SINGLE USE PLASTIC FREE CAMPUS

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About PJMT

Prem Jain Memorial Trust was formed in the year 2018 to continue with the legacy of Dr. Prem C. Jain to promote innovation and sustainability. The mission of **Prem Jain Memorial Trust** is to create, establish and maintain sustainability paradigm through education, recognition and nurturing of our present and future generations. The Trust aims at identifying future leaders who can be a catalyst for global development of sustainability and can create awareness and advocacy about the environment. It also wishes to nurture India's young talent by educating and informing them about sustainable development ecosystems.

Dr. Prem Jain, architect of the modern green building movement **has ushered in a paradigm shift in the way buildings are conceived and designed worldwide**. He has facilitated India stands tall in the global green building movement and aspired for **"Bharat to emerge as Jagat Guru in Sustainable Built Environment".**

Dr Prem Jain began to think about Sustainability as a lifestyle way back in the 1970s. Over a half century of dedicated work, he thought and spoke a language that was somehow larger than life, and worked his passion for his 'Janani Janmabhoomi' burnt bright through his life's work and accomplishments. He is also referred to as the 'Father of Green Buildings' in India. The 'green revolution' he started is the foundation for the legacy of PJMT, in the hope that we can balance the need for growth and safety of our beautiful planet earth.

PREM JAIN MEMORIAL TRUST

Foreword

Transparent Net Zero Plastics Mission

We are glad to note that Prem Jain Memorial Trust through their multi-pronged approach are fostering and promoting green concepts in buildings and built environment. Indian Green building movement has come a long way in last two decades, achieving green building footprint of 8 billion sq.ft. CII-IGBC would continue to play an important role in building the green building movement and further expand our initiatives in leading the national mission on Net Zero.

Single use plastic waste is exponentially rising in most of the cities, towns and villages which do not have an integrated solid waste management system. This means very little plastic waste is properly collected or disposed-off, resulting in massive waste management challenge.

This toolkit is one such document which essays the methodology and proven concepts to strategically plan a 'single use plastic free' campus. This publication aims to provide practical and replicable solutions to manage plastic waste in our educational campuses. Once implemented, many of our 300 universities and 45000 colleges will have an inspiring story to tell and a narration to elucidate the way they have converted challenges into growth opportunities.

I was in the New Year eve period in the Nilgiris Hill district - Coonoor and Ooty. Myself and Neerada were deeply impressed to see the strict compliance of 'No Plastics' zone, by filtering at entry points to hill stations by urban & rural local bodies, highways and tourism departments and retail outlets. The positive impact is discernible. Cochin is a good case where CREDAI is working with all builders to make the buildings and built environment waste free. NIRMAL in Chennai has demonstrated how mobilising active citizen partnership at neighbourhood level can make transformative impact. IGBC 's own efforts for Net Zero Waste rating in Nov 2021 is worth mentioning. The citizens, communities and students play a positive role. While many technology options and processes and institutional strengths are available, the biggest contribution for waste management lies in the attitudinal approach of citizens. Mindscape changes will determine landscape changes as far as net zero plastics mission is concerned. The Swachh Bharat Mission phase 1.0 and 2.0 have provided a major fillip for poilcy support, technology options and financial assistance. Let us all build on it in the context of Climate change actions and Sustainable Development Goals by 2030 and Net Zero Carbon initiatives in decades ahead

I profoundly thank and appreciate the visionary leadership of PJMT Trust and the catalytic role it is playing in educating and nurturing the young generation about sustainable development ecosystems. I heartily appreciate the team for their passion, commitment, and dedication.

In days to come, we in IGBC look forward to work more closely with PJMT and educational institutions in demonstrating green campuses across many cities and towns of India.

