

Current Issue: 'Ecopreneurship for Sustainable Future'



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CONTENTS

Ecopreneurship: An emerging
Need for Sustainable Future

Dr. Ashish Jain 2

Destroying air pollution to save
lives: the story of Devic Earth

Dr Srikanth Sola 4

GreenSole: A Sustainable Ecopre-
neurship Model in Refurbishment
of Old Footwear Soles

Ms. Ashiquee Jain ...9

Refillable - A portable zero waste
refill station solving the single use
plastic crisis

Purav M. Desai11

The greatest threat to our planet is
the belief that someone else will
save it” –

Dr. Aparna Pandey14

**Environment in News Head-
lines..... 20**

From Director's Desk



The industrialization and urbanization are two pillars of economic development for any country. However, from planning stage to development of urbanization and industrialization, the exploitation of resources and negative impacts on environment are immense. For industries it is becoming challenging to fulfill technical requirements as per the compliance and maintain the quality of product with its continuous supply. In this context a systematic and integrated approach is required to ensure the conservation of resources, gainful utilization of waste generated from each step of product development to resource for another process as per the principles of circularity. From 1990s many models of green entrepreneurship or ecopreneurship have been developed to convert waste to wealth or implementing low cost technologies for reducing resource consumption and pollution management that proved to be helpful in addressing many challenges of environment and also in livelihood generation.

To strengthen Indian economy, ecopreneurship is will be a driving power in providing innovative green products to society at large. Further, government schemes to promote local resource based economy and easy loans are catalyst in the promotion of ecopreneurship. The current issue of 'The Environment Management' is covering 'Ecopreneurship for sustainable Future' theme. The articles from GreenSoles, Refill, Divine Earth, Indian Pollution Control Association and RUR will provide an insight to young entrepreneurs for developing need based and eco friendly model of sustainable business.

Dr. Seema Mishra

Ecopreneurship: An Emerging Need for Sustainable Future

Mr. Ashish Jain

Director

Indian Pollution Control Association

We all are aware about the environment impact of globalization and consumerization. Our demand for various resources is continuously increasing at a very rapid rate and there is ongoing debate on economy vs environment. There is no doubt that village, cities, town, state and country need growth and development but somehow, we fail to maintain balance between development and environment conservation. Hence, creating a unsustainable future for coming generation.

Development is directly proportional to more infrastructure, manufacturing, production, and consumption, which mean more air, water, and soil pollution along with more waste generation. Considering the current development pattern, we need professional to deal with these issues. There are laws, Rules and policy to check impact of human activities on the environment but these rules and policy could not reach to the layman and there is poor implementation of such rules and regulations.

There are few organization and institutions in India who teach environment and there are handful of people who are working as a solution provider to the industries and other stakeholders. If we take an example of waste management sector, India alone generate 67 million MT of waste annually and we could collect only 40% of the total waste on an average because there is lack of human resources, professional organization and infrastructure to

handle and treat huge volume of waste. On the contrary, we cannot afford our 60% of waste remain uncollected and allow it to pollute our natural resources like air, water, and soil. Similar situation with other segment also like pollutant emission and from industries, automobile etc.

There is a dire need to develop more professionals in the field of environment who can contribute their knowledge toward sustainable future. These professionals may called as ecopreneurs and may work as a service provider to the community including industries, municipalities, and individual or set up their own industries to develop innovative solutions, which may prevent emission of toxic gases into the environment or develop eco-friendly products, which can be avail to the locally. A ecopreneurs must have passion to work for the society and environment. He/ she should have ability to take risk and should have a confidence to work on his innovative ideas. I believe every silly idea can be transferred to great idea, if it nurture with patience and clear vision and objective.

A Toolkit for Budding Ecopreneurs:

- Portray your brand story
- Authenticity and Transparency matters
- Work and rework on product development
- Good marketing matters
- Never ever greenwash the customars
- Use a CRM software for quality and good marketing

SIES Indian Institute of Environment Management

A recognised R&D Centre under University of Mumbai



All previous issues of 'The Environment Management' can be viewed at:

[http:// inwww.siesiem.edu.u](http://inwww.siesiem.edu.u)

Destroying Air Pollution to Save Lives: The Story of Devic Earth

Mr. Devjeet Auddy

Devic Earth, Bengaluru, Karnataka

Thirteen years ago, Dr Srikanth Sola started practicing as a cardiologist at the world-renowned Cleveland Clinic. He had joined the medical profession, like many do, to save lives. However, during his tenure, he came across two oddly disturbing realizations which made him change the way he saved lives forever.

Every year, air pollution claims more than 80,00,000 lives, making it one of the leading causes of global mortality today. In contrast, over 10 years, Dr Sola could save only 100,000 lives as a cardiologist – 1.25% of the annual casualties.

Dr Sola also noticed that though several of his patients led healthy lifestyles, they still suffered from heart diseases. It took him a while to discover that the commonality between all his patients was that they were living in highly polluted places.

