RECLAMATIONS

...STORIES FOR FUTURE

A compilation of amazing stories of entrepreneurs in the Waste Management Sector

"Stories of tenacity that inspire"

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BADUKU - A CENTER FOR LIVELIHOODS LEARNING

CENTER FOR YOUTH AND SUSTAINABLE DEVELOPMENT

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Foreword

For many of us, once waste is outside our door and out of sight it goes out of our minds as well.

In such a world, what motivates and drives someone to set up an enterprise that actually starts with the waste of our society? What has been their journey from the time they were inspired by a vision to actually managing an organisation that converts waste into useful resources or products?

In this collection of vignettes we introduce you to some remarkable young men and women who have found innovative ways to collect, segregate, recycle and up-cycle waste. As you meet these pioneers in the pages that follow, you will discover how they have not only created dignified livelihoods for those who handle waste, but have also engineered technological solutions and business models to generate wealth from what is unwanted and discarded. More importantly, these waste entrepreneurs are reducing pollution and other problems caused when waste is sent to landfills and incinerators or dumped into drains.

They have forged these efforts and ensured their sustenance by creating a path for the much needed dialogue between governments and communities. They have demonstrated that we need to be smart in viewing governments and their policies as enablers and we need to strive for policies that bring in efficacy in operations.Alongside each entrepreneur has cautioned us against becoming overly dependent on governments for solutions and finances, emphasising that solutions come from people and and value-based partnerships.

Conversations with Waste Adventurers across the country brought us in touch with quirky and interesting people. **Rahul Nainani**, the 28 year old founder of *Raddiconnect* in Mumbai, attended a Google sponsored "start-up weekend" where he found his love for numbers transforming into an idea for a waste based enterprise. **Achitra Borgohain,** who

founded *Binbag* based in Guwahati, is committed to the idea of "distributed recycling" of e-waste and of tech-garbage and is driven by his vision of a circular economy where all waste comes back into usage. Binbag helps to deal with all kinds of equipment, assets and even data that is no longer needed! From Pune we bring you **Amita Deshpande** of *ReCharkha*- an organisation that has re-cycled and woven more than 15 lakhs plastic bags and up-cycled various kinds of wastes to make exquisite home décor and accessories.

Closer home in Bengaluru, we have **Wilma Rodrigues** who started *Saahas* to address the issue of e-waste and plastic bags. Today Saahas is a large company providing reverse logistics waste management services to IT parks and big corporations.

At the other end of the spectrum is *Khalibottle* is an online platform for people to sell any scrap they have in their homes in lieu for cash or donation coupons. **Naveen Mariyan** worked in the Hotel industry and then with Zomato before pursuing this idea. Today that idea is a not so empty Khalibottle! A very different approach is visible in **Shekar Prabhakar and Nalini Shekar,** who established *Hasirudala*. They have focussed on improving the lives of rag pickers and ensuring their dignity as waste workers/waste vendors while providing dry waste solutions to residential complexes.

The need for hi tech aerobic digestors to deal with large quantities of food waste and convert it into aerobic compost has been addressed by *Shudh Labs*. **Ramanan Natarajan** founder of Shudh labs also provides waste management consulting and training services. Another hi-tech waste based enterprise is *Neshaju Envirotech* founded by **Ganesh Chari.** Ganesh has established a e- waste recycling facility where precious metals, plastic and glass are recovered from e- waste.

Not only do we introduce you to a wide array of waste adventurers, we also introduce you to a Trust that is committed to generating even more waste solutions. **Gayathri Handanahal** of *Waste Impact Trust* has been organising waste hackathons, and has set up an ideas vault to store and generate ideas so that more and more waste pickers and communities are empowered while waste is managed.

This E-Book has been made possible by Sampath, Faculty at Baduku who coordinates the Waste Management Certificate Course. While seeking placements and internships for students **Sampath** came across these wonderful entrepreneurs and the idea of this e-book emerged. Most importantly, **Shraddha N V Sharma** conducted the interviews and meticulously documented each one's story in an effort to capture the unique and distinct character of each enterprise and each entrepreneur!

We are thankful to all the entrepreneurs who have engaged with us at so many levels and look forward to our journeys together in reclaiming lands (from landfills) and dignity in livelihoods.

Anita Ratnam, Executive Director , Samvada

Introduction

Waste Management is a collective, conscious effort that requires basic engagement from everyone involved. The current situation of waste disposal in our country calls desperately for a change. It is one of the reasons why the “Waste Adventurers”, the 2 month waste management certificate course was started at *Baduku Kalika Kendra* and is celebrating the successful completion of two years. Today, with as many as 47 youth in our alumni network prepared to work towards waste solutions, Baduku found that a deeper understanding of the dynamic field is essential.

By gathering stories of 9 waste based entrepreneurs, the attempt here is to gain insight into what makes an entrepreneur successful in the waste management sector in the country. Through the narratives of the entrepreneurs, the stories provide descriptions of the business models, scientific techniques, marketing strategies that their companies have explored and found useful.

At another level, the stories unpack the particular modes in which factors such as social capital, financial support and technical knowledge help in establishing waste based enterprises. We also see what role mentoring in matters scientific and business as well as government policies have played in the journeys of the variously located social impact companies.

This story documentation process also comes at a time when the COVID 19 pandemic has affected economies across the globe, India being no exception. However, the demand for waste management services is never ceasing as waste generation grows, faster than before with hospital waste needing utmost caution and single-use plastics regaining popularity. In this context, the stories try to gauge the chances of employability, challenges as well as the scope for starting-up in the current economy.

Finally, for an organisation invested in building sustainable and socially relevant livelihoods and careers for the youth, the story documentation helps understand how best to incubate successful enterprises. Specifically, it speaks to the Certificate Course in Waste Management offered by the Centre for Youth Sustainable Development on how to incorporate the skills and perspectives presently required in the field for entrepreneurship.

Ganesh Chari

Founder, Neshaju Envirotech Pvt Ltd
https://www.neshajuenvirotech.com/
Ganesh Chari
Founder, Neshaju Envirotech Pvt Ltd

Originally from Goa, Ganesh Chari moved to Bangalore to pursue his higher education. The village he grew up in barely threw anything away. They recycled in small ways or segregated the waste efficiently. Here in the city with dumpyards within eyesight, the problem was stark. Ganesh acknowledges that Goa too faces its own problems with managing waste, owing largely to tourism among other factors. These realities made him and his friends sensitive to waste and how it was indeed a resource. It led him to volunteer with NGOs that were involved in cleaning or recycling drives blogging about the environment for about 10 years. Then he decided to establish Neshaju Envirotech, along with co-founder Manjunath J, to make a deeper impact in the field of waste management. Their company is invested in converting e-waste into resource.

The initial stages

"I remember in 2007, when I was studying in Bangalore, I would wear sweaters all the time. And look around now... the average temperature feels nearly 3 degrees higher in just a little over 10 years. That is very serious," Ganesh reminisces when asked what motivated him to be involved with sustainability. He adds: "The situation in Bangalore is something that can be turned around. We realised this many years ago."

When their group of friends had approached the government for permission to convert a dumping yard into a recycling unit, they were turned down. Ganesh recalls that they did not have the required experience or the finances to take up the task then. The still determined group then began conceptualising a corporate company that would provide a 360 degree solution to waste. But as they approached potential clients, they were faced with several challenges including the fact that their license was still under process. They didn't have the land or the recycling and treatment facilities that people sought. For a while, they worked on multiple streams of WM including solid, composting of organic waste, agri waste, e-waste, and converting plastic waste to hydrocarbon, its monomeric form, rather than recycling. This way, they felt, they would rely on multiple resources.

After a year's struggle with this model, the company turned their approach into a phased one - with different targets for each phase. In the first and important phase in 2018, they decided to focus on e-waste. With the help of their network of friends, they narrowed down on a piece of land in Mandya, where their recycling plant is currently coming up.