V Suresh
Chairman
Indian Green Building Council

Special Message:

As Dr. Jain says in his book, Path of Green, "*Bharat is amongst the very few civilizations that called their land-of-birth Janani Janma Bhoomi, Bharat Ma. The soil of Bharat has been considered sacred, something to be preserved with blood and toil. The tradition of 'Aparigraha' permits us to draw from the Earth, only enough resources to sustain a comfortable living. Old buildings are dismantled and not demolished to recycle every component. Old clothes are bartered for utensils and mended so they can be used for the less affluent. Even the human body is cremated so it can return it's five elements to nature.*

Developing nations and the western world have regaled in consumerism, to provide comfort at any cost, even nature. For years they have overdrawn from the earth to fulfill human greed without replenishing. The grave danger to life on Earth looms large in the shape of climate change. Our land, air and water are heavily polluted. The madness of consumerism of one nation affects all species on earth. A million species have become extinct and alarm bells are tolling, telling us to act now. Tomorrow will be too late!"

My dearest Father believed that 'Youth' is catalyst for 'Change' and for development of sustainability across the globe. His Mission was to nurture young talent, by disseminating education about a sustainable built environment and ecosystems. Prem Jain Memorial Trust works each day to keep this legacy alive and create a Greener Earth, through education, inclusion, advocacy, and it's bright, young students.

We as a collective community on this planet, generate enormous amounts of plastic waste on a daily basis, which is toxic to both people and environment. The use of plastic is harmful to our environment and the human body. The pandemic has come as a rude wakeup call to all humanity and I urge each and every one of you to BAN the use of single use plastic in your homes, offices, societies and college campuses.

At the 4th Harit Prem Bharat Mahotsav, let us together take a pledge to say **'NO TO PLASTIC'.** Let us begin this year with conviction, intention and action to reduce the burden on our Mother Earth.

Payal Jain
Founder Trustee
Prem Jain Memorial Trust

Introduction

In one of the most ambitious targets by a developing country to combat climate change, Prime Minister Narendra Modi announced at COP26 that India will achieve net zero carbon emissions by 2070.

Starting with self-imposed declaration to not use plastic by students will be the first step to Net zero Carbon. This declaration will give belief to students of today that they can achieve tougher goals in their careers.

These guidelines are doable because they are created by students to be followed by fellow students.

Our Suggestion is to take a pledge by Institutions in MOU with PJMT to eradicate One Time Use Plastic from their campuses by August 15th 2022. When **Bharat** celebrates its 75th Year of Independence this should be tribute by the students of **" BHARAT MAA**".

Sandeep Narang

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1. Historical Overview of Plastics

First ever man-made plastic was introduced by Alexander Parkes in the year of 1862, at London International Exhibition as an alternative to ivory and horn that Parks discovered while trying to develop a synthetic substitute for shellac for waterproofing.

It was in the year of 1920, a scientist Hermann Staudinger proved that the plastic is just a form of polymer that can be used to describe any plastic as well as several other naturally occurring organic compound. Even our own DNA are polymers. It then raises the question that if it is a type of organic compound, then how did it turn against nature and become poisonous for our planet?

The virgin polymer just like our DNA are decomposable, the factor where this becomes hard to decompose is due to the additional chemical compounds introduced into the plastic polymers, in order to make it more durable and functionable. The plastic long chain like molecule (polymer) made from petroleum capable being molded, extruded or cast into various shapes. This adaptability, plus a wide range of other properties, such as being lightweight, durable, flexible, and inexpensive to produce, has led to its widespread use. Most of the plastic that we use todays are made of polyethylene terephthalate, a substance that is so hard to break down by just bacterial invasion. UV lights on the other hand can break down these plastics, but the protecting dome of environment keeping us safe from these harmful electromagnetic rays, delays the process of plastic decomposition.

We should remember that **Plastic** was invented during World War II, and was initially used as an insulator for radar cabling in aircrafts or as a replacement for rubber to withstand wear and tear, or was rationed in forms of parachutes robes in the U.S. military. In simple words to serve the war hence to play this crucial role, plastics underwent a series of chemical strains, becoming more and more hostile towards nature and closer to serving the needs of humans.

We produce nearly **300 million of tons of plastic, equivalent of 50 million African elephants, each year!** The amount of plastic we have thrown away are so large that the plastic garbage patch in the Pacific Ocean are three times the size of France. (Elkins, 2019)

Today, we use plastic for every piece of instrument we come across, whether it's a simple carry bag or a complicated machine. In the developing world, the applications of plastic may differ; 42% of India's consumption is used in packaging. The world that is connected globally and allows us to be in touch with each other is Fibre optics, either made of glass or plastic. As a result, it is no different to say that plastics are part of our everyday lives like a habit.