This unsettling imbalance between lives lost and lives saved, and the discovery of one the most overlooked causes of mortality motivated Dr Sola to take a bold step and search for a better way to save lives. His journey is fascinating.

Cardiologist to start-up CEO – the journey begins

Dr. Sola spent a decade researching and experimenting for a viable solution while simultaneously maintaining his practice. Not that every innovation takes as long, but sometimes our patience is

tried and our perseverance challenged to test our deservedness for what we seek.

All those years of patience and perseverance finally paid off in the year 2018 – Dr Sola finally found a commercially viable solution for air pollution, one unlike anything the world had ever seen.

For this solution not only cleaned the air but also overcame the limitations of technologies available in the market.



Dr Srikanth Sola
Founder and CEO, Devic Earth

Dr. Sola then founded Devic Earth Private Limited, a company that aims to save lives by freeing our planet of air pollution.

From being a bootstrapped firm, to getting funded by angel investors, to very recently being funded by Blue Ashva, a large Singapore-based venture capital firm, Devic Earth has come a long way in its last two years.

Today the company has more than 50 installations all across India, indicative of its growing presence in the niche area of air pollution control technology. The journey, of course, has been one laden with challenges and lessons.

Challenges – The breakfast of champions

The very first challenge as an ecopreneur was to create a great product. This took ten years, as Dr Sola already had a full-time job as a cardiologist.

To have a product that works is one thing, to have a product that works better than any other product is another, and, to develop a product that is commercially viable is another ballgame altogether.

It took years of continuous optimization for the team to increase the efficiency, reduce the size & cost, and ensure the safety and quality of their solution, which was aptly named 'Pure Skies'.

Once that was done, the next big challenge was to build a great team of reliable and experienced professionals. This was of critical importance because the people who we work with at the start of a venture tend to have a long-lasting impact on its future.

Another reason why this was very important was because Devic Earth's founder, Dr Sola, had an excellent background in medicine and biomedical engineering, not in corporate entrepreneurship. While Dr Sola already possessed strong skills in tech and leadership, the team needed people with strong finance, marketing, and sales talent.

But such individuals tend to be highly experienced and one's pay must be commensurate with one's value. For a bootstrapped start-up, this is quite a challenge.

To navigate through it, Dr Sola relied upon his networking skills, the compelling nature of Devic Earth's benefit to the environment, and a promised share in the company. This worked, and it drew some highly talented and experienced individuals to Devic Earth.

With a promising team of 4 members, Devic Earth started its journey.



Today Devic Earth has a strong and committed team of 20 members which includes scientists, graphic designers, marketing specialists, and sales experts – all working together to make its vision of a pollution-free world come true.

Out in the open – the next stop

In a competitive world, making space for a new brand is certainly not easy; and given the nascency of the green tech space in our country, it is even more difficult. What's more, though air pollution is all-pervasive, the willingness to do something about it isn't.

Devic Earth had to start by identifying customers segments that were already on the lookout for a solution to air pollution.

After rigorous talks with various customers, we discovered that heavy industries had the greatest unmet need for our kind of air pollution control equipment among all the market segments. With this insight we started our fight against air pollution.

Relentless sales pursuits, continuous marketing in every social media channel, publishing papers in reputed journals, and acquiring all kinds of certifications from nationally accredited labs – we did everything we could to convince the market to break the mould and adopt our novel technology.

Soon, a few customers agreed to give our technology a chance. Once we demonstrated the efficacy of our solution they got on board, and ever since more and more customers have opted for Pure Skies to clean their air.



Happy customers after a successful installation of Pure Skies at their site. A lot of our customers are referrals from satisfied clients.

Pure Skies – the revolutionary solution for ambient air pollution

One of the reasons Pure Skies has been adopted by several customers is because of its incredible features and user-friendly technology.

Unlike any solution in the market, Pure Skies uses pulsed Wi-Fi to clear the air of particulate and gaseous pollutants.

The nature of Wi-Fi is such that its range can be expanded using extenders or signal boosters. This feature allows Pure Skies to cover very large areas using a point-to-point network and also frees the customer from any hassle of having to change filters regularly.

While the smallest model of Pure Skies caters to large homes and small offices, the largest model can cover a whopping 3 km radius.

Most of the solutions in the market don't come close to this range, and the few that do are mammoth in size. The largest variant of Pure Skies is

