



STUDY ON MAKING MADRAS HIGH COURT CAMPUS AS SINGLE USE PLASTIC FREE



MARCH 2023

Executive Summary

The Government of Tamil Nadu in September 2018 ordered that all Government departments shall strictly implement the ban on “use and throwaway plastics” and send a compliance report on the same. Further to this, Court order of the High Court of Madras order dated 29.08.2022 instructed to adopt steps to declare the precincts of the Madras High Court as a plastic-free zone. In line with this, Tamil Nadu Pollution Control Board sent a team of officials to carry out a baseline study to understand the single use plastic consumption in High Court and to identify the sources of Single Use Plastics that are used in the court premises.

The overall plastic use in High Court and single use plastic use in the High Court premises are detailed out in the various sections of this report. It was observed during the study that disposable plastic use within the premises are generated from sources within the High Court as well as sources just outside the High Court. Sources within the High Court include the various canteens and shops that use single use disposable plastics, and plastics that reach High Court from outside are primarily composed of plastic carry bags that are brought into the high, mostly as part of the parcel packaging for food that visitors buy from restaurants and shops outside the some of the gates. Most of the resident lawyers are carrying their lunch and water bottles from home.

Based on various observations and consultations carried out during the visits, the estimates of total plastics used in the High Court is 8.58 Kgs per day, 67% of this plastic being contributed by sources within High Court. Of this total plastic use, the major banned Single Use Plastics include plastic spoons, wax coated paper cups and plastic carry bags and collectively sums to a daily consumption of 2.2 Kgs. Other disposable plastics that are used in High Court premises are majorly plastic packaging such as multi-layer plastic sachets, milk and curd packets and PET water bottles.

Towards the vision of a greener and cleaner Madras High Court, the study covered all single use type and disposable plastic use and waste generation within the court premises and puts forward suggestion to avoid use of banned single use plastics and better manage the overall plastic waste generation so as to avoid littering within court premises. The recommendations also cover various awareness and information dissemination methods and sustainable practices to promote general public & resident lawyers to limit use of plastics and shift to sustainable alternatives or practices.

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1 Study on making High Court Single Use Plastic free

1.1 Introduction

The Government of Tamil Nadu, in exercise of the powers conferred under Section 5 of the Environment (Protection) Act, 1986, notified a ban on manufacture, store, supply, transport, sale or distribution of certain use and throwaway plastics, and the said ban has been in effect since 01.01.2019. Vide G.O.(D) No.265 dated 20.09.2018, the Government also ordered that all Government departments shall strictly implement the ban on “use and throwaway plastics” and send a compliance report on the same.

The 14 items banned by the Tamil Nadu Government are:

- Food processing and packing plastic used in hotels.
- Plastic sheets used for table mats and tablecloths.
- Thermocol plates used for serving food.
- Plastic coated paper plates.
- Plastic bags used for gifting during special occasions.
- Plastic coated tumblers used in TASMACH, small vendors, serving coffee, tea, water on occasions.
- One-time usable plastic coffee and teacups used in shops and homes.
- Normal plastic made tumblers in commercial use.
- Thermocol tumblers and cups.
- Plastic coated paper bags which are used in shops for packing products for the buyers.
- Water packets selling by small vendors around Tamil Nadu.
- Plastic straws used for serving cold drinks, milkshakes in shops, theatres and hotels.
- Plastic carry bags used for everyday usage by people.
- Plastic printed flags in sale in shops.

The notification also prohibits manufacture, import, stocking, distribution, sale and use of plastic carry bags having thickness less than seventy-five microns with effect from 30th September 2021, and having thickness less than thickness of one hundred and twenty microns with effect from the 31st of December 2022.

Moreover, the following identified single use plastic items, which have low utility and high littering potential, have been prohibited by the Central Government, with effect from 1st July 2022, vide Plastic Waste Management Amendment Rules, 2021:

- Ear buds with plastic sticks, plastic sticks for balloons, plastic flags, candy sticks, ice- cream sticks, polystyrene [Thermocol] for decoration.
- Plates, cups, glasses, cutlery such as forks, spoons, knives, straw, trays, wrapping or packing films around sweet boxes, invitation cards, and cigarette packets, plastic or PVC banners less than 100 micron, stirrers.

Based on the Court order of the High Court of Madras order dated 29.08.2022 in review Application No.89 of 2019 of W.P. No. 34065 of 2018 which mentioned that steps shall be taken to declare the precincts of the Madras High Court as a plastic-free zone, and as per the instructions of Additional Chief Secretary to Government, Environment Climate Change and Forests Department, Tamil Nadu Pollution Control Board (TNPCB) initiated action to make the High Court, Madras premises Single Use Plastic (Single Use Plastic) free. In connection with this, a team of officials from TNPCB carried out a study in the High Court to understand the as-is situation with respect to single use plastic use within the court premises.

1.2 Objective of the study

The study was initiated as a first step to making Madras High Court Single Use Plastic free, and the objective of the study was to understand and assess the plastic consumption and plastic waste generation within High Court premises, awareness levels of people visiting the High Court including resident law officials, and the plastic waste management system followed within the High Court premises. Further to this, study aims to culminate in providing suggestions regarding the various means of making the High Court premises Single Use Plastic free.

1.3 Details of High Court premises

The High Court premises consists of multiple sections. These include the Main Building, Annexure Building, Law Chamber Block, Library Annexure, Record building, Museum and Auditorium, Additional Law Chamber, New Additional Law Chamber, and the Old Law Chamber.

There are more than 450 lawyers who permanently stay in the premises, and a floating population of between 10,000-15,000 lawyers who visit the premises when required. There are 4 lawyers' associations within the premises and 6 more associations outside. Additionally, there are 40 judges and 2500 staff members.

There are also 200 police staff, 50 fire staff, and 100 Public Works Department staff. The car parking has a capacity of 1200 cars, and the bike parking has a capacity of 3000 bikes.

There are 7 gates in the premises, namely the Judges gate, MBA gate, Aavin gate, Esplanade gate, Bar Counsel gate, South gate, and ADR gate. Out of these, only the Aavin gate and the Esplanade gates allow outside visitors.

1.4 Details of visit

As part of the study, the team from TNPCB visited the High Court premises from 10th to 15th February 2023. The team carried out consultations with key stakeholders to understand the various points within High Court such as canteens, stationery shops, etc. which could be selling plastic items within the premises, leading to generation of plastic waste. In addition, the various means by which plastics (especially Single Use Plastics) reach the premises from outside were also studied by making observations at the gates mostly used by public and recording the observations.