Relatedly speaking**, India have 300 universities and 45000 colleges of various specialities** and assuming that a college have 5000+ fraternities that would be nearly 60.62 tons [1] of plastic from one college. When the same amount is multiplied to the combined colleges and universities, we end up with a massive amount of plastic waste in a single year.

The report highlights the amount of plastic used on **Indian College Campuses.** Many renowned institutes have already committed to going plastic-free. The Indian government is still exploring various strategies to make the single-use plastic free campus a reality. In the following report, we discuss some of the initiatives as well as case studies implemented successfully on international campuses. Finally, this report provides insights about how we can strategically come up with a plan for the **campus to go plastic free.**

According to the FICCI, a single person in India consumes 11kg plastic every year. (FICCI, 2020)

2. Back Ground- Going Plastic Free

Plastic pollution was first noticed in the ocean by scientists carrying out studies on the plankton in the late 1960's and early 1970's. This in-disposable material didn't not concern the world when the supply chain and the usage was at a limited boundary, but when worldwide, various industries started relying on plastic for product coverage and carrying utilities, they did not think about the after effects of this plastic to have on the earth. To sum up in a single sentence - **"Plastic is a substance that humans didn't think through before using."**

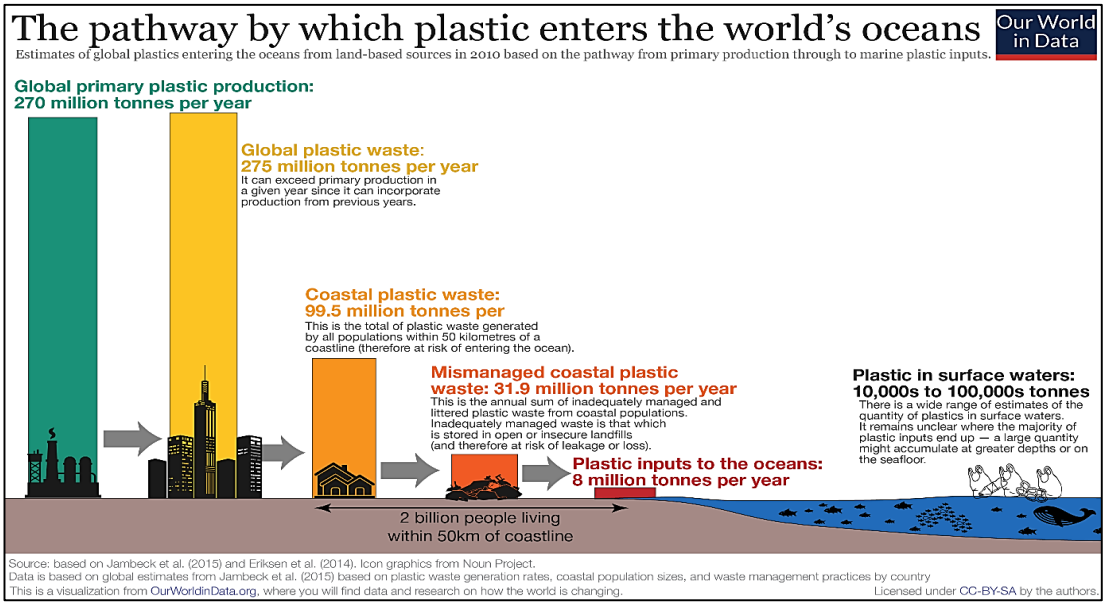

Figure 1 How plastic pollutes the ocean (OWID, 2021)