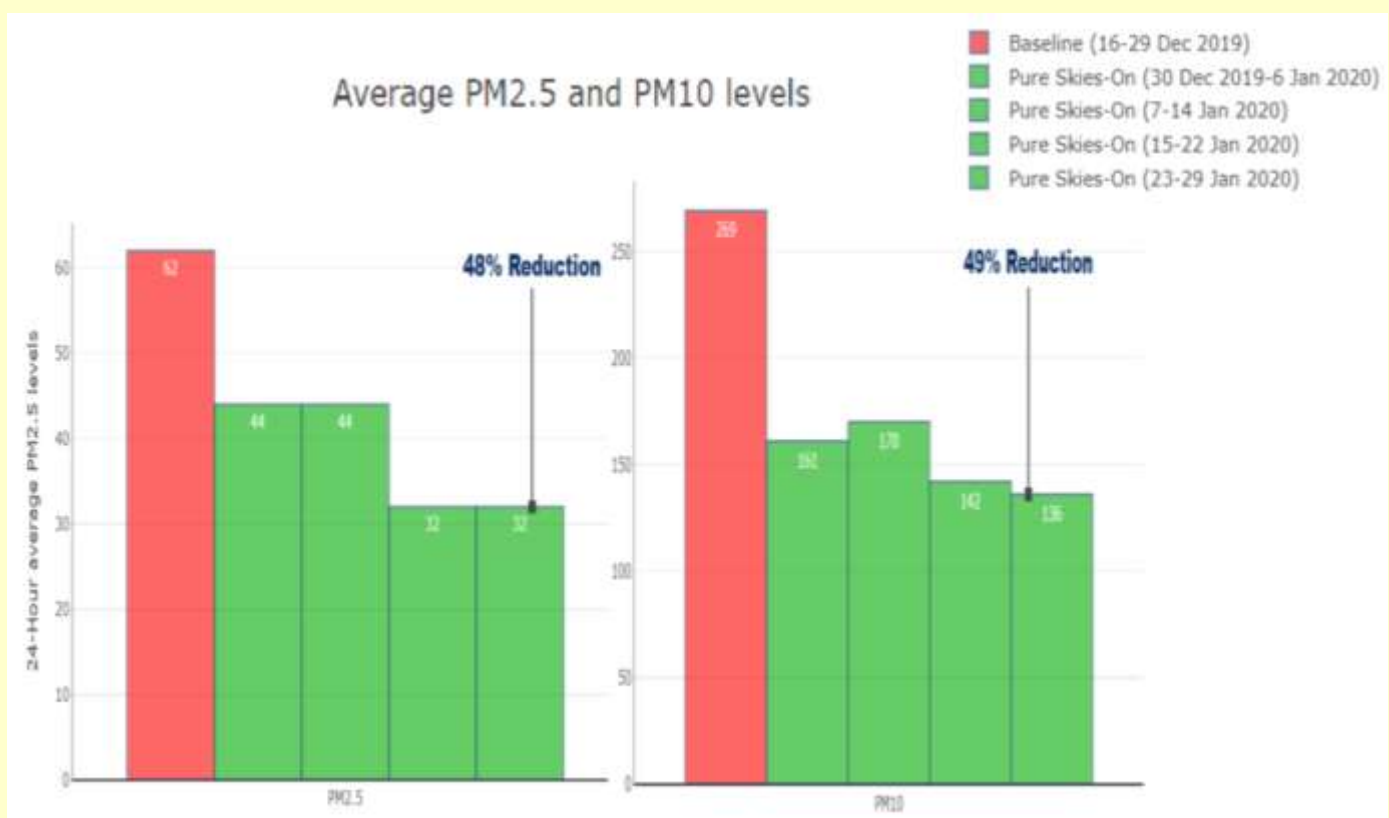
no larger than a mini fridge. It consumes lesser power than the average laptop.

Since a single Pure Skies usually suffices in covering very large areas, the cost of air cleaned per square foot is far lesser than that of conventional air purifiers. Furthermore, our customers don't need to worry about frequent maintenance issues and exorbitant upkeep charges because Pure Skies is incredibly durable. This makes it affordable and worth every rupee.

Besides superior coverage, Pure Skies is also highly user-friendly. It is noise-free and comes as a plug and play solution. This means the customer faces no hassle of lengthy installations. Furthermore, the user has secure access to real-time data on the air quality at his/her location, and this data can be viewed on any android device at any time of the day.

Pure Skies caters to a wide variety of customers. From homes to offices, from cement, chemical, steel and thermal power plants to educational institutions, hotels, cinema halls, and large outdoor & indoor events, Pure Skies takes care of them all. The impact it creates on air quality is evident from the adjoining case of a large cement plant that installed Pure Skies in their premises.

Prior to installation, the air quality at this plant was hazardous, evident by the soaring levels of PM2.5 and PM10 illustrated in the graph. After Pure Skies was turned on these levels dropped by almost 50%.



Average PM2.5 (left) and PM10 (right) levels and their % reduction at a Karnataka-based cement plant

The red and green bars are the Pure Skies-Off and Pure Skies-On periods respectively. Pure Skies-On period has been represented as eight-day intervals.

Data source: 3rd party air quality monitor (Airveda Pvt. Ltd. pre-calibrated against reference grade monitors)

The challenges ahead

Though we have an excellent solution, a sizeable market, and a superb team, one of the biggest challenges we still face is brand visibility and the lack of conviction that air pollution is more than just a problem to complain about.

While the awareness about air pollution has drastically increased in India over the last 5 years, the willingness to take action for it has remained more or less stagnant. Even now, a lot of our time is spent in convincing companies, cities, and individuals that air pollution is a serious threat that needs immediate action.