The team visited all the waste generation and collection points in the High Court premises and charted out the flow of waste within the premises. Plastic waste hotspots like the rear sides of buildings in the premises, the parking area, the generator area etc. were visited, and the inflow of disposable plastic through the gates of the premises was also observed and recorded.

1.5 Consultations conducted

During the visits, the team carried out surveys and consultations with the following stakeholders:

- a) Registrar (Administrator), High Court
- b) Section Officer, D Section, High Court
- c) Overseers, High Court
- d) 2 Canteens (Aavin canteen, Selvam canteen)
- e) 1 Law Association Xerox shop
- f) 2 teashops (Butterfly and Leo)
- g) 1 Lawyer Association Representative
- h) 5 Sanitary Workers in High Court team
- i) 2 Sanitary Workers in PWD team
- j) 20 Resident law officials and visitors to the High Court

1.6 Key observations

1.6.1 Sources of plastic in High Court

There are two canteens, one xerox shop and two teashops in the High Court premises selling and using plastic items such as plastic packaging and water bottles which contributes to overall plastic consumption in the High Court premises.

Among these, key types of disposable plastics that are commonly used include

- Plastic carry bags,
- Plastic water bottles,
- Non-woven bags,
- Tetra packs with plastic straws
- Milk/curd packets

There are multiple restaurants, tea shops, snack shops and flower sellers near the main gate & Esplanade gate selling plastic carry bags. Some of these plastic carry bags used to pack parcels are brought into the High Court, mainly during lunch hour.

Plastic consumption for court proceedings According to the sanitary workers, each court session has 1-2 people who bring disposable plastic bottles. There is one sanitary worker assigned for each meeting. And each judge is given a bottle of water during meetings, which comes up to 50-80 bottles per week.

1.6.2 Plastic waste management practices

a. Plastic waste segregation and collection:

- Currently there is no segregation of plastic waste and biodegradable waste in the premises. There are 45 sanitary workers appointed by the High Court. The City Civil Court, Family Court, Small Cases Court, Government Pleader Court and the Public Works Department (PWD) have separate teams of cleaners. These sanitary workers and cleaners collect waste from various smaller waste bins in the various buildings and canteens and drop the waste into the larger bins placed by GCC within the High Court premises.
- Garbage bins of multiple colours are kept all across the premises, with some courts having their own garbage bins. Some have signage mentioning biodegradable and non-biodegradable waste, but the litter is unsegregated. There is a lot of litter around the garbage bins as well. There are 21 garbage bins placed across the premises, and 10-15 bins get filled on a daily basis.
- Greater Chennai Corporation, which is the agency responsible for collection of waste from the High Court premises, collects all the unsegregated waste deposited in the larger bins. The collected waste is further segregated by GCC in the plastic baling centre set up.
- The last event carried out for awareness generation was a cleaning marathon which was carried out 7 years ago by an advocate.

b. Disposal of sanitary waste

- There is an incinerator kept in the ladies' washroom for sanitary pads, but it is not in working condition. It is common to find sanitary pads flushed down the toilets which end up clogging the drain.

c. Plastic waste hotspots inside the High Court premises

- The main parking lot inside the premises was the biggest hotspot for plastic litter in the premises, with plastic carry bags and paper cups being the most commonly found items. This parking lot is cleaned only once a week on Saturdays. The generator areas were highly littered as well, since they are cleaned only when workers from the electricity board visit. The parking lot outside the premises was heavily littered as well, and the sanitary workers claimed that the external parking lot was to be cleaned by GCC.

- The low height shed of the Women’s Lawyer Association building was heavily littered with plastic items, as residents throw away disposable waste off the balconies despite there being a waste bin on every floor, and they are cleaned rarely due to the shed being made of light material, making it difficult for the cleaners to get there.

d. Manjappai Vending Machines and Reverse Vending Machines

- There are 5 Manjappai vending machines and 2 Reverse vending machines placed in the High Court. The Reverse Vending Machine near the visitor pass section was always found to be turned off. Moreover, it was observed that items other than disposable plastic bottles, such as curd packets and paper cups, are being inserted into the reverse vending machine. One Manjappai vending machine near the Aavin canteen needed a refill.
- The sanitary workers have not been informed to put plastic bottles in the reverse vending machine.

e. Grievance redressal for sanitation with High Court premises

- The PWD section’s cleaners are responsible for garden maintenance and respond to complaints regarding sanitation in the premises. They have 15 regular cleaners, who are mostly engaged in garden maintenance.

1.6.3 Sustainable Practices

- The lawyers’ canteen use paper and banana leaves to give parcels.
- Snacks are served in the meeting halls through the use of sustainable items like ceramic cups and plates, stainless spoon, paper cups, bagasse bowls, paper plate, areca spoon. The teashops also use wooden stirrers
- The paper waste from the High Court is collected and given to Tamil Nadu Newsprint and Papers Limited (TNPL) for recycling.
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- A Bar Council meeting observed on 18.03.2023, and food was served in eco-alternatives like Areca plates and banana leaves during the meeting.
- Every floor of the main building has an RO water machine, which could some extent help in reducing the reliance on plastic mineral water bottles purchased from inside the High Court premises.

1.6.4 Signage in the premises

A few signs are placed on the walls of the premises buildings with the message “usage of plastic bags is banned”, but not in a manner noticeable to the general public. One of the signs near the main entrance was completely hidden by a larger hoarding.

1.7 Methodology for assessing plastic consumption and waste generation in High Court

Plastic consumption and plastic waste generation in the High Court premises were studied separately. All plastics which are of single use type and disposed soon after immediate consumption have been considered for the purpose of this study, (including disposable items which are not banned).

1.7.1 Plastic Consumption within High Court premises

A. Amount of single use plastic sold within the High Court premises on a daily basis

An estimation of quantity of different categories of plastic items sold and used through various shops/canteens located within the premises was done based on primary surveys with the canteen operators and shop owners and further calculation of their total weight on a daily basis using the standard weight. There are 2 canteens and one xerox shop within the premises selling disposable plastic items, and 2 teashops which use milk packets, tea/coffee packets and sachets of Boost/Horlicks.

B. Amount of disposable plastic brought into the High Court premises on a daily basis

An estimation of quantity of different categories of plastic items brought into the High Court premises from outside was carried out. This majorly comprised of plastic carry bags and bottles which are brought into the High Court premises by public especially around lunch time. For estimating this, the visible incoming single use plastics and plastic water bottles were observed at the main gate (Aavin gate which is most commonly used by general public) for a specific period of time and the number of such plastic carry bags were noted to arrive at baseline numbers.