Neshaju Business (& Science) Model

At their plant, the company aims 100% recycling through a first of its kind sustainable process that is entirely tech-oriented. With negligible or no water use even for cleaning, the company has developed a 80-90% dry process that involves some amount of chemicals & microbial leaching for metal recovery.

At the collection level, Ganesh admits that their first idea to approach educational institutions was met with disappointment. Expecting a 5% depreciation, they imagined institutes would have at least 5 computer systems each year that would need replacing. By pitching interactive awareness programmes related to e-waste management in the schools and colleges, they would also encourage the institutions to contribute to the collection. But while schools were interested in dialogue on waste, their managements were either not interested in contributing or quoted high prices that would never have practical value for Neshaju. Although the company was offering certificates to institutions that took part in the exercise, they had to drop the model in 2019.

2020 began with new possibilities for Ganesh and his partners. Being selected for the Indian Institute of Management, Bangalore (IIM-B) Launchpad, the company received mentoring and support from the premiere institution. Neshaju Envirotech was also chosen as one of the start-ups to receive incubation support for a year along with the possible grant of rupees 50 lakh to 1 crore by Indian Institute of Technology (Shimla) Mandi. These milestones have placed the start-up in a stable and hopeful place.

Challenges: Technical expertise over government support mechanisms

The current system of licensing for start-ups in the broad area of recycling requires prior land ownership. Ganesh feels that on the one hand, this means that only those with huge funds can get into the enterprise. On the other, it means the sector continues to be largely informal. The consultancy charges for the licensing process are also steep.

Even in the time of the COVID 19 crisis, Neshaju Envirotech has employed their technical knowledge and worked on water treatment, managing of single-use plastics, multi-layered plastics, cardboard boxes, paper cups and other wastes that other organisations find difficult to recycle, and often are dumped or burnt even after segregation. The company developed a method of pyrolysis that converts them into hydrocarbon, char and gas. Despite these continuous efforts, being recognised by the state has been challenging for the team. Still having to struggle for licensing, Ganesh and his partners have invested rupees 20 lakh so far from their own savings.

Through all their challenges, Ganesh feels that his background in organic chemistry, clubbed with his partner's education in biochemistry, has given them the scientific expertise to take the organisation forward in the field of sustainability. "Innovation and upgradation is essential for sustenance in the industry," he asserts and adds: "We actually lack in the business aspect but we are able to learn." The company has recently been working on remodeling their entire marketing and social call strategies to reach out to customers.

Waste Based Entrepreneurship in the times of a pandemic

Lately, the company has begun to focus on collaborating with collection-partners from different semi-urban centres and are interested in more such tie-ups from rural centres. They believe that decentralization will help in entrepreneurship at the collection level to begin with. "It doesn't need daily monitoring by us since they have knowledge about their

local settings. We are not interested in collaborating with big corporations. Young people can start out this way and it doesn't have to necessarily be with us, but with anyone working locally."

Ganesh and the team at Neshaju Envirotech are committed to knowledge sharing and have been conducting sessions on sustainable waste management even amidst the pandemic. "We have to do it because it is the common people who create the waste, but it is the rag pickers who manage it. If their standard of life has to improve, everyone must understand the value of managing waste," Ganesh signs off.

Naveen Mariyan
Founder, Khalibottle
https://khalibottle.net/

Naveen Mariyan
Founder, Khalibottle

Every weekend, Naveen, the founder of Khalibottle, moves around the city in his private vehicle to collect dry waste from customers' houses. His small but dedicated team of 13 employees offers scheduled pick-ups for Bangalore residents wishing to sell their scrap, as well as hands on training in segregating their dry waste.

Around 2007, Zomato and other aggregators were just beginning to make a mark on the market and had not yet moved into the service sector. Armed with formal training in Hotel Management and a few years of experience in the industry, Naveen had begun to conceptualise an online platform for listings of kabadiwalas in the city. In preparing for this venture, Naveen and his friends conducted a survey covering about 800 outlets across Bangalore. But the economic slowdown and the following IT layoffs of 2009-10, made the group drop the plan.

The initial stages

After a few more years, an experiment or two in entrepreneurship, and a year of experience with working on Zomato backend, Naveen felt it was time he gave the waste based idea another shot.

To add to the data collected in 2007, Naveen led another 10 day survey to assess the current scenario in waste collection and recycling. The one thing that stood out was the mushrooming of hundreds of gated communities that wouldn't allow entry to kabadiwalas. In this context, in 2015, Khalibottle was founded with the aim to professionalise the space of scrap dealing - including for those who were to work at the level of collection.

29-year-old Naveen recalls how, in the beginning, he would use his brand new four wheeler for all the collection drives. The company that started with a target of 300 kilogram per month managed to reach 3000 kilograms in the first few months. Even though they had managed to acquire a share in the market and had repeat-customers, the awareness among citizens about the need for waste segregation and the adverse ecological effects of dumping was low. In recent times, though, Naveen feels the sensitivity towards environmental issues is growing among urban dwellers.

The Khalibottle business model

In the initial days, the company had varied options in return for scrap including coupons, cash and even "donate for a cause". They phased these methods out with the rise in cashless, online transactions. Now customers use the online application or the website to schedule a pick up, indicate what kind of waste they intend to sell among the 15 different kinds that Khalibottle deals with, and receive their payment within 48 hours from the time of pick up.
At the company's end, after having offered a good price to the sellers, Khalibottle gains a margin while providing the recyclers with quality material. Naveen says that although sellers may sell all the plastics they own, much of the low grade plastic gets rejected by recyclers or

has very low value. The company has made sure to only work with authorised units - about 15 across Karnataka and 35-40 across South India, including in parts of Tamil Nadu and in Hyderabad. Cardboard products are delivered to Doddaballapur, and plastics to Kumbalgod. These units ensure zero waste to the dump yard, selling the recycled material to agents who then find manufacturers to bring the material back into the system.

The company now transacts with about 30 - 40 tonnes of waste per month, collecting from individuals in about 46 apartment complexes, across 15 locations in the city. Yet, this comprises only 2% of the city's market share according to the founder. "We have received requests from bulk generators," says Naveen, and adds: "But we have chosen to work with individual producers and stay in this segment for a while. We also are not looking for big investors because it will affect the employees and hiring process."

Khalibottle has been working towards an inclusive hiring process from the very beginning. Naveen and the team visit the villages they are familiar with and speak to government school principals or the panchayat to find young boys who may have dropped out of education due to adverse circumstances and offer them training and a full time job to follow. These employees hired into the Collection team then grow into Customer Support and can eventually graduate into the Online Support Team. The company provides the employees accommodation in the city as well as mobile phone upgradation every 8 months or so.

Although the team had to be downsized post the first national lockdown owing to COVID 19, the requests for collection rose by nearly 70%. Using the disposal of gloves and masks as a starting point in the context of the pandemic, the marketing team along with experienced members of the collection team have been working extra hard on raising awareness on the need for waste management. Naveen shares insight on this segment that it is young people, working women and homemakers who are most interested to learn how to segregate their own waste.