Rapid urbanization, increasing population, and continued dependence on fossil fuels means greater emissions. While reducing pollution at the source will always be the most important means of controlling air pollution, technology solutions such as Pure Skies can help clean up the air much faster.

To make a swifter and lasting transition into a pollution-free world, our technology has to be coupled with actions at the individual level.

The way we travel, what and how much we consume, the way we celebrate – all these choices will determine the kind of future we shall have in the years to come.

19th April 2021 to 26th April 2021

SIES Indian Institute of Environment Management Internal Quality Assurance Committee Organizes Online Faculty Development Programme on “Research & Publication Ethics”

About the Institute

SIES- IIEM is a premier autonomous research and academic institute in the areas of sustainable environment management for last 22 years. Our Institute is recognized as a research Centre for Ph. D. in Environmental Sciences degree under University of Mumbai and also as Scientific & Industrial Research Organization (SIRO) by Department of Scientific Industrial Research (DSIR), GoI since 2003. The institute has conducted several major R&D projects with support from government and non government funding agencies in the areas of climate change, sustainable waste management, natural resource management, pollution control and management etc. The developed technologies have been successfully transferred at urban and rural interface and also transferred in prominent industries in consultancy mode. We are actively supporting State Pollution Control Board in the areas of pollution monitoring especially in biomonitoring and indexing of river ecosystems.

Objectives

The core objectives of the Faculty Development Programme are to help the participants:

- Familiarize themselves with various scholarly writing and publication strategies
- A clear understanding of the methods of error-free writing
- Manage the publishing process with confidence and informed choice
- Demonstration of a plagiarism software
- Further Career and Professional Development

Tentative Speakers:

- Prof. Anurag Garg, IITB
- Prof. M. L. Khan, Dr. H. S. Gaur Central University, Sagar (MP)
- Prof. V. Subramaniam
- Dr. Ashwani Kumar, Dr. H. S. Gaur Central University, Sagar (MP)
- Prof. Prashant Bhawe, University of Mumbai
- Prof. B. B. Sharma, University of Mumbai
- Prof. Yogesh Patil, SIU, Pune

How to Register?

- Interested participants need to fill the [application form at the following link](https://forms.gle/tytYqe6pcQ4V21H77)
- Link for Registration : <https://forms.gle/tytYqe6pcQ4V21H77>
- Keep checking email inbox. Depending on the seat availability, a provisional confirmation letter will be sent through email.

Registration Fees

Faculty: INR 1200/-
Ph. D. Scholars: INR 500/-
Last Date of Registration :
12/04/2021

About the Programme

We are organizing an Online Faculty Development Programme (FDP) on “Research & Publication Ethics” from April 19, 2021 to April 26, 2021. The programme consists of different modules to sensitize researchers and faculty across disciplines to enhance their skills in planning, writing, and communicating publications and proposals in peer reviewed, reputed academic journals and to various funding agencies, respectively. The focus of the programme is to guide participants on the ethics of research and publication especially plagiarism. The programme is designed to enlighten participants about research and publication quality as per national and international standards.

The programme is designed as per UGC guidelines to provide 2 credits and a certificate to the participants.

Content of the FDP

- Philosophy and Research Ethics
- Publication Ethics
- Writing a good Research Paper
- Indexing and Citation Databases
- Plagiarism and application of plagiarism softwares
- Importance of Copyright and IPR
- Open Access Journals
- Writing a good Project Proposal

Who can Apply?

- Faculty members in Institutes of Higher Education Universities/Colleges and Registered Ph.D. research scholars are eligible to apply for the programme

Programme Committee

- **Dr. Seema Mishra**
Director, SIES IIEM
- **Dr. Devayani Savant**
Programme Convener & Deputy Director,
SIES IIEM

Contact

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GreenSole: A Sustainable Ecopreneurship Model in Refurbishment of Old Footwear Soles

Ms. Ashiquee Jain

Head – CSR

Greensole, Navi Mumbai (M.S.)

Greensole, provides discarded shoes a second life by refurbishing them to comfortable footwear and providing them to the people in need, contributing to environmental good, by keeping non-biodegradable shoes out of landfills, social good, by giving basic necessity of footwear to the people in need and protecting them from diseases contracted through unprotected feet, and economic good, by giving employment to refurbish shoes. Millions still do not have a pair of footwear while millions of shoes are discarded and end up in

landfills; at Greensole they are bridging this gap. Greensole got registered in the year 2016 and since then partnering with more than 55 corporate. They have donated slippers to more than 3, 20,000 kids helping them to walk to schools.

It started as athletes Shriyans and Ramesh used to discard lot of sports shoes for which there was no proper way of utilization, thus came about Greensole which bridges the gap between people discarding shoes and the ones not having footwear.