From these baseline numbers for main gate, certain assumptions (Refer to annexure 2.3) were considered to include hourly variations in this baseline numbers and to calculate the total weight of Single Use Plastics and plastic bottles that are brought into the High Court per day through the Aavin gate was calculated. Further, it was assumed the around half this quantity could be the incoming plastic that reaches High Court through the Esplanade gate. The Aavin gate and Esplanade Gate was primarily considered for this assessment as these gates are mostly used by general public and sees significantly higher commercial activities outside the gate. It has been assumed that external items would not be brought in through the other gates or the quantity brought in through the other gates could be considered negligible as there are no restaurants and shops in the vicinity.

C. Amount of disposable plastic used by the lawyer associations during annual meetings

Based on the consultations, it was understood that there are four official lawyer associations in High Court of Madras. Each of the lawyers' associations conducts an annual meeting within High Court premises. Through the consultation with association representatives, the approximate number of people attending the meeting and the corresponding food ordered for the meetings were understood. Based on these numbers, an estimate of probable food packaging waste that could be generated from these meetings were calculated.

1.7.2 Plastic waste generation within High Court premises

A. Amount of quantity of plastic waste collected by the sanitary workers across the High Court premises on a daily basis

Estimation of quantity of total plastic waste collected in the High Court premises on a daily basis was done through survey of sanitary workers. The estimate given by them was in terms of number of kgs of plastic waste collected by them on an average day. There is a team of 45 sanitary workers hired by the High Court.

1.7.3 Assessment of the awareness levels and behavioural practices of the visitors and resident law officials

A. Behavioural survey of the High Court visitors to understand awareness levels

A primary survey of the visitors in the high court premises was carried out to gather insights about their habits in relation to their use of disposable plastic and their awareness of the bans and initiatives of the State with respect to curtailing disposable plastic use. The following indicators were used to assess the level of awareness:

- Do they carry their own water bottle when they step out?
- Do they get lunch to office?
- Do they have a cloth carry bag with them right now?
- Are they aware of the ban on Single Use Plastics (28 items)?
- Are they aware of the Meendum Manjappai campaign?
- Are they aware of the Manjappai Vending Machines and the Reverse Vending Machines installed in the city?
- Which type of bag do they prefer to use?

1.8 Analysis of data collected and estimation of plastic consumption

1.8.1 Plastic consumption in High Court

Estimate of plastic consumption resulting from sources within High Court

There are three shops within the premises which sell disposable plastic items- Aavin canteen, Selvam canteen, and the Law Association Xerox shop, and two teashops which use disposable plastic items – N Living Butterfly teashop and Leo teashop. The details of plastic sold by these shops per day which could end up as plastic waste generated within the premises are covered in the table below.

Table 1 Estimate of Plastic consumption resulting from sources within the High Court Premises

Name of shop/ canteen	Total weight of items (gram)									Total weight of plastic (grams)
	Wax-coated paper cups	Curd packets	Tetra packs (Including plastic straws)	1 litre disposable plastic bottle	500 ml disposable plastic bottle	Plastic spoons	500 ml Milk packets	Tea/ Coffee packets	Boost/ Horlicks sachet	
Aavin Canteen	400	800	600	0	0	0	0	0	0	1800
Selvam Canteen	0	0	0	456	345	250	0	0	0	1050
Law Association Xerox shop	0	0	0	0	461	0	0	0	0	461
N living Butterfly teashop	0	0	0	0	0	0	720	48	120	888
Leo teashop	0	0	0	0	0	0	1280	112	180	1572
Total weight of plastic consumed from sources within the High Court premises										5771

-Banned Single Use Plastic Items
 - Other Single Use Plastic Items

These five canteens/shops cumulatively generate an estimated 5.77 kg of plastic consumption per day from sources within the premises. Of these, only the plastic spoons, the wax-coated paper cups and plastic straws (as part of the milkshakes sold in the Aavin canteen) are banned, which contributes to an estimated 11.6% (0.65 kg per day) of the plastic consumption per day from sources within the premises. However, the other types of plastic covered in the above table could also lead to generation of plastic waste within premises and hence has been included as part of the study. As can be seen in the graph above, around 31% of the plastic waste generated inside the premises is from the Aavin canteen.

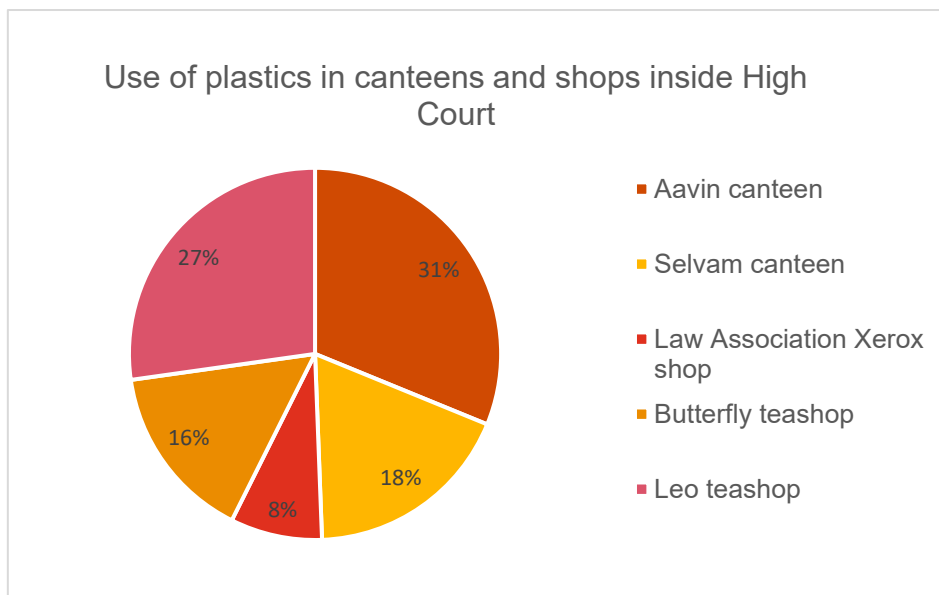


Figure 1. Use of plastics in canteens and shops inside High Court

Estimate of plastic consumption resulting from sources outside the premises

The main source of plastic brought in through external sources are both compostable and non-compostable plastic carry bags, disposable plastic water bottles, non-woven bags, and tetra packs, brought by resident law officials and visitors mostly as part of parcelled lunch and snacks. The most commonly observed parcel was that of the Sangeetha and SS Biryani restaurants near the Aavin gate. An estimated 2.8 kgs of disposable plastic is cumulatively brought into the premises per day.