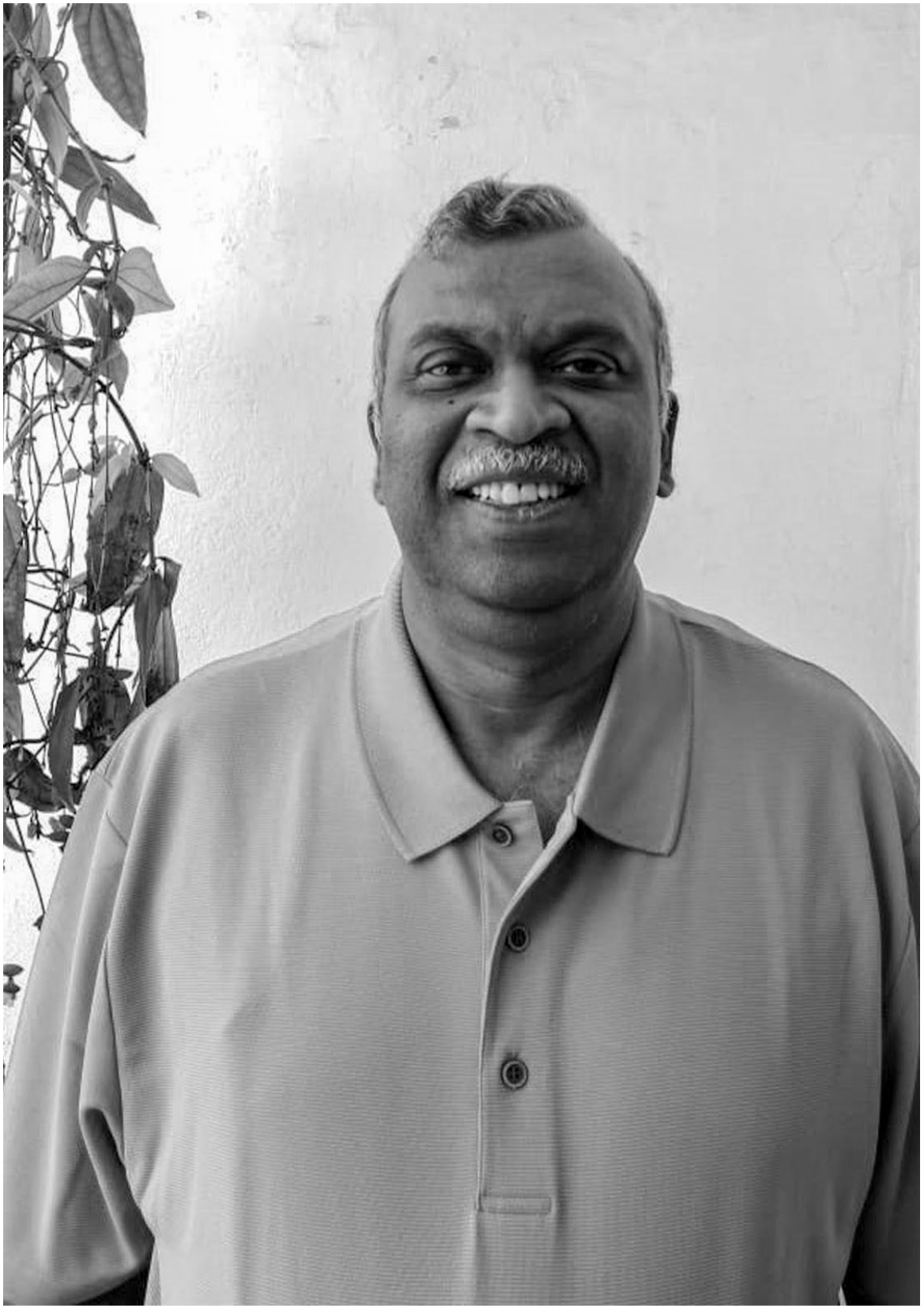
Support systems & investment

The current rules for solid waste management, notified as recently as June 2020, can be adapted and improved and used for the next 10 years according to Naveen. However, the sector has a drawback even if companies are recognized as MSMEs. With big landed corporates entering the sector, much of the hiring as well as client finalization happens exclusively, in closed circles. Khalibottle, while being in this field of social impact, asserts that governments need to empower businesses that follow inclusive models.

Naveen feels that the government rules can only go so far and needs to be accompanied by individual behavioural change too. He thinks this is what would make for a conducive environment for waste based enterprises. "It's a never ending business. Nobody can ban plastic for instance, but we can reduce and reuse," he says. He believes that although it's a tough industry to begin in, youngsters need patience and confidence to explore the multiple categories of waste they can innovate and work in.

At a time when decision making was getting stalled due to differences with partners, Naveen had tried to push up the pace by buying the shares worth lakhs and clearing all investments. Since then he believes the approvals, processes have been smoother. He believes these investments, if sustained, will begin to create good returns in the next five years or so. But he is among those in the industry who believe starting a business may be more difficult in the COVID impacted economy than even before.

“In the long run, in about 5-10 years, there will be more professionals in the sector, in our segment too. Courses like yours will start reflecting in the waste scene soon,” he says and adds that the quick changes in the field before and after COVID can be utilized for the better by these professionals.



Shekar Prabhakar
Co-founder, Hasirudala Innovations
https://hasirudala.in/

Shekar Prabhakar
Co-founder, Hasirudala Innovations

The Hasiru Dala organisations, both the NGO focussed on advocacy and the company that was born out of the need to provide services, are much talked about in regional as well as national media. With as many as 450 clients as a Bruhat Bengaluru Mahanagara Palike (BBMP) empanelled service provider, Hasiru Dala Innovations has a large presence in the city.

Shekar, whose education has seen the trajectory from IIT to IIM, worked in sales and marketing in India, briefly in the UK and then in the US from 1996 to 2007. On returning to India in 2007, he once again took on a role in the corporate sector. He recalls how at the time he did not wish to continue in the field, either as CEO or as a consultant and so turned to teaching by taking up the position of Associate Professor at Welingkar Institute of Management. At the same time, from 2013, he was also a trustee at Hasiru Dala, an organisation of wastepickers, headed by his wife Nalini Shekar. Nalini who had worked with the Kagad Kach Kashtakari Panchayat in Pune in 1991, is through whom Shekar received an exposure into the issues related to waste management.

The initial stages

The NGO, from the beginning, focused on justice for wastepickers and stresses the need to work *with* the wastepickers to formulate intervention related to identity rights, family education, healthcare, housing, skill development, market and employment access, and policy advocacy. Shekar, however, felt that he did not have the competency to take on a position within the NGO with no experience in the development sector. It was in 2015, when the team came to believe that the organisation's work is scalable, that Shekar decided to plunge in and invested capital in Hasiru Dala (HD) Innovations.

The founder also has a distinct and fond memory of what influenced his shift to working with wastepickers. Annamma, a wastepicker who was associated with the organisation had, in 2015, brought her three daughters to the office. The youngest of them had walked up to him with a handwritten invitation in English, inviting them all to their housewarming ceremony. He recalls: "Annamma was providing her children with good education. If she had been able to bring about such a quantum change in the quality of their lives in four years, then this was what I wanted to be doing."

Support systems & Investment

According to Shekar, it was the policy around waste management implemented by the BBMP that created the business opportunity to start HD Innovations. It opened up the possibility to be an empanelled vendor with the governing body to collect and transport organic wet, inorganic dry, and domestic hazardous waste and rejects for bulk generators, i.e., anyone generating more than 10kg of waste on an average per a day.

Through this opportunity, the company developed an innovative supply chain model where the wastepickers themselves are enabled to become entrepreneurs, working as the primary collectors. The waste they collect, belongs to them. Additionally, HD Innovations offers them with services including sales, marketing and secondary transportation, as well as treatment of dry waste. This way, the company creates the space for two sources of revenue for the wastepickers.

In Shekar's experience, it was the citizens' support, the strong citizen activism around waste and environment, alongside policy that truly helped them establish themselves in the city. "On an issue such as this, it is important to constantly work with all stakeholders - the bureaucracy, elected representatives including MLAs and corporators, as well as citizens."

Shekar believes that while waste management is a government utility and is a sub-matter of the local governing body that gives permission to operate, it is important to have a business model that is independent of the government. "The B2B model is a key factor, at least initially," he says. While pointing out that the governing body helped them win a concession to be a service provider in Electronic City, he stresses that it was the clear approach of HD Innovations to focus on the private contract between the company and clients that helped them grow financially. The company closed at an impressive 12.5 crore annual revenue last year.