The main objective of Greensole is to improve the living standards, to give provide or render help to children in need. To donate footwear on behalf of individual, corporate, to children in utmost need and to further conserve the environment by reusing old shoes, slippers, sandals and other such waste and discarded materials. They have

achieved the objective by creating a self-sustaining infrastructure that facilitates the provision of the basic necessity of footwear to everyone, forever, environmental good, by refurbishing discarded shoes with zero carbon footprint and economic good by giving employment to refurbish shoes. Till date the organization has provided

3, 20,000 footwear to people in need across the villages of India and by 2021, they aim to provide appropriate footwear to more than 5, 00,000

people in need. It costs only Rs. 199/- to refurbish one footwear.



Recovered soles ready for upcycling



Process for upcycling of footwear



Glimpses of footwear donation drive in different schools

Significant Achievements of Greensoles

Environmental Benefits

- i. Recycled and refurbished 3, 50,000 old footwear and reduced the waste at disposal sites.
- ii. Reduced substantial carbon emission by reusing old soles.
- iii. Prevented depletion of resources

Economical Benefits

- i. Generated livelihood opportunities at different steps of entrepreneurship model
- ii. Retailing of eco- friendly footwear towards building a self sustainable social venture

Social Benefits

- i. In 2018 they have started with their first skill centre with Tata Steel and Lion's Club at Noamundi where they train, skill and employ underprivileged people. They are planning to open 30 such skill centers across India.
- ii. The Mechanical skills viz. - Knowledge of machines and tools, including their designs, uses, repair, and maintenance. In production skills - the knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture for further distribution are imparted

Since the onset of the outbreak has impacted children's education, and the lack of resources has greatly affected the underprivileged children's schooling. Greensole want to ensure no kid's education is being hampered. As the situation has subsided and the schools have started to reopen, Greensole wants to keep supporting by donating slippers to school-going children in the rural sector. A pair of footwear makes an incredible difference, and a lack of one makes it difficult to cause soil-transmitted diseases and parasites. To date, the organization has provided 3,50,000 footwear to people in need across the villages of India and by 2021, They aim to provide footwear to more than 5,00,000 people in need. They have plans to also distribute accessories like school bags, mats, pouches, etc along with slipper donations made from discarded fabric waste.

SIES Indian Institute of Environment Management is committed to **SIES Institutional Social Responsibility**

Objective:

Upliftment of remote villages of Maharashtra in the areas of Education, Environment, Health, Hygiene and Financial Empowerment.

Major Initiatives:

- Adoption of 12 schools in tribal areas of Maharashtra
- Upgradation in school infrastructure
- Training to rural youth and women for gainful employment
- Improvement in quality of natural resources and facilities in villages adopted

Join us our Institutional Social Responsibility initiatives by donations and support in the upgradation of recently adopted Zila Parishad School in Thane district.

For more details call on 022 6119 6456.57

SIES INDIAN INSTITUTE OF ENVIRONMENT MANAGEMENT (Recognized by University of Mumbai)

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ADMISSION PROCESS STARTED

Post Graduate Diploma in Sustainable Environment Management (PGDSEM) Academic year 2021 – 22

Environmental management techniques are integral to conservation, agriculture, forestry, industry and countryside planning. This part time autonomous course is designed for people already in environment-related employment, who wish to develop their careers by updating their knowledge and skills. It aims to satisfy an industrial and public sector demand for science and engineering qualified environmental management personnel.

Eligibility: Professionals from government, industries, consultancy and NGO working in field of environment

Duration: 11 months- Part Time Online Programme



COURSE HIGHLIGHTS

- Highly experienced faculty
- Industry centred curriculum with emphasis on hand on practical experience
- Interdisciplinary approach
- Innovative pedagogy
- Focus on innovation through project activities and entrepreneurship
- Linkages with various stakeholders like industry, consultancy and Govt. dept.
- Focus on improving individual skills
- Exposure to workshop, conferences and seminars
- Specialized library
- Industrial visits



- Last Date for the submission of application forms: 30th June 2021

Refillable - A Portable Zero Waste Refill Station Solving the Single use Plastic Crisis

Purav M Desai

Co-Founder, Refillable

An average Indian household consumes over 84 bottles of home care liquids annually which translates to generating over 100 kgs of plastic. Now add your monthly groceries which all come packaged in plastic and just think of how much plastic each of us generate. The single use plastic problem is pretty well documented and our prime minister Shri Narendra Modi has been repeatedly calling out to people to stop using single use plastic and implementing bans.

The issue currently is that the alternatives available are either pseudo environmentally friendly or not commercially viable. A major issue is that we need to understand the entire lifecycle of packaging to measure its overall carbon footprint. For example : The raw material needed to manufacture the product, the emissions while manufacturing and transporting the packaging, the emissions while collecting back the packaging, and the recycling of the same if it is recyclable. The entire process is pretty carbon intensive. Therefore the golden advice or the old age philosophy always goes as REDUCE first, REUSE post that and then RECYCLE. Although the message is pretty self explanatory, there are a lot of layers to it. Firstly, the function of packaging is to maintain the quality of the product and ensure it is not tampered with. Secondly, although reducing and reusing is well understood by people, it takes a lot of time and effort on people's end to follow through. In today's fast paced life, not many people can afford both time and effort for something which does not benefit them but the society and environment at large.