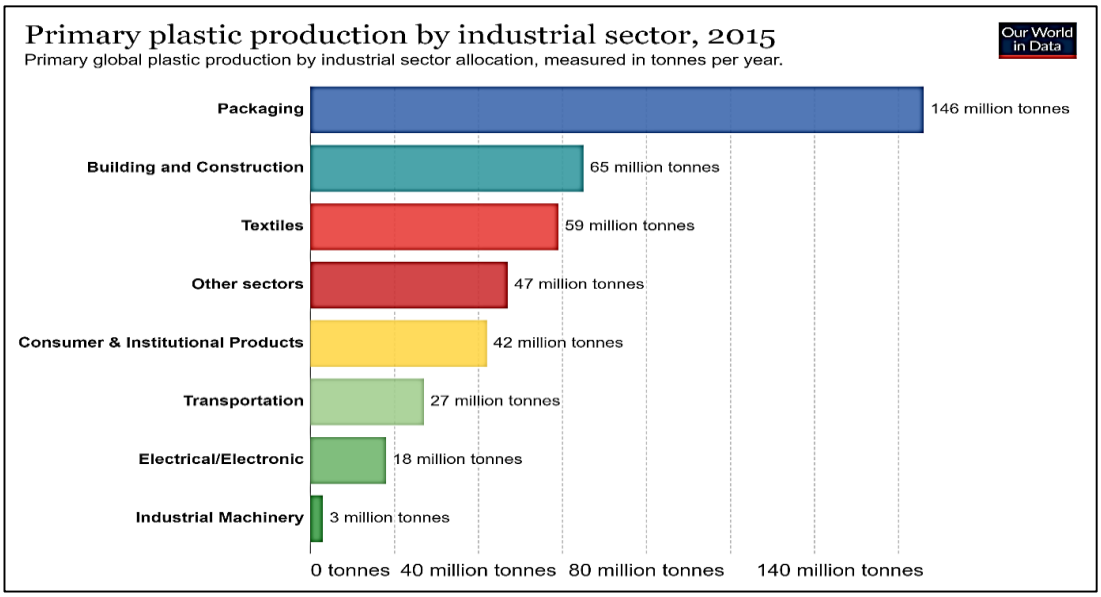

Figure 2 Plastic Use by Sector (OWID, 2021)

Nearly every terrestrial location is downstream from the ocean. It is the recipient of so much plastic waste generated on land. Approximately 244,000 tonnes of plastic debris floating or near the surface of the world's oceans were estimated in the first oceanography study published in 2014, which examined the amount of near-surface debris. Plastic being in the ocean or over the land, without any treatment to the usage, our entire ecosystem is affected by the plastic pollution. Plastics have affected nearly 700 species, including endangered species. Over 70% of aquatic animals consume plastic, and we humans consume up to 5gms of plastic a week as per a study report by National Geographic.

2.1 Harmful Effects caused by Plastic

2.1.1 On Humans

- The chemicals used in the production of plastic are toxic and detrimental to the human body.
- Toxins can cause cancers, congenital disabilities, immune system problems and childhood development issues.
- The polymer chains of BPA break down and enter the human body through contaminated water or fish, it could lead to some fatal damage to our body. BPA can decrease thyroid hormone receptor which can lead to hypothyroidism.
- Here are some adverse health effects caused by plastic:
  - Asthma | Pulmonary cancer due to inhalation of poisonous gases
  - Liver damage | Nerve and brain damage | Kidney diseases

2.1.2 On Environment

- Floating around in the water column, plastic trash is found in the guts of more than 90% of the world's sea birds, in the stomachs of more than half of the world's sea turtles, and it's even choking the life out of whales.
- At the rate at which plastic is accumulating in the oceans of the planet, it's predicted that, by 2050, the mass of plastic in the world's oceans will exceed the mass of all the fish that live there.
- Plastics are one of the main products of fracking, it is bad for the planet -- it pollutes water, soil and air with toxins, it creates underground cavities that collapse into sinkholes, and it raises pressure in underground rock formations.
- These tragic events should come as no surprise: there are an estimated 270,000 tons of plastic floating through the world's seas where it threatens 700 marine species with its presence. Further, there is growing evidence that plastics play a role in rising rates of species extinctions.

2.1.3 On Animals

- An animal with its head stuck in a plastic food container may suffer from overheating, suffocation, dehydration, starvation, and eventual death from these elements.
- Plastic stands to cause intestinal blockages in an animal that consumes it.
- Death is the ultimate tragedy for animals that consume plastic and this is a sad fate that both wild and domestic animals alike can face.
- Similar to plastics hurting animals that walk, birds also stand to be impacted by plastic when it impedes their ability to fly.