Challenges: expertise and innovation

"It's a more tenacious industry than others but difficult to survive in," says Shekar, about the wide waste based space. He feels that while trying a hand in recycling from the location of the organised sector, and fighting to secure rights of the disenfranchised, there are plenty of risks as the work directly challenges the powerful elite who control the informal sector.

"The other option if one is interested to be in the waste based field, is to work in science & technology, and have the know-how of converting waste to value," he says, using examples of methodologies such as chemical recycling, biomethanation, automation of segregating and recycling that may be easier to navigate with an educational background in inorganic chemistry or electromechanical engineering.

But the choice between these two options, he feels, depends on what one wants to do within the industry, "on whether you want to be an enabler to others or you want to convert waste to value."

Waste Based Entrepreneurship in the times of a pandemic

"Waste is one of the primary problems in urban settings. As long as we are a consumption-oriented society, we will always require workers, service, enterprises, technological innovations in waste management," Shekar assures, adding that prospects are very promising in the developing world. With a growing demand for upcycled products, he feels upcycling and product design is an area with a lot of potential in current times.

According to him, the economy that was affected by COVID 19 is slowly chugging along and its adverse impact may only be short term while waste management will keep growing in the long run.

With decades of experience, the businessman believes that young people who are keen on working in the industry ought to be passionate about waste, workers rights and the environment. For those who do not have the backing of an education in science and technology, Shekar stresses on the need to be skilful at operations and logistics to be able to run the business like an intensive utility service, no matter what kind of waste they are dealing with. Lastly, he acknowledges that to start-up in this industry one either needs to have deep pockets or a model in hand that can stand independent of the government even if it means being able to win a tender in the beginning and create consistent revenue there on.

Wilma Rodrigues
Founder, Saahas
https://saahas.org/

Wilma Rodrigues
Founder, Saahas

With an educational background in life sciences, Wilma Rodrigues had had an unconventional career path, from working as a tour guide to journalism. Today the 58 year old leads Saahas Zero Waste in Bangalore. What started off as a not-for-profit with a small all-woman team of 5 field staff members, has grown into one of the most established social impact enterprises in the country.

Many media houses have written of how waste captured Wilma's attention: of how she worked with the India Tourism Development Corporation, showcasing heritage sites to tourists and constantly encountering the garbage piling up on the streets. Later, in her years as a journalist, she was involved in and wrote about environmental issues, before moving to Bangalore and working with The Energy and Resources Institute.

The initial stages

In 2000, with the coming of the Municipal Solid Wastes (Management and Handling) Rules, Wilma began conceptualizing a model for resource recovery in the city. In 2001, Saahas Zero Waste was registered as a non-profit organisation. After initiating campaigns around behavioural and attitudinal change, Saahas set up its first on-site waste management unit in 2004 for State Bank of India. "It took me a year to close the deal with one client!" Wilma explains, "and while I was in conversation with people at different levels, we had to keep trying multiple options to bring in revenue."

One of the objectives of the organisation, which remains their main prerogative to this day, was to provide a solution to waste that brings social justice for those working on the ground. "We were focused on creating a formal system, something that would give dignified jobs or entrepreneurship" says the founder, adding that they did not want to continue perpetuating exploitative waste picking. For this to be achieved, revenue-generation was essential. Seeing that their waste management service worked well in a business model framework the team in 2013 decided to set up its for-profit body Saahas Waste Management Private Limited, alongside the NGO. According to Wilma, this was possible because they practically applied their belief that producers of waste also have a responsibility in its careful treatment towards a circular economy.

The Saahas Zero Waste model

Before setting up the for-profit, the organisation had introduced community-based, decentralised recycling units called Kasa Rasas in the year 2012. These community waste processing centres are housed on government provided land, and set up by non-profits with infrastructure support by corporates. The organisation believes that these centres provide dignified livelihood opportunities for waste workers as each centre can employ 10-15 staff members who manage 1-1.5 tons of waste per day.

Today, Saahas' for-profit entity provides on site wet waste processing and segregation of all recyclable and non-recyclable solid waste, diverting it from entering landfills from residential areas & complexes by working with Corporate Campuses, Resident Welfare Associations, property managers, resident volunteers, housekeeping teams, and maintenance staff. The company's management of waste with corporates and Tech Parks and educational institutions also includes data collection and reporting, as well as awareness building programmes to drive home the importance of segregation at source. Additionally, as many similar models do, Saahas also offers zero-waste event management services.

In 2017, the company established a Materials Recovery Facility with a capacity to manage 16 tonnes of waste per day. They work with over 80 clients across Bangalore, Chennai, Hyderabad, Mumbai and Goa, managing 77 tonnes of waste each day. The waste collectors and workers employed by Saahas, whose numbers reach 200, avail benefits such as medical claims and provident fund.

Support systems & Investment

The responsibility of producers towards segregation and towards paying for holistic services was duly capitalised by Saahas to sustain itself in the market. While the non-profit focuses on programmes aimed at behavioural change, the company has gone on to working intensively based on the Extended Producer Responsibility (EPR) model.

Although there are government funding opportunities in the sector, Wilma feels that it may not ensure consistency and transparency and that the process is cumbersome. With more than a decade of experience in the industry, she feels that partial funding from the government for services such as recycling may not be sufficient to carry out all processes in a scrupulous manner and one is pushed to cut costs instead of finding solutions. "For instance, if you resort to burning waste in the open due to lack of funds, it is neither sustainable for the company nor the community," she says.

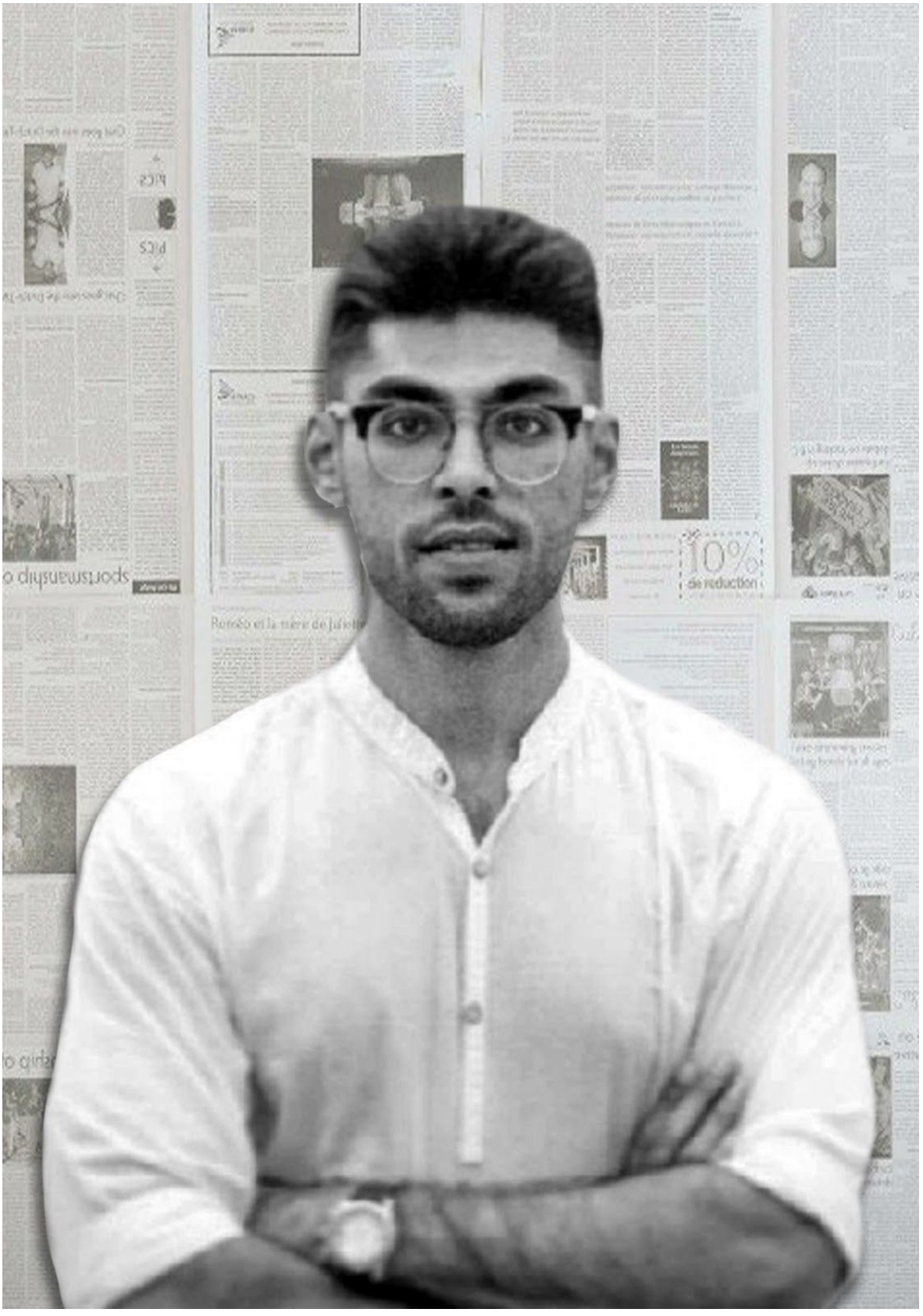
Wilma also admits that securing service fees from waste generators to even pay minimum wages to workers is a difficult task. "But if you know that's the right solution, you must go after it," she says and adds that young people in the industry must develop the ability to stick to the right solutions. She believes that communities and individuals must work to bring focus on industries and not just the government. "Industries can't just talk of compliance and sustainability and not pay for living wages," she asserts.