In an ideal world, the government, the corporates and the customers can collectively take action and the process can be seamless but it still seems a while away till someone takes responsibility for the packaging. Therefore we came up with Refillable to solve the crux of the environmental problem by adding value to both the corporates and the

customers. Refillable is a portable refill station that refills your homecare liquids at your doorstep and eliminates any kind of packaging. The aim is to make quality products affordable and accessible to all without any carbon footprint.



How does it work ?

Step 1) You place the order for your select home care liquids on www.refillable.store
Step 2) We schedule a visit by the refillable truck to your doorstep
Step 3) You bring your own bottle or purchase a durable bottle from us at a one time cost
Step 4) You select the liquids and the quantity required by you and refill the bottles
Step 5) You have saved X amount of plastic from entering the landfill and the process is to be repeated as and when you run out of liquids to amplify your impact.



Advantages of the Refillable Model

We are combining the convenience of an E Commerce delivery with the environmental benefit of a refill station/zero waste shop.

- Affordable : Usually Sustainability is always considered to be more expensive than the current alternatives. Via Refillable we are able to offer a minimum of 20% discount than the MRP cost since we directly work with brands and pass on the benefit to consumers.

- Accessible : Anyone can place an order at any time on our E Commerce portal.

- Convenient : People have to remember to carry bottles to refill or reusable bags to shop. It is not really convenient. We provide a complete doorstep service.

People have to remember to carry bottles to refill or reusable bags to shop, instead we provide a complete doorstep service to eliminate the inconvenience.

- Environmental Benefit : We eliminate any kind of packaging(primary or secondary), so REDUCE is a priority in our model. This is done by reusing and refilling the existing packaging. The emissions while transporting is also reduced since we use green vehicles.

Each Refillable vehicle is capable of reducing 100,000 kgs of plastic annually.



Value Add For Customers

- Environmental - They can track the amount of plastic they have saved from entering the landfill.

- Subscription - In today's day and age, everything is automated such as viewing content, music, shopping, bill payments. So we also offer timely refills in zero waste format.

- Incentivising/Gamification - We will start rewarding customers for their green behaviour by adding incentives after they do an X number of refills.

Operations

- We'll be having strict quality control and measures in place such as 24/7 remote monitoring, batch coding, data logging and sop measures

- Covid control measures such as no contact dispensing, regular cleaning, masks and gloves for operator, contamination protocol

- We will be servicing the entire Mumbai region by dividing it into different zones and catering to online as well as offline orders.

Marketing

- We are building a community of people who care for the environment so a lot of it is generated via customer reviews, referrals and word of mouth.

- We are reaching out to housing societies and RWA's to cater to multiple apartments at a single time

- We are tying up with like minded organisations to reach out to more people.

- We are listing the service on different online platforms

Growth

- We are looking to tie up with major corporates in the sector to help them negate their plastic generation

- We look to offer franchises and foster micro entrepreneurship by creating a playbook which will include but not limit to the Refill truck retrofitted

with the machine, back end and front end technology, tie ups with major brands, marketing, operational, commercial excellence along with it.

- We also look to add more product categories on our platform and help eliminate plastic from all the different categories. This will work on a returnable model since the refill truck would be able to carry only an X number of SKU's

- We aim to create an entire refill ecosystem by tying up with major departmental chains and brands to set up IOT enabled refill stations at their premise to help already existing shoppers to go plastic free.

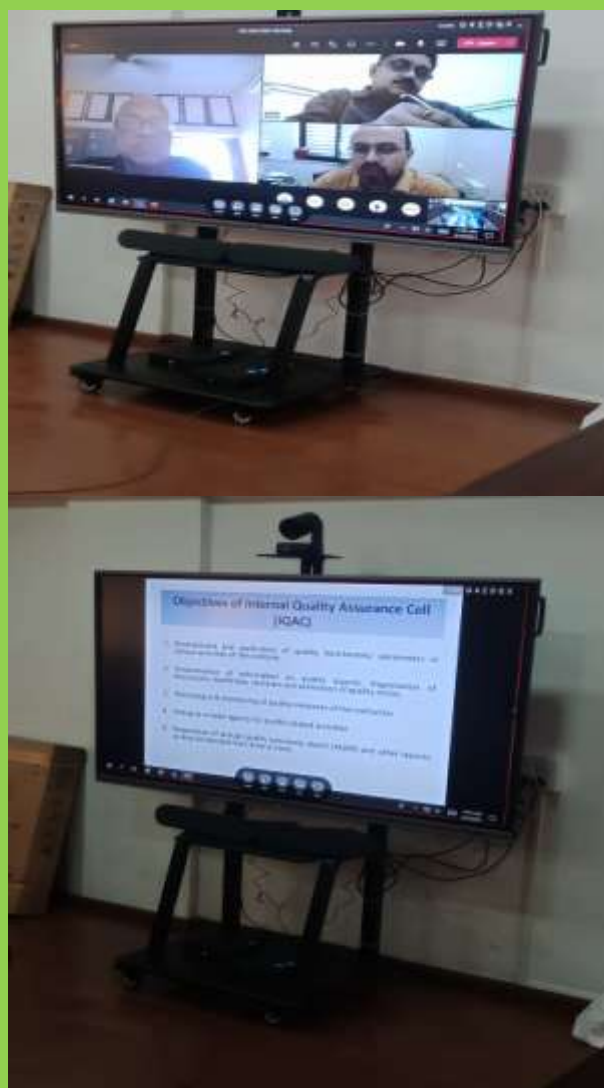
- Our expertise also goes in offering packaging made out of crop waste.



