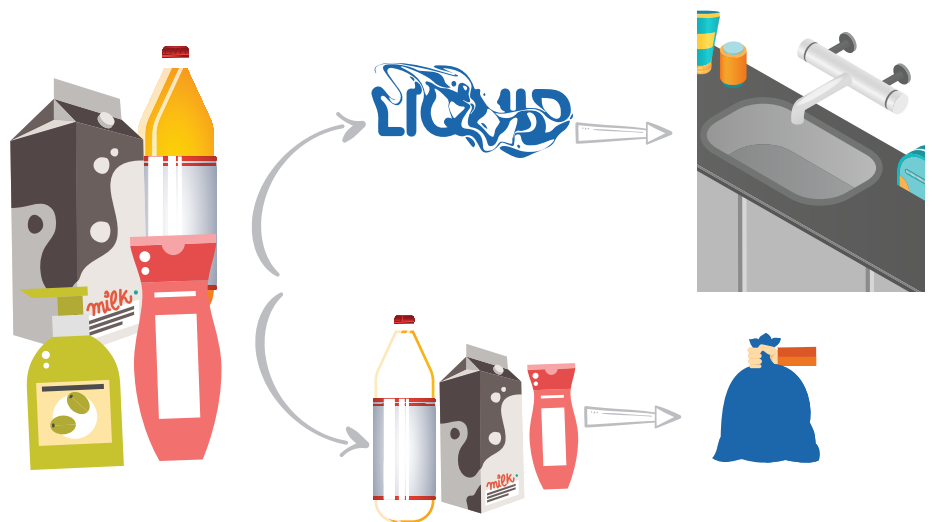
**Don't Waste  
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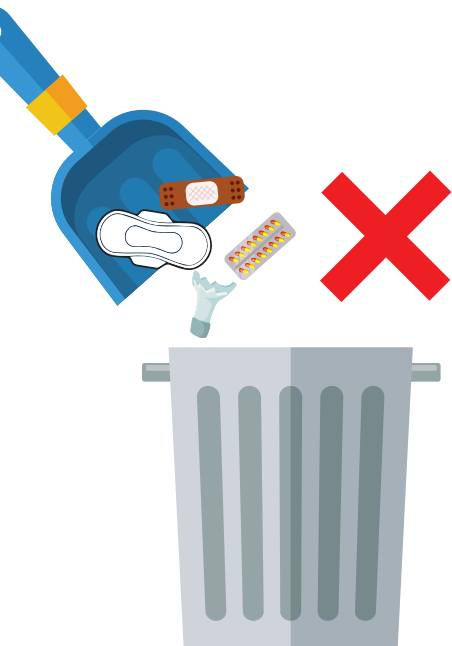
## WET & DRY WASTE



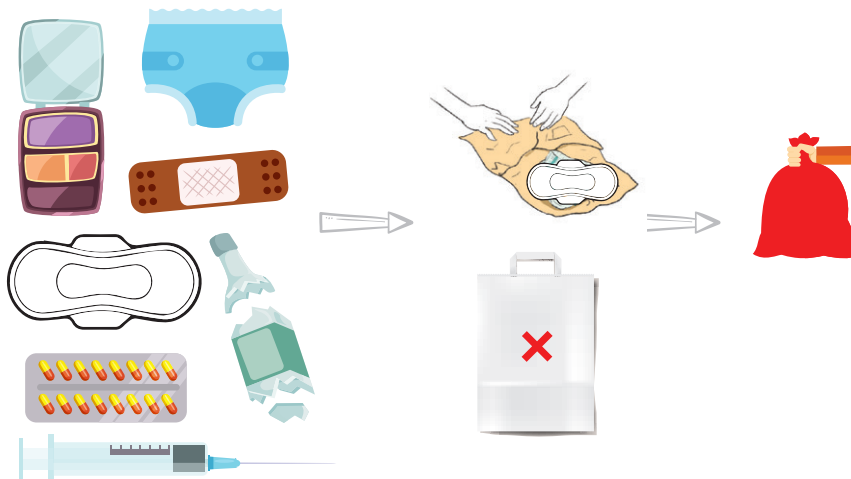
Leftover food should be thrown in wet waste bin and the contains, packets or boxes should be thrown in the dry waste bin



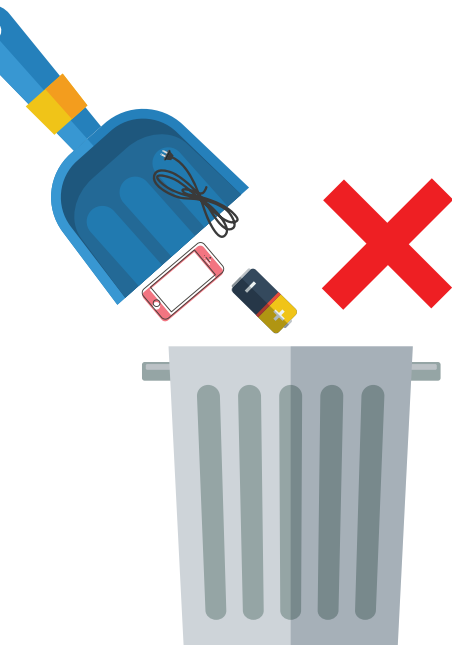
Leftover liquid in any container should be drained out in sink and the bottles, containers or tetra packs should be thrown in the dry waste bin



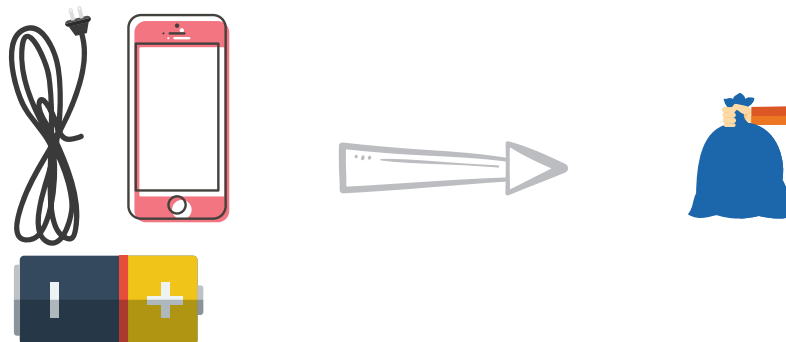
## REJECT WASTE



The correct way to dispose reject waste is to wrap it in newspaper or paper bag and throw it in separate reject garbage bin at home. This waste should be handed over to sweeper/waste collector separately or disposed in your building reject bin.



## ELECTRONIC WASTE



Throw the electronic waste in the dry waste bin



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FOUNDING PARTNERS



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