Waste Based Entrepreneurship in the times of a pandemic

Pandemic or not, it is Wilma's strong belief that the discipline of a 9-5 job, meeting targets and being able to deliver is necessary to be able to grow as an entrepreneur. "That's something you learn on the job and it's not easy. I became an entrepreneur only in my 40's!" she laughs and adds that it is not ideal to get straight into entrepreneurship in the waste industry. She feels that youth interested in contributing to the field must work in environments where they can understand the pressing issues as well as relevant solutions related to waste. "I would say find the real solutions, don't go for short-cuts" she reiterates

and adds that this is what helps the youth understand what segment they would be able to start a business in.

Explaining that persistence is what can get a company going, she offers strategies for the initial stages of a start-up: “It will need intensive follow ups, trying to negotiate with different levels of the clientele and always looking to generate revenue from other sources while trying to achieve your core objective.” Further, explaining that partnerships are something Saahas is interested in, she says that collaborating with bigger organisations such as theirs, where mentoring and co-learning is possible, can help new ventures evolve and establish themselves.



Rahul Nainani
Founder, Raddiconnect
http://www.raddiconnect.com/

Rahul Nainani
Founder, Raddiconnect

After completing his bachelors in accounting and finance, Rahul Nainani was busy pursuing the Chartered Financial Analyst programme (offered internationally by the USA based CFA Institute) in 2015. It is his eternal affinity to numbers that made him passionate about financial education and also what drew him to waste management eventually.

In his search for something engaging, Rahul attended the Google Start-up Weekend. The event is a weekend seminar where about 60-70 participants pitch their business ideas on the first day, then each of them chooses two ideas that they like and the group then shortlists 10 ideas. The participants are expected to work on these over the next three days and pitch their separate ideas to a panel of jury. Rahul and Gurashish Sahni, the founder and co-founders of Raddiconnect, had been exploring several different options before the seminar. Theirs was chosen as the best idea at the seminar. Although none of their initial ideas eventually materialized, Rahul feels it was this experience that offered the young entrepreneurs validation and encouragement to keep trying.

The initial stages

Rahul had learnt about the import of different kinds of scrap, including paper, plastic and e-waste, from different parts of the world into India as if to keep the recycling factories here running. He grew curious about the need for import when the country already generated massive amounts of waste itself “Besides, if you’ve lived in Mumbai all your life, you can’t miss the waste. It’s everywhere,” he says, talking about how he began to dig deeper into the issue of dumping.

The suggestions and appreciation from experts at the Google Start-up Weekend worked as a launch pad for Rahul and his partner. The two felt the need for some first hand research on recycling waste and so spent the next 9 months meeting different stakeholders in the space. They spoke to raddiwalas, local scrap vendors in their areas and larger waste managers and aggregators, reaching out to them either through their network or simply making cold calls about their interest, hoping to hear back. They also conducted a large survey among potential customers to understand if there was a need for a service such as theirs. This part of the process is what Rahul feels was most essential. It helped them realise there was a need for a solution in this segment of the industry as opposed to designing a business model in a closed room and making presentations about a solution that is disconnected with needs.

The company started out in August 2015 as a pilot in 3 areas in Mumbai, understanding the need to formalize and standardize solid waste or raddi collection. Raddiconnect felt they had the bandwidth to work within the controlled environment of the chosen areas and a formalised network of 15 scrap dealers. Today there are nearly 175 scrap dealers in the city working under the banner of the company.

The Raddiconnect Model

Offering customers with doorstep pick up of waste, the company provides in exchange either a range of coupons or a chance to donate to an NGO. The waste collected by their vendors is sourced to government authorised recyclers. The model seems to be popular in different cities. According to Rahul, the first step in planning is to decide what outcomes one wants to impact. “Only in the last 3-4 years have we seen for-profits in the waste space. After you know what your core focus is, you will see whether the model fits in a not-for-profit or a for-profit,” he says. Citing examples of organisations in different segments of the industry, he explains: “If you want to be in the behavioural change space or in internal capacity building for the informal sector, I don’t see a revenue being generated there so it would make sense to develop a model suited for an NGO and be an empanelled member with the municipality”.

In terms of scientific know-how related to recycling, 28 year old Rahul had to learn it all on the job. Without a formal educational background in science, he says there are lots of opportunities to learn from the waste pickers and local vendors who are technical experts. “They may not know if something is HD, LD or PP, but they have their own terminologies of fugga, kaala, kada which are essentially the different grades of plastics,”

Support systems and investment

According to the young founder, there was not much push by the government either to manage waste nor for start-ups when they launched in 2015 but believes things have changed now. He feels that the two founders were fortunate to have their families back them financially in the beginning. While the two worked without taking salaries for upto three years, Raddiconnect eventually managed to establish itself as a sustainable business.

Although the company was not aware of the few acceleration and incubation programmes for social impact start-ups that existed five years ago, the team believes such opportunities are aplenty in recent years. It was only around 2017-18 that the company came across such programmes and received mentoring and guidance from experienced actors that helped them further structure their model. Rahul also feels that there is a good chance to avail government schemes associated with the Start Up India initiative of the Central Government of India and that relevant information on eligibility can be sourced from the internet.

The absence of formal mentoring mechanisms may not entirely deter early stage entrepreneurs with access to the internet today as Rahul points to the availability of online open source content including series or masterclasses that can help in any kind of start-up including those based on waste. In his opinion, these resources, alongside the public attention that environmental and waste related issues have gained with the introduction of Swach Bharat and plastic bans in different states, have created a more conducive atmosphere for start-ups in this space in recent years.

Waste Based Entrepreneurship in the times of a pandemic

In an industry that is mostly informal or entirely controlled by large aggregators, old-school businessmen had dismissed concepts that Raddiconnect wanted to introduce. But the team's perseverance is what kept them afloat. Rahul strongly believes in starting out locally. "There is no one common solution to managing all waste, everywhere," he says and that knowledge of one's own ecosystem and geography would help create a niche for oneself. The team, although has been working for five years, is not expanding to new geographies, largely owing to issues with transportation created by the pandemic.