Table 2 Estimate of Plastic consumption resulting from sources outside the High Court

Type of Single Use Plastic	Quantity of items from both gates	Weight of plastic (grams)	Total weight of plastic per day (grams)
Plastic Bags	162	8	1296
Plastic disposable bottles	28.8	19	547.2
Compostable plastic bag	90	8	720
Non-woven bag	7.2	30	216
Tetra pack	3.6	10	36
Total			2815

As per the data collected and further estimation, approximately a total of 8.58 kg of disposable plastic is used in the court premises every day. 67% of it comes from the canteens and shops present inside the premises while 33% of it is brought from outside the High Court premises.

Table 3 Total estimate of Plastic consumed in a day

Quantity of plastic consumption within the Premises (Kg)	Quantity of plastic Entering from outside (Kg)	Total daily average waste(Kg)
5.771	2.815	8.58

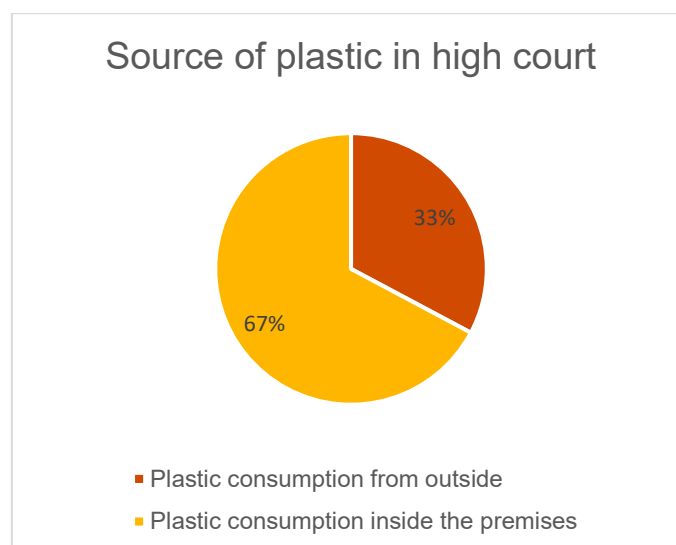


Figure 2. Source of plastic in high court

Out of the total plastic consumed inside High Court premises, the key banned Single Use Plastic items include plastic spoons, wax-coated paper cups and plastic carry bags, which collectively contribute to 2.2 Kgs per day, which forms 25.6% of the total plastic consumption.

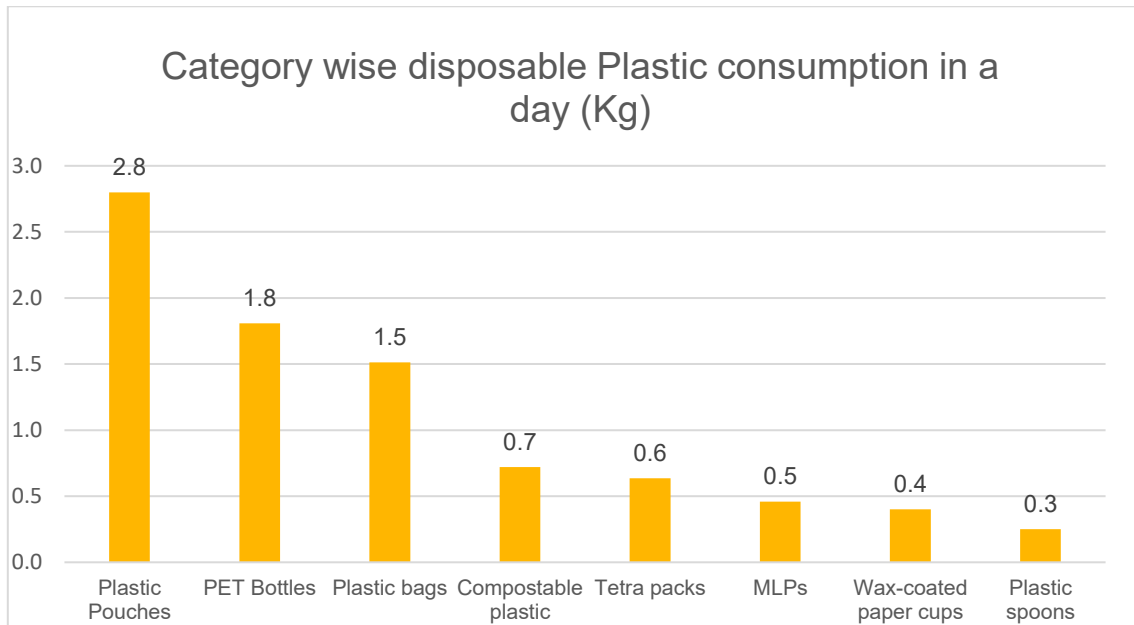


Figure 3 Category wise disposable Plastic consumption in a day (Kg)

1.8.2 Total waste generation

As mentioned previously, waste segregation practices to separate plastic waste from wet waste and other dry waste, are not followed in High Court and hence, weight of plastic waste could not be weighed separately as part of the study. However, based on the estimate provided by the sanitary workers, around 6 kgs of plastic waste (all plastic waste including banned and unbanned disposable plastic) are collected from the premises on a daily basis. This contributes to only 0.002% of the total daily waste in terms of weight.

1.8.3 Insights from behavioural survey

The majority of the resident law officials and visitors do not consume major plastic items like plastic carry bags and disposable plastic water bottles inside the High Court premises. Only 35% of resident law officials and visitors do not carry own water bottles when they travel. It is notable that nearly 75% of the resident law officials carry their lunch from home, which could help in reducing parcel packaging plastics into the High Court premises.

However, only 30% responded that they always carry cloth bags with them, which is something that could be improved as a practice.