2.1.4 Other reasons for the banning single use plastic are shown through the poster below.

Figure 3 Reasons to refuse Single use plastic in Campuses

2.1.5 Beginning of a Movement

- The initiative for solid waste management started in United States including wastes such as plastics in 1890's and by 1930's virtually all cities offered garbage collection services. With the support of the Union Ministry of Environment, Forests and Climate Change, the Solid Waste Management rules in India came into existence in 2016 at a slow pace, replaced by the Municipal Solid Waste and have been in place for 16 years in India.
- Major strategic plan taken for the plastic wastes around the world are:

3R principle: Reduce, Reuse and Recycle. In order to combat the majority of campus pollution, the concept of zero waste or 3 R principle will be considered.

Figure 4 3 R Principles (Balendspace, 2021)

The below guidelines and case studies are purely meant to 'incubate' the plans and create 'Start-up' programs in your own campuses and encourage other campuses in India to follow the suit to make India a true 'Swachh Bharat'.

3. Why to go Plastic free in Educational Campus?

Single-use plastics, or disposable plastics, are used only once before they are thrown away or recycled. Hence, it is a wasteful commodity. Since we are the future of society it is also our duty as students to make an impact big enough to eradicate single use plastic from our lifestyle.

The invention of plastic by modern technology makes our lives convenient and easy, but it is also not always healthy. Petroleum-based plastic is non-biodegradable and usually ends up in a landfill or gets into the water and finds its way into the ocean for many years. Though plastic will not decompose into natural substances, such as soil, but years of exposure to the environment eventually breaks down the plastics into chemical components and release into the atmosphere.

The major chemicals released into the atmosphere are potentially toxic bisphenol A (BPA) and PS oligomer into the air, water and soil causing additional pollution. BPA and PS oligomer are sources of concern because they can disrupt the functioning of hormones in animals and can seriously affect reproductive systems.

3.1 Need for this movement

A Campus is the only organization that deals with large amounts of collective individuals all day. At the same time, there is a large amount of use of plastics because several activities are going on. Hence, **Educational Campuses** have a very important role to play being the trailblazer in this movement for Single Use Plastic free campus. Such initiatives in educational campuses have big potential of scaling up and making an impact in the society.

According to their cultural and educational evaluation, students from kindergarten through 5th grade only get rewarded for good behaviour. One of the aspects of such character development is cleaning up their own classrooms after the institutional hours. According to Japanese cultural beliefs, a clean environment not only helps young minds concentrate, but also develops their emotional intelligence.

Figure 5 Eco- Club, an environment society of YMCA

4. Next Steps

The sudden implementation of a plastics-free policy may cause objections during capacity building and related activities. In order to be well prepared from the standpoint of understanding the challenges and misunderstandings about plastics, it is important to consider the following elements.

4.1 Reusable Bags Spread Bacteria

Some studies out there try to make the case that reusable bags encourage the spread of infectious disease through harboring bacteria like E. Coli. The reality is that bacteria is found on everything, including single-use plastic bags. Dirty reusable bags can be given for wash or can wipe it down. It's also good practice to use separate bags for meat and produce.

4.2 Reusable bags are toxic

Any synthetically made product has the potential to contain unsafe amounts of heavy metals or other toxic compounds. Eco-friendly intentioned products are no exception to this. Likewise, reusable bags are no more likely to be toxic than their disposable counterparts. Navigating this is part of being an informed consumer. Banning plastic bags means people will just use disposable paper bags instead. That is certainly a logical assumption, but paper bags can be the lesser of two evils. They are more easily recyclable and have the ability to be composted. Oftentimes, bag bans will put charge a small fee onto other disposable bags, so that consumers are still encouraged to bring reusables.

4.3

Figure 6 Finding alternative means to use the single use plastics.

Other actions to Reduce Plastics

Some of the simple actions to build up your capacity building can be through a campaign stating reduction of the most prominent sectoral usage of plastics such as packaging industries which statically shows that only 14% of plastic packaging globally make it way to the recycling plant and only 9/5 recycled and 40% ends up in landfills permanently. Giving with the alternatives such as:

- Cook from raw materials to reduce food waste and packaging
- Cut back on unnecessary packaging by trying out scoop shops, or by buying from green grocers and delis.
- Buying the materials in bulk to reduce the number of plastic packages
- Carrying your own carry bag made from recyclable or cloth-based bags.
- Using of stainless-steel tiffin boxes and spoons to carry the lunch.