"Covid or not, managing waste is important and needs to happen locally. More so now because we cannot have contaminated waste going out because it's going to come right back around and affect everyone," he says. Although Raddiconnect has focused on metros, Rahul says the main difference from rural areas is the composition of waste. He feels that decentralised systems for wet waste, or developing a model to address both wet waste and the relatively low amounts of dry waste, focusing on closing the loop in their local ecosystem would work best in enterprises in rural and semi-urban areas. "If scaling up is not an option in such situations, collaborations are the way forward. That may help us solve the problems with waste in the country," he says.

Achitra Borgohain
Founder, Binbag
https://www.binbag.in/

Achitra Borgohain
Founder, Binbag

The first to set up an e-waste recycling unit in the North East region of India, Binbag was founded in 2014. Its founder, 42-year-old Achitra Borgohain from Assam worked in the corporate sector for 10 years before discovering an impulse to find waste related solutions.

Achitra who completed his BE and then MBA from Gujarat University was working in finance and project management. In 2013, when he was shifting his house he realised how difficult it was for individuals to dispose of e-waste that accumulates in households. “There was no easy or safe way to discard electronic appliances because organised recyclers have a minimum requirement of 50-100 kilograms of waste,” he said, adding that it depended on individual interest to find local collectors and kabadiwallas who would help recycle e-waste. A recycler would not even come for a pick up when the quantity was 100 kilograms. They needed much higher quantity.

The initial stages

From the need for a formal e-waste collection and treatment seeded the idea of Binbag. Achitra conceived an aggregator model that would ensure end-to-end management of end of life electronic and electrical equipment, contributing to a circular economy. Achitra approached NSRCEL, the incubation cell at Indian Institute of Management, Bangalore (IIM-B), who took it on board.

When the company started out, it would allow customers in Bangalore to call for a pick up and arrange for local collectors to pick up from homes. The collection fee went to the collector and the company then did not pay for the materials as the customers were disposing them off. Binbag would then transport the waste to authorised recyclers. “But soon we realized the collectors had their own constraints and could not always deliver the kind of services we expected,” Achitra explains. While the number of users grew, the cost of collection proved to be very high in this model.

The Binbag model

The unsuccessful attempt to create a network for individual consumers to responsibly discard their e-waste through a B2C model led to the company shifting its core focus to small and medium business. They now work in a much more decentralised manner—which they call *distributed recycling*—connecting enterprises across the country with local recycling companies that ensures processing of low value waste locally. “Imagine you have a plant to extract metal from PCB boards in Central India and you source the boards from all over the country. It makes sense at a certain quantity,” Achitra explains and adds: “But low value waste cannot and should not move, it is not sustainable.”

The company has set up two recycling units, one each in Hindupur, Andhra Pradesh and Guwahati in Assam. “In Assam, the idea was clear,” says the founder, explaining that the company aspired to be the first in the region to provide services related to e-waste. “My

question was how was there no service there yet! Does that mean there is no e-waste being generated in all of the North Eastern part of the country?" he laughs, adding that the absence of recycling units meant that the waste was invariably sold in the informal market and in most cases, remained as waste. The chances of converting them to resources was low.

The company has further grown to develop other services including liquidation of all types of office assets as well as data destruction. It has also developed a digital platform that connects recyclers to waste generators (businesses, institutions) and to processors like plastic manufacturing companies, smelters for selling the recyclables.

Challenges: Technical expertise over government support mechanisms

When the company was picked up by IIM at the time of conceptualisation, initial financial came in from IIM Bangalore. Since then, the company raised other forms of grant and equity from angel investors. According to Achitra, it is always more realistic and viable to create a cash flow from customers.

He says: "You can call me a typical MBA but I have a broad overview of what needs to be done in a business" and adds that although he has no formal training in the science involved in the field, he had the ability to pitch an idea, to tell a story backed by numbers and get his hands dirty. This is what institutions such as IIM look for while identifying the potential of a concept and come forward to incubate, mentor and financially support a start-up. For the Binbag founder, this opportunity opened up connections in the industry. He says that it was the conversations with foreign exchange students, individuals from marketing and processing, and the mentors that led him to refine his ideas and have them validated.

According to Achitra, the technical expertise expected on the part of the founder is to know how to solve the supply chain. "But if you ask me what is Pyrolysis or what acid I should use in processing the Printed Circuit Board (PCB), I will not know fully well," he says and adds that over a period of time, once the company started generating revenue, they hired different teams including a scientific one. "One of my employees is a patent holder of pyrolysis and as an operations guy, I can always rely on her expertise," he says.

Waste Based Entrepreneurship in the times of a pandemic

Achitra has observed that ever since the COVID outbreak, investors or companies are not making new investments but only supporting existing portfolios. Binbag too is sceptical about new investments as dialogues have been halted since March 2020. But like many entrepreneurs in the waste based industry, he strongly believes that there is always an opportunity to work with waste.

"Single use plastics have increased in the last few months. And it seems all the effort that people have put into awareness against the use of such plastics has been reversed," he adds. He feels that in the face of the risk of contracting viruses, use of such disposable material will continue to grow and will need addressing at all scales.

“There is certainly a growing need for more dedicated people in the industry and there is also plenty of opportunity both in business and in social-impact, as well as an intersection of the two,” he says and adds that groundwork and experimenting is the best way to find direction in the field.

Gayitri Handanahal
Founder, Waste Impact Trust
https://wasteimpacttrust.org/

Gayitri Handanahal
Founder, Waste Impact Trust

After having worked in the fashion industry for 28 years and teaching in the National Institute of Fashion Technology (NIFT) for 10 years, Gayitri entered the social development sector. Here, she worked with several Self Help Groups (SHGs) in different areas including livelihood and later safe drinking water.

Speaking about this career trajectory, Gayitri says she has never made a conscious decision in her life. “In 1977 I had no idea there was an industry for fashion, but I got into it. Then I wondered how one teaches fashion, but I did it for ten years,” she laughs and adds that she has embraced and given her best to whatever has come her way. In 2012 Gayithri was diagnosed with cancer. During the time she was undergoing surgery and chemotherapy, she came across waste based ventures and became curious. Towards the end of her treatment and as she was successfully recovering, she found people looking to start something in Bangalore in the waste space and took it on as the next phase in her life.

The initial stages

In the first two years, the septuagenarian says she interacted with many collectives and individuals who were associated with waste. “There are so many different kinds of groups from activists, to NGOs, to companies doing great work, but none of them were quite coming together-” recalls Gayitri, adding that this is a phenomenon, one can observe in other fields as well. So in 2014, she and a friend decided to start something that would bring all stakeholders together. “We are all stakeholders in waste, most of us simply generators,” she says.

After considering different formats such as conferences and workshopping, they came upon the idea of hackathons. It was something no one had tried before in the field of waste.

Gayitri spent considerable time on planning the event - what was required in terms of resources, how long a hackathon should ideally be and so on. Through Waste Impact Trust (WIT), she presented the concept to various institutions for support and execution. IISc, Bangalore, was the first to show interest in a partnership. The founder shares how the team was keen on working with waste pickers, those who are made invisible in the sector even as they manage almost all the waste at the ground level. They conceptualised a theme for the first hackathon that would focus on improving the health of waste collectors, bring dignity to their work and contribute to increasing their income. The participants were expected to work on finding simple technology that would improve safety for the waste handlers on the ground and increase their productivity.

The Waste Impact Model

The Hackathon, spread over two weekends, generally begins with a day of immersion for all participants to get a quick exposure to the various problems that need resolving. In the first

edition, the organisers arranged for the participants to be taken to landfills, dry waste collection centres and the like, exposing them to the extent of the problems with waste. The participating waste collectors or 'Domain Experts' are given a tour of the host institution, which are involved in providing solutions through innovation. At the end of the first day, the two groups come together to share their experiences. The second day is the Design Workshop, where the participants learn how to define and choose a problem and how to work towards finding a solution that is sustainable. In the second half of the day, they have sessions of Problem Pitching. Each individual then pitches a problem and presents their idea of a solution for the problem.