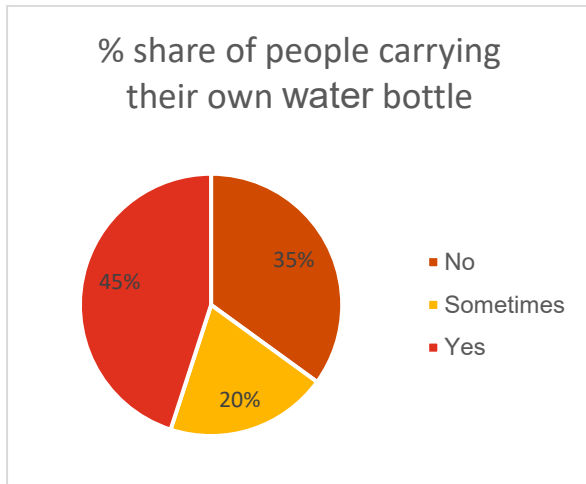


Figure 4. % share of people carrying their own water bottle

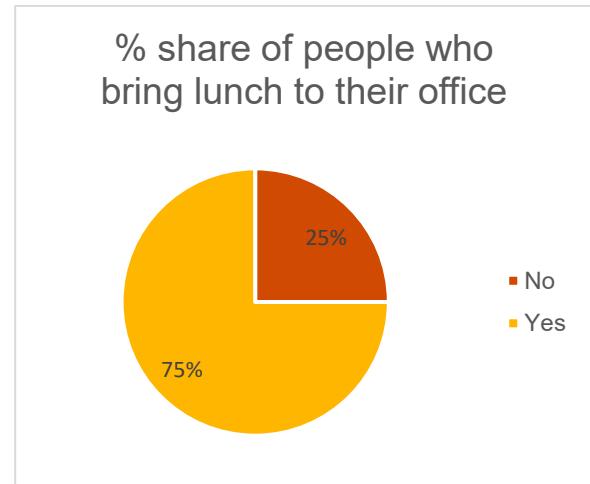


Figure 5. % share of people who bring lunch to their office

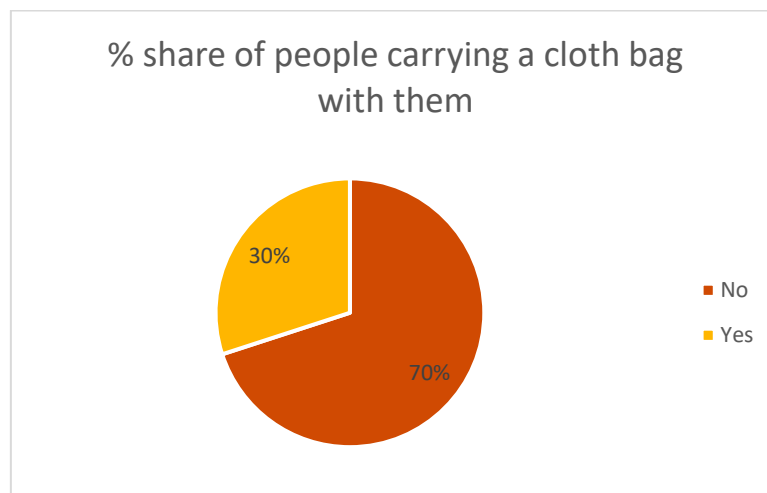


Figure 6. % share of people carrying a cloth bag with them

The majority of resident law officials and visitors are aware of the initiatives of the State Government with regard to Single Use Plastics, with 75% of them reporting that they were aware of the ban on Single Use Plastics, and 70% aware of the Meendum Manjappai campaign. However, a notable 22% of lawyers, who shall be more aware of the regulatory environment in the State, were not aware of the ban¹.

While most resident law officials and visitors were aware of the ban on plastic carry bags, they were not aware of the 28 specifically banned items.

¹ Based on 20 survey responses.

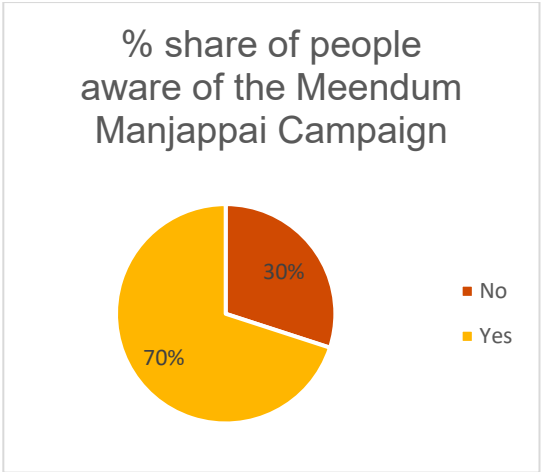


Figure 7. % share of people aware of the Meendum Manjappai Campaign

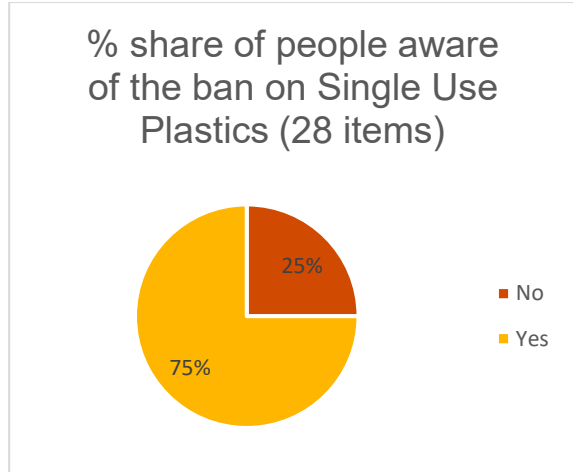


Figure 8. % share of people aware of the ban on Single Use Plastics items

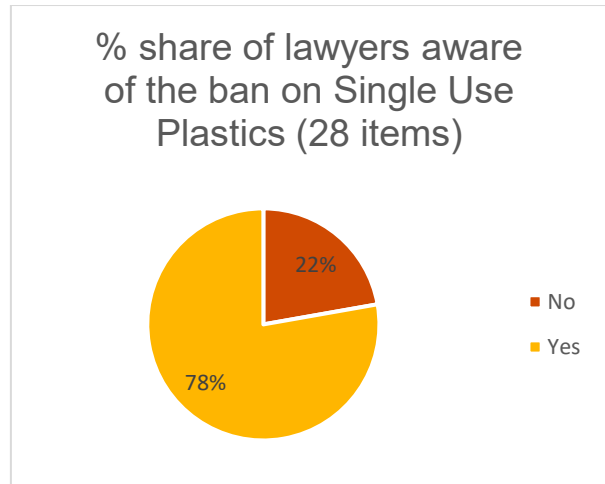


Figure 9. % share of people aware of the ban on Single Use Plastics (28 items)

Most respondents were aware about the eco-friendly facilities available within the premises, with 70% of them being aware of the Manjappai and Reverse Vending Machines installed in the premises. However, only 55% of the visitors were aware of the same, which suggests the need for more signage boards and navigation boards.