Therefore we aim to provide brands and customers an entire service which is environmentally friendly at the core, scalable and commercially viable. We have to ensure that the consumer mindset is right and difference is made at the core. We need as many people to shift from the make-use-dispose mindset of the linear economy to the make-use-reuse mindset of the circular economy. The change that the Refillable truck will bring about will not just be limited to saving plastic or carbon emissions but change the consumer mindset and create a bigger dialogue to create the change.

We really hope that more people venture into the space since we need more hands on deck. The sector is at its inflection point and the people who enter the space will reap the rewards. Finally it is important to remember that we don't want 1,000 people to do zero waste perfectly, we need millions to do zero waste imperfectly!

SIES IEM has established Internal Quality Assurance Cell (IQAC) at institute with objective to enhance and strengthen quality of academics, research, administrative and outreach activities at institute. The first meeting was conducted on 19th March, 2021 to established Internal Quality Assurance Committee (IQAC) with eminent experts from academics, research and industry sectors.



SIES IEM Organized 4th Prof. Purushottam Khanna Memorial Talk on Friday, 5th March, 2021



Prof. Mukesh Khare, Department of Civil Engineering, Indian Institute of Technology, Delhi has delivered 4th Prof. Purushottam Khanna Memorial Talk on the topic, ‘Environmental-Wind Tunnel (EWL) in Air Pollution Management’ on 5th March, 2021. Environmental Wind Tunnel enables to control all the variables in field and supports in air pollution management in less time and money. EWL is applied at many traffic signals in New Delhi and will be effective in long run.

SIES IEM Initiated E Waste Collection Drive at SIES, Nerul Campus with Rotary Club of Smart City of Navi Mumbai and NMMC



Disclaimer:

Editors have taken utmost care to provide quality in this compilation. However, they are not responsible for the representation of facts, adaptation of material, and the personal views of the authors with respect to their compilation.

RUR Greenlife: Sustainable Waste Management Solutions

Dr. Aparna Pandey

Research and Sustainable Programme Manager

RUR GreenLife Pvt. Ltd., Mumbai

The greatest threat to our planet is the belief that someone else will save it” –

Robert Swan

Look around your room for a minute. What do you see? Perhaps an empty plastic bag? Use and throw water bottle? The wrapper of the delicious biscuits you enjoyed in the morning? We could keep going.

Over the years, changes in lifestyle and an improved standard of living have raised the per capita waste generation. Our unending strive for convenience has led to us choking our future, for we are now facing a goliath of a challenge in terms of effective waste management. It doesn't stop there! Lack of an efficient segregation system, an unaware community, and insufficient recycling infrastructures makes it difficult to maximize recycling. These were the thoughts that constantly circled Monisha's mind back in 2007 when she took

their childhood that I grew up with, So I decided to take up the problems and tackle it myself”

By starting as an activist and volunteer forum, she led her team and went door-to-door to distribute over 10,000 cloth bags to vendors and shopkeepers, with the vision to create awareness about reusable, upcycled cloth bags. But we know it's a human tendency to not value what we get for free. Monisha soon recognized the flaws in volunteering- be it the lack of accountability, problems associated with scalability, and gaps in the technology that existed. It was certain, philanthropy wasn't enough, and hence RUR Greenlife was born as a structured for-profit social enterprise in 2010, offering value for their products and services.

But, why waste management? We already have municipal bodies keeping the city clean, right?

YES. And NO.

According to the United Nations, we globally dump a massive 2.12 BILLION TONS of waste per day. To give you some perspective, if all of this waste was put on trucks, we could circle the world 24 times! Presently, India accounts for roughly 18% of the world's population and 12% of the global Municipal Solid Waste (MSW) generation (Jaganmohan, 2021). A recent study by FICCI on MSW generation in India suggested that a whopping 110 million metric tons (MT) will be



a sabbatical from work, after *“I wanted my kids to enjoy the same greenery and environment in*

generated in the year 2021, which is only going to be doubled by 2041 (FICCI, 2019). Moreover, Maharashtra leads the states in waste generation with 22.5 thousand MT/day (Lok Sabha, 2017). These mammoth numbers are a result of rapid changes in lifestyle choices and rising consumerism. 99% of what we buy is discarded within 6 months, a plastic bag is used for an average of mere 12 minutes while taking over 1000 years to decompose. Narrowing our focus to Mumbai, as per MPCP's annual report, the city has doubled its waste generation from 6500 MT in 2010-11 to 11000 MT in 2015-16.