5. Swachh Bharat Mission status on Single Use Plastic

The waste management infrastructure in the States/UTs is being strengthened through the Swachh Bharat Mission.

The following steps taken to strengthen the implementation of single plastic use through Plastic Waste Management Rules, 2016, stated as below.

- The States/UTs have been requested to constitute a Special Task Force for elimination of single use plastics and effective implementation of Plastic Waste Management Rules, 2016.

- A National Level Taskforce has also been constituted by the Ministry for taking coordinated efforts to eliminate identified single use plastic items and effective implementation of Plastic Waste Management Rules, 2016.

- To encourage innovation in development of alternatives to identified single use plastic items and digital solutions to plastic waste management, the India Plastic Challenge – Hackathon 2021, has been organized for students of Higher Educational Institutions and start-ups recognized under Start up India Initiative.

Figure 7 Best Out of Waste – Waste is a Design Flaw

6. Guidelines

As well as being a foundation for the colleges and institutes to initiate their own campaigns and start-ups, these guidelines help to accelerate the India Plastic challenge - Hackathon 2021.

6.1 Orientation

It is important to educate and encourage before proceeding towards acting on eliminating single-use Plastic free. It will encourage students and faculties to understand how it affects the larger community.

6.2 Plastic Task Force

In line with the clarion call given by **Prime Minister Shri Narendra Modi** to phase out single use plastic by 2022, keeping in view the adverse impacts of littered plastic on both terrestrial and aquatic ecosystems, the Ministry of Environment, Forest and Climate Change, Government of India, has notified the Plastic Waste Management Amendment Rules, 2021, which prohibits identified single use plastic items which have low utility and high littering potential by 2022.

6.3 Identification and Quantification

It is necessary to have a survey to identify and quantify the single-use plastic being used in the campus and to track down all the single-use plastic being present in the campus either in classrooms, canteens or offices. Thus, having track record of the usage of single-use plastic would enable to devise ways to eliminate them with proper strategy. Some of the strategies involves the following parameters:

Figure 8 Formation of task force within your own campus

6.3.1 Campus Clean Ups with Reusable

Collecting cleaning up plastic should be targeted both inside and outside the campus. By comparing these results assessment of direct impact that the campus community has on its surroundings can be obtained.

6.3.2 Monitoring and Reporting

Clean up targets need to be fixed for all departments to reduce their single-use plastic consumption on a weekly or monthly basis. The reuse and recycling should be assessed by the Task force to track the actual transition away from single-use plastics in campus. Use of smart devices and digital technologies can also be used for implementing above steps.

7. Why is it important for students to involve?

Students are the future of the society and as being the future leaders, the responsibility to keep the nature and environment safe and secure for the generations to come. The students are the essence of the institutes and the ratio of students is a lot more than the authorities hence capable of creating a positive impact on society.

7.1 Plastic Free Campus

Colleges can generate enormous amounts of plastic waste, which is toxic to people and the environment, and never goes away. Plastic Free Campus, a project aims to measurably reduce plastic waste and pollution in college campuses and the world around them. To eliminate plastic pollution and its toxic impacts on people and the environment.

7.1.1 For a student the plastic free campus will:

- Empower students and others to make change
- Help to organise teams to create a movement
- Will teach students, the negotiation techniques and the power of persuasion
- Providing with personal tasks on investigating existing local waste management systems
- Opportunity for students to create community awareness of the plastic pollution issue
- Inspire behavioural changes at my school, home and community

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7.2 Alternatives to Single Use Plastics for Institutes

Students should be aware about the alternatives to single use plastics and even come up with their own creative ways to practice in their institutes. Some of the alternatives with examples are provided below:

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7.2.1 Lids, Straws and Stirrers:

- Wooden stirrers
- Compostable lids
- Paper or reusable straws
- Bamboo cutlery

7.2.2 Bags:

- Cloth bags, either purchased or homemade out of old pillowcases or T-shirts
- Paper bags (consumer must be encouraged to reuse them or dispose of them properly, i.e. compost or recycle)
- Cardboard boxes (again, consumer must be encouraged to dispose them off correctly)

7.2.3 Bottles:

- Water fountains with gooseneck spouts
- Fountain beverage machines
- Pitchers (for bulk liquids)
- Reusable water bottles

7.2.4 Cutlery:

- Compostable ware
- Old fashioned metal spoons, forks, and knives
- Metal chopsticks w/ carrying case
- Reusable bamboo ware (that can eventually be composted)

7.2.5 Plastic Film:

- Compostable film
- Reusable containers with lids for catering type events
- Aluminum foil (make sure to recycle it!)
- Wax paper

7.2.6 Dishware & To-Go Containers:

- Compostable boxes
- Wax paper
- Jars (reused from jam jars, etc. so that it will be cost effective to the institute as well), sturdy to-go containers
- Reusable dishware made out of durable products like ceramic or harder plastics stainless steel options.

There are few alternatives to choose from, and other options can be practiced as per the institutions policies and regulations, but the goal to remain same.

7.3 Case Study – Eco Brick

An initiative taken by the task force of VASUNDHRA – ECO CLUB, J.C. Bose University of Science and Technology, YMCA located in Faridabad. The club focus on four key areas of Water Conservation, Plantation Drives, Eliminating the use of Single- Use plastics and Solid Waste Management for environmental protection.

An Eco- Brick is a building block made entirely from unrecyclable plastic. It's created by filling a plastic bottle with clean, dry plastic until it's packed tightly and can be used as a building block. The durability of the plastic makes it an ideal building material when joined together with proper joinery of mortar during the building construction.

Figure 9 making of Eco- Brick

The type of wastes that can be added on in the bottle should be in dry state to prevent any seepage and fowl smell. The wastes such as plastic bags, photo paper, crisp packets, food containers, plastic straws, plastic cutleries, cling films and plastic packaging's can be added inside the bottle.

In addition to reducing the amount of plastic into various landfills, this is a highly efficient technique to further encroach our environmental footprint.

Figure 10 Poster Making Competition as an awareness program on Single- Use Plastics

Figure 11 Nukkad Natak Competitions, as an awareness program on Single- Use Plastics

Figure 12 Greenery through hydroponics via recycled old OVC pipes from campus.

Outcome - Encourage students to bring their own cup or mug. Students can be given discounts to encourage this practice as well.

8. Road Map for Institutes

To initiate, as students, auditing of the existing practices in their own Institutions are necessary.

8.1 **Step 1**

Students must enquire:

- What plastics are used on campus and where do they come from?
- Which of these items are most frequently used?
- Where are single-use plastics disposed of?
- Who is using single-use disposable plastics on campus?

8.2 **Step 2**

Make a visual assessment of how much plastics used weekly, monthly and finally annually along with the source, where it is bought from.

8.3 **Step 3**

Monitoring and Reporting in terms of the following queries:

- What kinds of plastics are being thrown away?
- Roughly, what ratio of these are plastics that can be recycled?
- What/How much of that is material supplied by your campus?
- What/How much is being brought onto campus from outside sources?
- Who is associated with these outside sources and how will you communicate with them?

8.4 **Step 4**

- Analyzing the targeted areas in the institutes where the plastics are used frequently.
- Provide with posters of alternatives for the customers to gain ideas over the alternatives.

8.5 **Creative ideas for the reuse of plastics**

- Sending out messages in the form creative arts such as the making use of the plastics to make artificial flowers as shown in the figure below.
- Conducting monthly competitions for the reuse of plastics and analyzing the quantity of plastics recycled into the database formerly created to track down the plastic quantities.

Figure 13 Artificial flowers created from plastics

Figure 14 Making brick from the plastic waste an initiative by Axis Institute of Architecture

9 Case studies

CASE 1
In Japan, nestle has given up use of single-use plastic and they decided to make paper wrapping for its KitKat products to combat plastic waste. Not only that, they decided to go a step further and include instructions to create origami with the packaging. Which makes it more interactive and people would want to participate in the movement.