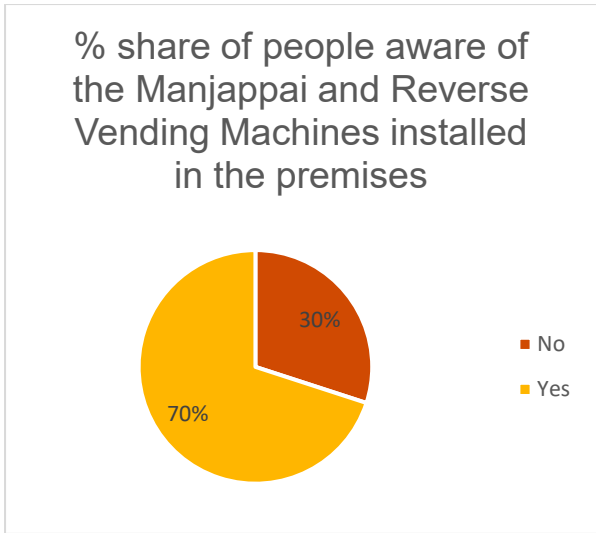


Figure 10. % share of people aware of the Manjappai and Reverse Vending Machines installed in the premises

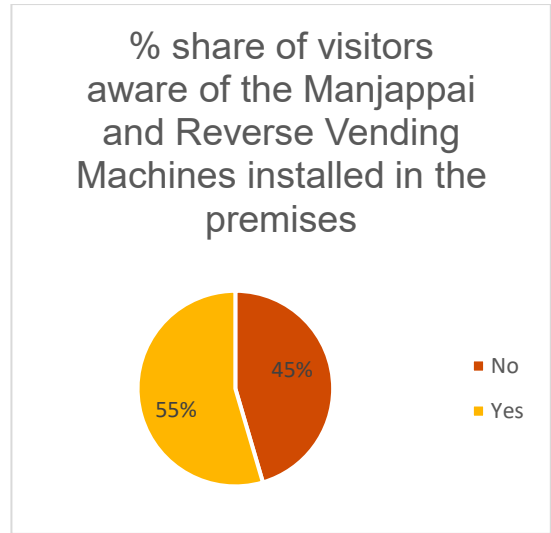


Figure 11. % share of visitors aware of the Manjappai and Reverse Vending Machines installed in the premises

The normal cloth bag is the most preferred bag of choice for general purpose use among the respondents, with 70% preferring it.

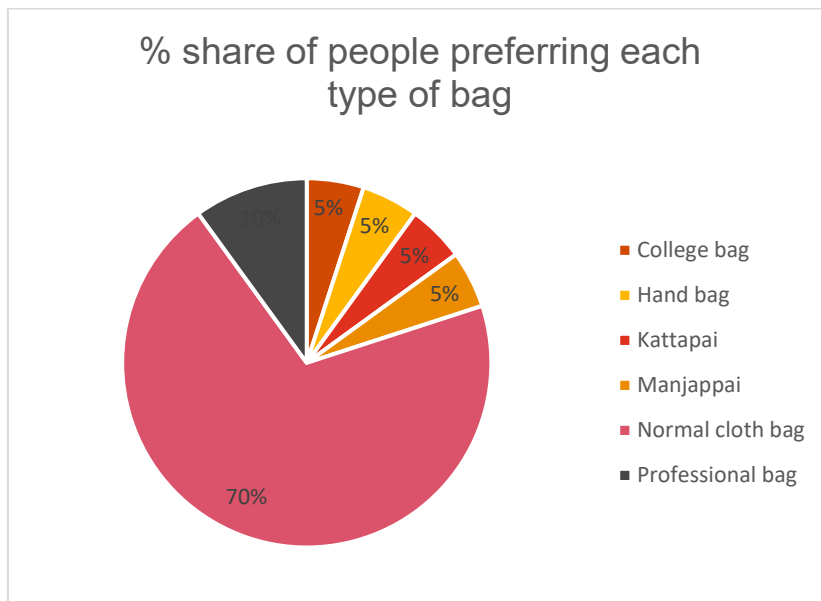


Figure 12. % share of people preferring each type of bag

1.9 Summary of Study

1. The total quantity of disposable plastic consumed in the High Court premises on a daily basis is 8.58 kg, which is approximately 0.01% of the total waste generated in the premise.
2. Out of this the quantum of banned Single Use Plastic is approximately 2.2 kg/day, which is 25.6% of the total waste generated. Plastic spoons, wax-coated paper cups and plastic carry bags are the key forms of banned plastic found in the premises.
3. The majority of the disposable plastic found inside the premises is generated within the premises. Within the court premises, Aavin Canteen is observed to use the most quantity of single use plastic.
4. The majority of resident lawyers and visitors follow sustainable practices like bringing their own lunch and water bottles.
5. The majority of resident lawyers and visitors are aware of the Government's initiatives on managing Single Use Plastic generation such as the ban on Single Use Plastics, the Meendum Manjappai campaign, the Manjappai vending machines and the Reverse vending machines.
6. Even though most resident lawyers and visitors were aware of the ban on plastic carry bags, they were not aware of the 28 specifically banned items. Moreover, nearly 22% of the lawyers seemed unaware of the ban.

1.10 Suggestions

Awareness

- Posters displaying the banned plastic products and alternative options may be placed at the appropriate location within the premises such as the Aavin gate, entry pass section etc.
- A navigation board may be placed detailing the locations of all the Manjappai vending machines and Reverse vending machines within the premises.
- Display boards may be placed near the Reverse vending machines with detailed instructions on dos and don'ts of using the machine and the benefits of using them.

- Awareness posters may be placed near the location of waste bins on each floor regarding how to segregate waste as per three bin system.
- The plastic containers received while parcelling food may be washed after use (any food waste being deposited in the food waste bin), only after which the plastic containers/ other containers may be disposed in respective bins.
- Awareness may be provided on disposing of sanitary napkins only in the sanitary waste bin placed inside the washrooms.

Waste management practices

- Segregation at source of the waste may be followed in all locations in the premises, with three bins kept separately for food, plastic & paper wastes on all floors of the premises. This shall help in raising awareness about recycling of plastic and need for the shift from single use plastics.

Enforcement

- Visual checking may be carried out for banned Single Use Plastic items at the entry gates. In the inspection counter for entry into the Main Court and Annexe area, physical checking may be carried out for banned Single Use Plastic items as well.
- A circular may be sent requesting residents to not litter on top of the sheds in the Womens' Lawyer Association building. A CCTV camera could be placed to monitor this.
- Enforcement may be strictly carried out around the High Court area. There are multiple flower sellers and fruit sellers outside the Esplanade gate especially who use banned plastic carry bags.
- Aavin canteen, which is using tetra packs with plastic straws and wax-coated paper cups, should be immediately instructed to stop using plastic straw and wax-coated paper cups on an immediate basis. An appropriate fine may be levied on this canteen.
- Internal circulars may be prepared and issued for setting norms for avoiding use of Single Use Plastics in distribution of snacks on functions and other events within the premises.