Although the responsibility of waste management is primarily assigned to the Urban Local Bodies (ULBs) which focus on collection, transport, and disposal of wastes into landfills, the lack of technology, efficient infrastructure for segregation at source, awareness, and capacity building leaves this sector largely unorganized. Besides, mixing of waste often leads to loss of resources and unhygienic conditions for the waste picker community. Transportation leads to the generation of GHGs in anaerobic conditions and an increased carbon footprint with the burning of fuel. Moreover, Brihanmumbai Municipal Corporation (BMC) alone spends about INR 3,000 crore on solid waste management annually. With numbers surging so drastically, there is a prompt need for simple and sustainable solutions to address the issue of waste.

This is where “Business for Change” comes into the picture, and RUR Greenlife has been reducing the burden on our overspilling, saturated landfills over the last decade. With over 50 decentralized community composting project sites, we strive to

address the issue at its source and hence ensure everyone is aware and accountable. Our team, trains and equips the waste management staff with the necessary skills to carry out segregation and composting, thus offering dignified labor and a sense of gratitude towards the work you do. This helps bridge the stigma associated with the waste picker community, and the residents now see them as Green Crusaders, providing them with a platform to share their journey and motivate others. It instills a feeling of accomplishment and job satisfaction which pushes them to contribute further and be a continuous part of the bigger picture.



This systemic change in perspective is what decentralized waste management brings in and captures the essence of what Ecopreneurship is all about. The social values and mission drive its margins, and the profits are reinvested back into the business to scale its social impact, thus being a self-sustainable organization. It promotes collaborations and partnerships to bring about high-impact goals, which is the encapsulation of SDG 17, formed by the UNDP. A successful example would be the “Go Green with Tetra Pak” initiative, where we worked with Tetra Pak, Reliance Fresh, and Sahakari Bhandar to recycle over 4.5 million cartons and give them a new life as class-

room desks, garden benches, and notebooks. Moreover, RUR Greenlife has a manufacturing unit that provides job opportunities for engineers and support staff to ensure quality in production. It also serves as a hub for creative minds in the form of research scientists, who're drawn to troubleshoot the process and bring field trial feedbacks. This also extends to consultants and business mentors, who help the organization grow—highlighting the importance of multi-faceted organizations and leveraging the competencies that each team member brings to the table.



In sum, it's the rekindling of the forgotten “people” aspect of business that drives the company. From educating over 3 Million people to diverting 650,000 Kg of waste from landfills, RUR has come a long way, which wouldn't have been possible without the core team of young and dynamic changemakers. This network of creative thinkers, videographers, blog writers, interns, social media experts, scientists, marketing, and business developers is only growing, providing a whole arena of opportunities for the youth.

The world needs more green warriors and so does RUR. The question is

R U Listening

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Environment in News

A Surge in Green Financing Boost Climate Business

With the awareness of the magnitude of climate change grows, market forces are luring investors into all sorts of “green” finance, nearly doubling the size of green bonds and green equity funds. These investors are looking up and down supply chains and searching not only for established companies, but also for innovative ones at early stages of development. The International Energy Agency estimates that [global investment in low-carbon energy](#) will have to increase 2½ times by 2030 from its current level of about \$620 billion a year to meet targets in the Paris climate agreement.

The Washington Post, January, 2021

Chloride Content in Atmosphere is increasing

In a long term research conducted in smog affected cities, it was observed that concentration of chloride is increasing in the atmosphere. The main sources of chloride in the atmosphere are the burning of municipal solid waste especially plastic. The extra chloride could promote chemical reactions with other air pollutants. This includes adding to the increasing ground level ozone that causes decrease in crop production by 20% to 30% in India.

The Guardian, February, 2021

MoEFCC Proposes Three Stage Plan to Ban Single Use Plastic by 2022

A set of draft rules are issued by MoEFCC to ban single use plastic in three phases. The phase -1 will be implemented from September, 2021. The draft rules propose that each sheet of non-woven plastic carry bag shall not be less than 60 (GSM per square metre) or 240 microns in thickness and that a carry bag made of virgin or recycled plastic shall not be less than 120 microns.

In second phase, the sale, use, manufacturing, stocking, import and distribution of six categories of items which use single-use plastic including earbuds with plastic sticks, plastic sticks for balloons, plastic flags, candy sticks, ice-cream sticks, polystyrene (thermocool) for decoration will be banned with effect from 1st January, 2022.

The third phase will start from 1st July, 2022 by banning the single-use plastic plates, cups, glasses, cutlery such as forks, spoons, knives, straw, trays, wrapping/packing films around sweet boxes; invitation cards; cigarette packets, plastic / PVC banners less than 100 micron and stirrers.

MoEFCC, March, 2021

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Articles, photos etc. are invited for next issue (April – June, 2021)
Theme of next issue of Newsletter ‘Ecosystem Restoration with Focus on Resetting our Relation with Nature