CASE 2
Companies such as Coca Cola have stepped up in a green initiative where they sell their earlier bottled water in aluminum cans.

CASE 3
McDonald's chains have gone nearly plastic free with paper and wooden cutlery and avoiding plastic lids. They also serve hot drinks in reusable porcelain and glass mugs. This can be stitched into our system of Institutes.

CASE 4
The Municipal Corporation of Indore city, located in Madhya Pradesh, India, initiated replacing plastic bottles and single use utensils with traditional alternatives like copper and glass. India can be ahead in this scenario as we do have traditional alternatives to choose from and it is inbuilt in our culture.

CASE 5
Eckerd College was awarded grant from the National Oceanic and Atmospheric Administration Marine Debris Program to reduce single-use plastic consumption on campus. The project aimed to raise awareness among students, faculty and staff about the negative environmental impacts of plastic waste, particularly in the ocean habitat and encourage the use of alternatives to single-use plastic items.

The results were progressing as years passed and the initiative becomes the culture of not only the institute but also the locality.

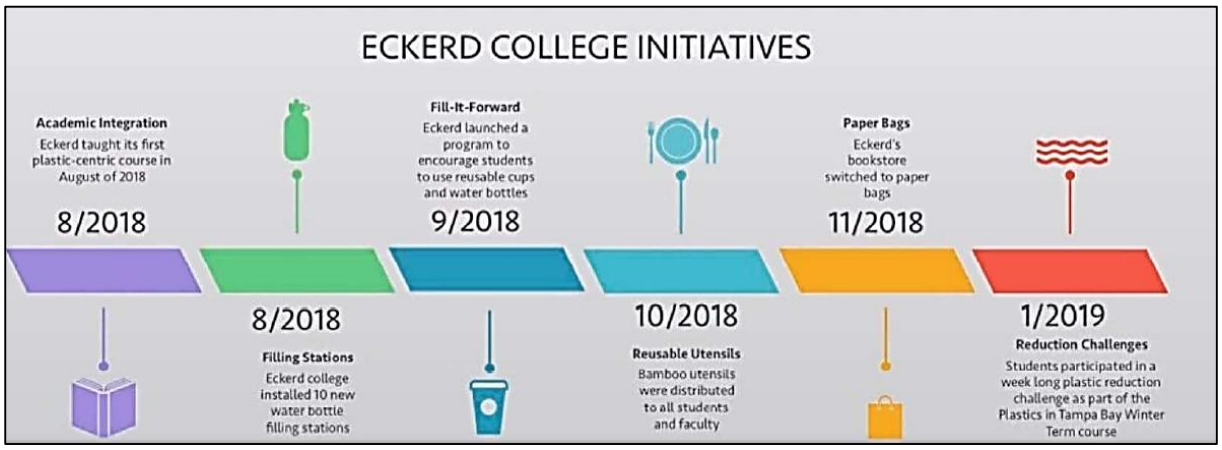

Figure 15 Framework for going plastic free in Eckerd College.

10 Way Forward

There are no definite means of rules to obtain a Single Plastic free Campus but the overall intention of this manual provides with an overall idea of how a student carry forward about a campaign and associated start-ups in order to help our nation to fulfill its mission for Swachh Bharat. Additionally, a poll over the concept of Single plastic can be made to make the entire segment of the campaign more authentic by the campus students, providing with their perspective about plastic in general and how willing they are if other incentives are included.

References

- Balendspace. (2021). Retrieved from https://www.blendspace.com/lessons/e2VGpxlMVvExlg/poster-on-3r
- Campus, P. F. (2021). *International waste platform*. Retrieved from https://internationalwasteplatform.org/plastic-free-campus-pfc/
- Elkins, Z. (2019). *Why is it so hard to decompose plastic? .*
- FICCI. (2020). *Fact sheet on plastic waste in India .*
- NG. (2019). *The world's plastic pollution crisis explained*. Retrieved from national geographic: https://www.nationalgeographic.com/environment/article/plastic-pollution
- OWID. (2021). *Plastic Pollution* . Retrieved from Our World in Data : https://ourworldindata.org/plastic-pollution

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