With 80-90 such ideas, the participants are then expected to meet one another and form teams. Gayitri explains: "Every team requires at least one Domain Expert. They are there right from defining the problem, to the conceptualisation of solutions and validating those solutions."

The teams spend 5 days researching for and developing their solution further. The following weekend, they come together to begin the hacking. A Hack Shop, with all the basic material required to produce a prototype/model is set up at the venue. The teams hack through the night in a race to register their solution by midnight.

The hackathon doesn't end there. The next day they present their solutions. Gayitri speaks of the first edition and how they had only 3 solutions registered by 11 PM. "We wondered what we would do with the six prizes that were already announced. But by midnight, there were as many as 36 solutions registered," she recalls. The winners are chosen by judges from various fields, including a domain expert.

After the hackathon, the selected teams go through a 45 day challenge where they refine their prototype and conduct a short pilot. They also begin working towards a suitable business model for which WIT then assists in finding incubators or corporates who are interested in investing.

The themes for the second and third hackathons were Street Food Vendors and 'Water & Waste' respectively. The third hackathon had manual scavengers participate in the event. The solutions from the edition are being implemented on the ground and WIT is working with the teams as well as with NGOs working to end manual scavenging, to develop a model that would best suit the problem. "We are yet to decide if the model can work through Self Help Groups or be provided on rent to organisations and companies and so on," the founder explains. "The market strategy is being worked out. 'Jalodbast' has been internationally noticed."

The fourth edition that focused on 'Biomedical waste' was partnered by IIMB. The mid review that took place in March had seen potential in two solutions that can be grown into businesses. But as of August 2020, these are on hold due to the constraints caused by the pandemic.

Support systems & investment

From the beginning, Gayitri has approached different corporates and organisations for different themes. Based on their prior work in the area, organisations come forward to partner with WIT and sponsor the hackathons. For instance, when they worked on waste and water, the founder had approached people she knew to have worked in water and governance, projects that worked closely with science and water & sanitation. The mentors too are approached according to the themes, to best benefit the participants.

WIT believes that the hackathons can be inclusive as they ensure diversity of educational and professional backgrounds coming together to solve festering problems. “This has made the hackathons city based. The problems too are Bangalore centric although similar solutions can be conceptualised in other cities such as this,” she explains.

For Gayitri, this initiative seems to be entirely focused on helping incubate newer ventures. “We do some hand-holding for as long as we can,” she says and shares how they have witnessed team members gradually growing into good friends and their families coming together across social boundaries. “We do see changes happening in people’s lives,” she says.

Waste Based Entrepreneurship in the times of a pandemic

Gayitri has lately been trying to design hackathons for the online mode. “It probably won’t bring the same intimacy,” she says but is already planning a quasi-online model where the immersion remains offline while other parts are taken online, with virtual presentations and discussions. She also plans to work from inside institutions, opening it to students and scholars already enrolled within the institutions. Such adaptation that also tries to fight the possible exclusion of marginalised communities and individuals seems essential in the longer run.

For the youth who are interested in the field, the founder says that the best way to learn is to start, through experiential learning and trial & error. She feels that the participants of the hackathon take away important life lessons and change the way they treat waste and waste handlers in their daily lives. “Their whole outlook towards waste has changed,” she says, suggesting that such initiatives can truly bring about behavioural change as well as contribute to the growing knowledge on waste management.

Ramanan Natarajan
Founder, Shudh Labh Solutions

https://www.shudh-labh.com/
Ramanan Natarajan
Founder, Shudh Labh Solutions

After having worked in Information Technology for several years, across many countries, Ramanan Natarajan was in a management role in IT in Bangalore from the year 2007. He recalls that the following years were disastrous for the fast growing metro city in terms of garbage. From his 9th floor apartment building in the southern part of the city, Ramanan could see the pile of garbage outside, reaching far higher than the 7 foot compound wall itself.

The initial stages

While he was considering the possibility of getting into waste management and innovation, his uncle, T. Jayaraman, a technologist, was already making individual efforts on the ground. He had built a zero waste home which was also 100% LED and achieved 0% discharge back in 2007. The two carried out research and brainstorming for about two years before Ramanan founded Shudh-Labh. Today, the company manages 2-3 tonnes of waste on a daily basis through their direct services, and provides their composting solution to about 60 apartments and commercial complexes in Bangalore and 5 in Chennai.

Ramanan and his mentor & uncle Jayaraman, put together a small but passionate team of 5 friends with different skill sets. Their goal was to reduce waste going to landfills to less than 2%. They envisioned this through decentralised technology and solutions for processing all kinds of waste coming from all households.

The Shudh-Labh Model

Although other companies in the market were providing composting solutions for individual use, Shudh-Labh became one of the first in the city to offer aerobic composters for community composting. The expert on the team who helped them develop the model, although has moved on to other projects, continues to remain as a consultant with the company. Ramanan recalls how their very first deal involved a three month long conversation with the managing committee of an apartment in Basavanagudi, a locality in South Bangalore. But the successful installation and careful management of their composting digester in the building helped them gain faith among the residents. “I used to take people on visits to take a look at the set up, and the residents would enthusiastically vouch for the service,” the founder says and laughs that this worked as great marketing for the company.

Today, the company focuses on composting and sale of composters. The founder feels that as composting can be carried out in-house and does not require large spaces or transportation across long distances, the operations can be smoother. With about 100 kilograms of wet waste being managed by the Shudh-Labh aerobic digestors every day, he says it is about 3 tonnes of wet waste that does not go to landfills every month.

The company has also been working towards a mind-set change among producers of waste. Their marketing involves developing ways to incentivise segregation and reinforces the need for it.

Challenges: technical expertise and social network over public funding

Shudh-Labh was also offering dry waste collection and segregation services, and was selling about 50-60 tonnes of dry waste to recyclers every month. However, due to various shortcomings they had to halt the service. “We had started to make profits but the losses were due to our mistakes in the dry waste centres. We had to shift 7 times in a very short period,” says Ramanan. Two fire mishaps, where the company lost up to 80 tonnes of dry waste, cost them about 20 lakh rupees in disposing the remains and cleaning. Dry waste processing also needs land, which the company was using on rent. But with disputes in ownership, Shudh-Labh lost access to and time in the centres, again leading to losses.

At another level of operations, the team is developing a sheet-making device for low-value plastics and discarded rags. Their intention is to change the value chain by processing wastes such as multilayered plastics generally used for food packaging, plastics that are less than 20 micron that are perpetually circulated despite government bans and that end up in landfills. “We are approaching government and non-governmental bodies to provide grants for this equipment that may cost 3-4 lakh rupees. Even if it costs that much in the market, it can also provide employment to 3-4 people,” says Ramanan. He believes that technology can create a positive feedback loop by allowing businesses to incentivise segregation by customers.

Ramanan feels that the Solid Waste Management Rules of 2016 is a policy document with great potential. “It mandates segregation and we know that without segregation, both dry and wet waste lose value,” he says but adds that the implementation still remains patchy. Although the founder has interacted with individuals from within governing bodies, the finances and abilities at the company’s end has not allowed them to work extensively with the government.

The team was also sceptical about external investment and was unsure about how to go about sponsorships and funding. “Back in the day, even if we were doing well technically and had low cost equipment, we were quite unknown,” Ramanan recalls. It is, however, through personal networks that Ramanan and team could bear the blow of the losses of up to 1.8 crore rupees that they incurred. “Friends, family, relatives… everyone was very kind. It is also my own money that has gone into the start-up,” he shares, adding that friends and many of the early clients marketed for the company and introduced them to new apartment complexes without expecting favours or commissions.

Waste Based Entrepreneurship in the times of a pandemic

The founder says that even through the pandemic, the company has received inquiries for about 25 units of the composter in the city. “The demand is huge… about 25,000 apartment complexes in the city with more than 100 households,” he points out and adds that a good number of entrepreneurs can all get a fair share of this market.