- Instructions may be provided to the stationery purchase sections to minimize the procurement of plastic products to the extent possible and encourage regular vendors to avoid plastic packaging.
- Directions may be issued for using milk packets and disposing it responsibly. It is to be made sure that the tip of the milk packets should not be snipped off totally; PET bottle caps should also be disposed responsibly.
- High Court may not use plastic displays and plastic posters, and these may be replaced (if any) with eco-friendly materials.
- Internal guidelines may be issued banning use of plastic or thermocol decorative items for internal celebrations or functions.

Grievance redressal

- An internal team along with a dedicated inspector may be appointed to ensure segregation of plastic waste and checking of plastic waste hotspots, and their contact number/WhatsApp number can be displayed if anyone wants to complain or post pictures of banned plastic items.

Sustainable practices

- Disposable bottles served during meetings and court sessions may be replaced with water served in tumblers or steel bottles.
- Circular to be sent to the sanitary workers to dispose PET bottles in the reverse vending machine after meetings.
- A composting pit may be constructed within the premises for composting organic waste generated within the premises, especially the dry leaves, which forms a major portion of the total waste.

Operation and maintenance

- The existing Manjappai vending machines need to be maintained and refilled regularly. An official could be appointed to look into this continuously.
- A separate bin/ incinerator may be placed in all ladies' washroom for depositing sanitary waste. The incinerators may be placed in each of the ladies' washrooms.

1.11 Photographs from visits to High Court as part of the study



Figure 13. Reverse Vending Machines near the entry pass section



Figure 14. Use of items other than plastic bottles in the reverse vending machines



Figure 15. Avin Canteen



Figure 16. Signage hidden by a bigger board



Figure 17. Manjappai Vending Machine



Figure 18. No Plastic zone signage within the premises



Figure 19. Wax-coated paper cups

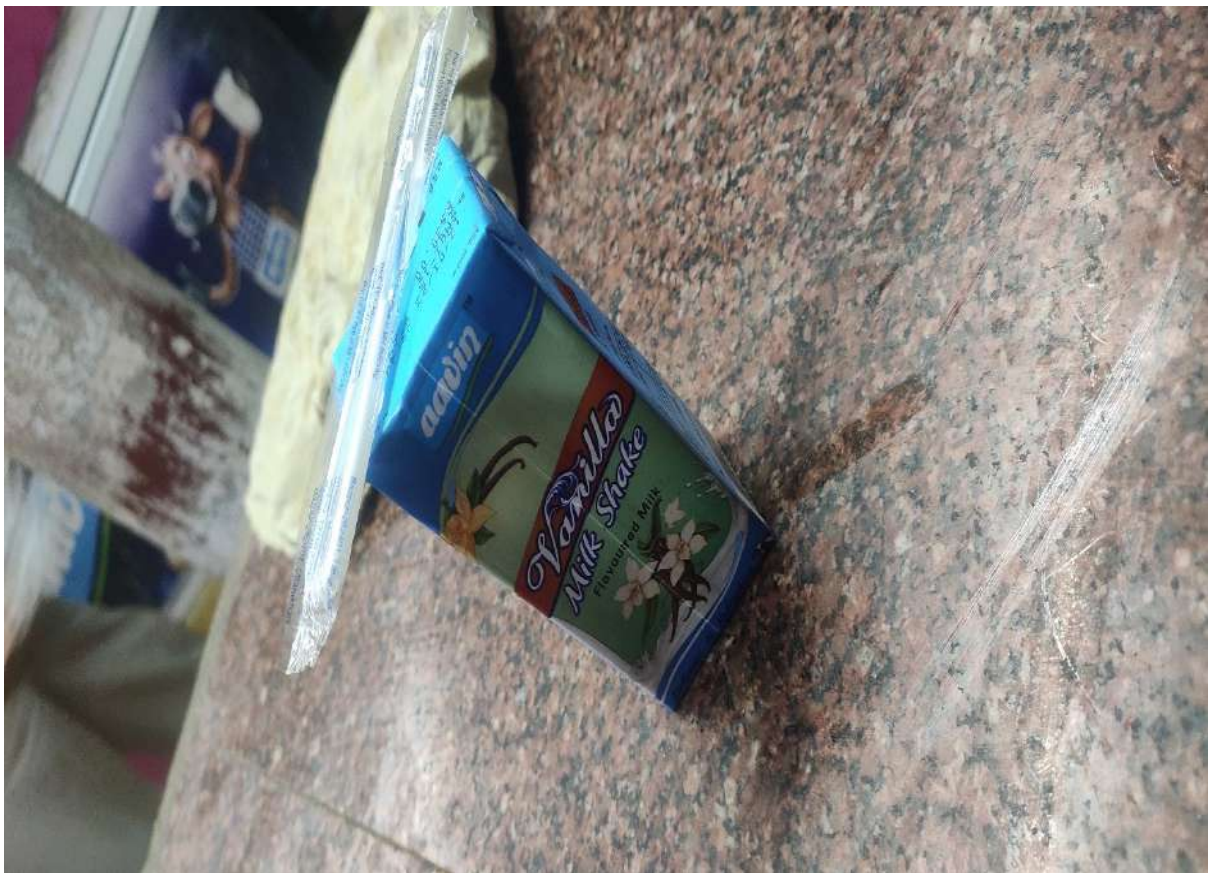


Figure 20. Tetra pack with plastic straw



Figure 21. Milk/Curd packets



Figure 22. Generator area hotspot



Figure 23. Plastic spoons



Figure 24. Littering on top of sheds

2 Annexure

2.1 Team members:

1. Mr. Balakumaran (PWM Cell)
2. Mr. Rahul Sivanunni (PwC)
3. Mr. Ajith Thambusamy (PwC)
4. Mr. Abhinav K.S. (PwC)

2.2 Questionnaires

Summary of existing efforts in the premises. The Questionnaires will be asked to the single point of contact to understand what is already happening in the premises.

Action	Description
1. Clear understanding of the problem statement	
2. Does the Campus have a defined waste management system?	Yes/No and what?
3. Details on previous awareness programs conducted	Are there display boards on banned plastics?
4. What barriers have been encountered, or anticipate encountering, when implementing the waste management?	
5. Who is in charge of waste management on campus?	<input type="checkbox"/> Technical services <input type="checkbox"/> Outsourced to a local company <input type="checkbox"/> Other, please elaborate
6. Is inspection done while entering the premises?	
7. Understanding any sale points within the campus premises	canteen, stationery, passes, Aavin booth
8. What action would be taken if someone is found using Single Use Plastics within campus	

9. Have the people working there taken a pledge to cease plastic use?	
10. Has any plastic audit been done before?	
Events on campus	
1. Are there any events conducted in the past that aim to reduce Single Use Plastics?	Yes/No and what was the output
2. How are the plastic waste managed during special events	
Recycling	
2. Is there an on-campus recycling program?	Yes/No
3. How are materials collected?	<input type="checkbox"/> Single-stream: Collected together and separated by Staff <input type="checkbox"/> Single-stream: Collected together and separated by waste management contractor <input type="checkbox"/> Single-stream: Collected together by WMA and separated GCC <input type="checkbox"/> Source segregated: Separate bins to collect different materials
4. Is waste being properly sorted on campus?	Yes /No If No? <input type="checkbox"/> Poor signage <input type="checkbox"/> Poor understanding of how to sort <input type="checkbox"/> Other, please describe:
5. Is there a composting program in the campus?	Yes/No If No how is compostable material disposed of?
Plastic sources	
1. What are the sources offering take-out options?	<ul style="list-style-type: none"> • Canteen • Milk Booth • Kiosks • Other, please describe:
2. Are there vending machines on campus and if so, how many?	<ul style="list-style-type: none"> • Beverages only • Snacks only • Both • Other, please describe:
3. How is drinking water arranged in the premises?	<ul style="list-style-type: none"> • Are mini plastic bottles used for distributing water during events? • Drinking Fountains • Refill Stations • Others

Questionnaire for Waste management agencies (WMA)

Waste Management off campus	
1. Who is the current solid waste management contractor for the campus	
2. Existing Waste Management practices within the premises	Segregation practices (separate segregation for plastic) Daily quantity of plastic waste generated? Daily quantity of dry waste - proportion of plastic?
3. Who currently provides recycling collection services?	
4. How often is waste picked up from campus?	How frequently does GCC collect plastic waste from the premises? Charges for the same.
5. Where does waste go once it leaves campus?	(A visit to the WMA to understand the process may be considered to know the end process)
6. What are the current costs associated with waste disposal?	

Questionnaire for public

1	Gender	Male
		Female
2	Age	—
3	Occupation of the respondent	Government Staff
		Legal Professionals
		Visitors
		Business owners
		Private firm employees
		Student
		Others
4	Sectors	Sustainability
		Law
		Hospitality
		Banking/ Finance
		Teaching
		Manufacturing
5	Education	General Administration
		Engineering
		Medicine
		Management
		Arts and Sciences
6	Do you carry your own water bottle when you step out?	Others
		Yes
		No

7	Do you get lunch to office? If no specify (canteen, parcel, online ordering)	Yes
		No
8	Do you have a cloth carry bag with you right now?	Yes
		No
9	Are you aware of the ban on Single Use Plastics (14 items)?	Yes
		No
10	Are you aware of the Meendum Manjappai	Yes
		No
11	Are you aware of the Manjappai Vending Machines and the Reverse Vending Machines installed in the city?	Yes
		No
12	Which one do you prefer?	Manjappai
		Paper bags
		Plastic carry bags
		Jute bags
		Normal cloth bag
		Other

2.3 Assumptions for amount of disposable plastic brought into the High Court premises on a daily basis

The observation was made at the Aavin gate for a period of one hour from 12.45 PM to 1.45 PM, which would be the peak hour for food parcels being brought into the High Court premises. The assumption was made that the quantity of Single Use Plastics brought into the High Court premises for the rest of the day would be 20% of that during the peak hour, and this was used to calculate the total daily quantity. Further, it was assumed that the plastic that reaches High Court through the Esplanade gate would be half the quantity plastic from Aavin gate.

2.4 Number of Manjappai's dispensed in the High Court premises in January and February 2023

Dated between 30th December 2022 to 30th January 2023

Table 4 No. of Manjappai vended in the month of January 2023

Location	No. of Bags Dispensed
Aavin Gate	346
Family Court	320
GP Building	123
Chambers Building	41
Information Center	65
Total	895

Dated between 31st January 2023 to 28th February 2023

Table 5 No. of Manjappai vended in the month of February 2023

Location	No. of Bags Dispensed
Aavin Gate	297
Family Court	230
GP Building	91
Chambers Building	110
Information Center	84
Total	812

2.5 GCC waste measurement

The total waste generated on a daily basis from the High Court premises was measured by the Greater Chennai Corporation (GCC) for the dates 14th, 15th, and 17th of March 2023. The average daily waste was found to be 2.8 tonnes. A significant portion of the total waste collected (around 1 tonne) was garden waste. All waste from the canteens were degradable.

A visual inspection of the waste revealed that the Single Use Plastics usually found in the waste are disposable plastic bottles, food trays, and plastic carry bags. According to the estimate of the sanitary workers, around 6 kg of plastic waste is collected in the premises on a daily basis, which makes up only 0.002% of the total daily waste in terms of weight.

The waste generated from Madras Advocates Cooperative Society Ltd. Canteen (floor 1 and 2) are collected, segregated and sent to bio composting plants. The details of waste generated in these canteens are mentioned below

Table 6 Details of waste generated in the canteens

Date	Weight of kitchen waste (Kg)
17.3.2023	260
15.3.2023	440 (Wet-265, Dry-175)
14.3.2023	285
Average daily waste	320

The total bulk waste generated within the High Court premise excluding the waste generated from the Madras advocates cooperative society ltd. Canteen is mentioned below. This bulk waste is collected from the 24 metal bins placed across the High Court and are sent to landfills.

Table 7 Details of bulk waste

Total waste excluding the waste from canteens	
Date	Weight (tonne)
17.3.2023	3.11
16.3.2023	2
14.3.2023	3.06
13.3.2023	2.5
12.3.2023	2.16
Average daily waste	2.5

The Daily average waste generation within the High Court premise is given below

Table 8 Daily average waste generation within the High Court

Average Daily waste from Canteens (tons)	Average Daily Bulk Waste excluding kitchen waste	Total daily average waste
0.32	2.5	2.82

Plastic items found in the sample bins (100 kg capacity):

There are a total of 24 bins belonging to PWD and GCC spread across the major waste generation spots within the High Court premises of which we have examined 2 bins

Bin 1 (Near Additional Law Chamber)

Table 9 Plastic items found in Bin 1

Single Use Plastic item	Quantity
Disposable plastic bottles	4
Food containers	4
Carry bags	6

Bin 2 (Near Railway Reservation Counter)

Table 10 Plastic items found in Bin 2

Single Use Plastic item	Quantity
Disposable plastic bottles	9
Food trays	3
Carry bags	2



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