According to Ramanan, running money of a few lakhs in the initial stages can help obtain basic infrastructure and lead a company to grow into a self sustained business at a quick pace. He feels that younger businesses can learn from older folks in the industry such as Shudh-Labh who are willing to share their experiences. For wet waste, installing and composting on site, and charging a service fee for managing can be efficient and profitable. Citing his own example, “I may not be making a big margin but I’m able to cut costs and make a decent turn-over,” he says. Further, he believes that with 6000 to 8000 rupees, a space of about 2000 square feet on the outskirts of the city can be used to segregate the dry waste. “Our data from the last 3 years shows that the blended average for dry waste is 6 rupees per kg, bringing in a profit of 2 rupees per kg. That is already 25,000 rupees profit for about 10 tonnes of waste per month”, he explains.

Ramanan strongly feels that awareness on the need for waste management is growing among smaller towns and other cities like Belgaum. “Even the municipalities are taking proactive initiatives, perhaps because of Swachh Bharat and other campaigns,” he explains, adding that the municipal governing body in Chengalpattu near Chennai has approached them for their service in schools and restaurants. This, he says, suggests that enthusiastic youth from rural areas can start-up in the nearest towns as the problems of the bigger cities are bound to trickle down to the nearby towns. “They can work with restaurants, hotels and marriage halls that generate bulk waste,” he says and adds that enterprises can also focus on local factories like Shudh-Labh does with Aditya Birla and Mindtree on the margins of the city. “There is a lot of scope today outside the city too, both in dry waste removal and composting,” he assures.

Amita Deshpande
Founder, reCharkha
https://www.recharkha.org/

Amita Deshpande
Founder, reCharkha

As the world moves back towards single-use plastics in dealing with the pandemic, newer solutions have to be found to reduce the burden of plastic waste on the planet. For years now, many passionate individuals and groups have been invested in resolving issues related to plastic waste and Amita Deshpande is one among them.

Although she began working in the IT industry after her bachelors in engineering, Amita turned to working in Corporate Social Responsibility across multinational companies as well as NGOs and community-based organisations in USA and India for nearly 14 years. Her long standing passion towards the environment is what led her to narrow down on waste as an area of work.

The initial stages

Keen on working towards environmental and social issues, Amita chose to pursue a Masters programme in Management from Purdue University (USA), specialising in Sustainable Development. Equipped with the skill sets and perspectives from her education and years of experience in CSR, she saw waste as the space to conceive new solutions and founded Aarohana Ecosocial Developments in 2013.

37 year old Amita talks about how she was exasperated by the scarcity of solutions that took into account social as well as environmental concerns together. She explains how she set out to work around her own town of Silvassa and approached the youth and women from tribal communities in the region, who were also on the search for viable employment options, to tie up with the start-up. Providing training for the interested youth and women in working on the traditional charkha and handloom, the organisation began their unique upcycling process, weaving yarns of plastics into shining fabric.

The reCharkha business model

In her vision of raising awareness on the need to reduce, reuse & recycle, Amita found upcycling as a way to promote this message while also generating revenue as a product based business. After rebranding Aarohana as ‘reCharkha’, the team also initiated a non-profit arm alongside the enterprise called My EcoSocial Planet. This entity is behind different kinds of efforts of awareness generation about environment conservation among schools, colleges, corporates and residents across urban and rural settings. It is also invested in enabling sustainable livelihoods through rural skill building programmes.

The non-profit, through tie ups with other local organisations and groups, also works directly in waste collection and helps reCharkha collect particular kinds of plastics required for the weaving process. Currently they work with locally based organisations in Pune and Mumbai such as Purnam. The collected plastic waste is then taken to the unit in Dadra & Nagar Haveli where the plastics are first segregated, washed and sanitized. On drying, the plastics

are segregated by colour and cut by hand. These yarns are woven into plastic fabric in a natural and handmade process in villages where electricity supply is irregular and unreliable. The fabric is then transported back to Pune to be tailored into fashionable products such as tote bags, electronic cases and pouches. The finished products are sold both offline and online.

Challenges: expertise over public funding or policies

"Our work is related to handicrafts, as well as recycling. But our material isn't considered handicraft and our process is not recognized as recycling" says Amita, and explains how this means they have not been able to avail benefits from the government as either enterprise. Finding suitable government schemes and policies to tap into has proven to be difficult for the organisation and is something the founder hopes to achieve through small collaborations or by providing internships for passionate youth.

Amita, however, has been able to find institutional support as an entrepreneur. In March 2019 she participated in the 10,000 Women Leadership Programme at IIM-Bangalore. Since May 2020 reCharkha has been part of NSRCEL, the start-up incubator at the institute. Amita believes that like any other business, an understanding of basic business principles is what has helped her in the waste based sector. "Even though I'm not a finance person, I had to know my balance sheets well and could later hire others. reCharkha is driven by marketing and sales as we are product-based but I think an understanding of all factors including operations and services is important," she says. Although new to waste and recycling, Amita explains how perseverance and consistency in innovation helped in building her own technical capabilities.

For Amita and team, human resource has been most crucial as their work is craft based unlike the machine driven recycling sector. Although we want to be focused on livelihoods, working with people poses its own challenges," she says.

Waste Based Entrepreneurship in the times of a pandemic

The founder explains how although cash recovery has been steady, cash flow has been a big concern since the pandemic outbreak. "Ours is not an essential product and especially since the lockdown, the demand has been much lower," she says, suggesting that this may impact employability. At the same time, Amita is confident that other waste based organisations invested in service rather than dependent on market demand are faring well even during the pandemic. She insists though, that all organisations whether for-profit or non-profit must take into account the Triple Bottom Line. "I have seen people producing organic products and use plastic packaging!" she laughs and explains that it is high time we all paid close attention to social and environmental concerns while also focusing on profits.

Through the My EcoSocial Planet entity, Amita and team are also looking to expand their collection activities to other cities by collaborating with smaller organisations already working in waste collection. Through these means, she believes that young entrepreneurs starting out in the field can find necessary support.

Conclusion

The separate journeys of the entrepreneurs provide significant insight into different segments of the waste-based industry in the country. Besides the varying approaches, different focus areas and models of business enterprise, a common strand from the stories in this collection is the idea of sustainability and environmental justice that the founders have been working towards from the beginning of their journeys.

Many of the organisations have grown from addressing behavioural change through public campaigns and programmes to offering their services and operations to directly resolve issues around waste. A few of the organisations also provide services such as waste audits and regular reporting.

The founders, irrespective of age, have paid close attention to developing a model that directly addresses an existing problem in society that demands a service. Many of the narratives show the research and observation that went into developing a suitable model that can be capitalized by a young business. Consumer surveys, discussions with existing waste-based companies and not-for-profit organisations have helped them create a solution to specific problems. The narratives lay out how some of the founders, although attempted multi-pronged approaches to waste, have benefitted from narrowing down focused operations in one area – be it dry waste segregation, e-waste treatment or community composting.

It is clear that for a significant number of the entrepreneurs, an educational background in management and work experience in the corporate sector have contributed greatly to their understanding of business as they turned founders. Of equal importance are the stories of trial & error that nearly all the founders have narrated. It is also evident that experimenting on the field comes with a cost, and bearing these costs has been possible for those with social and economic capital that is often the result of caste and class location in society.

For most of the entrepreneurs included here, initial capital generation was possible with substantial savings from previous professions or with the help of family that could provide a steady flow of capital at least until the company could generate its own profits. Although public institutions offer incubation, the financial support is limited in the current landscape. The founders also have little hope in working only with the government through projects as this path has proven to be unstable and inconsistent. Nearly all the entrepreneurs prefer either a b2b model where the industry pays for their services or customer demand can sustain the business, rather than working towards government tenders entirely.

Role of Mentoring & Networking

In the case of many of the organisations, institutional mentoring has helped the founders build wider networks of people engaged in marketing and processing sectors. These have led to possibilities of formal and informal conversations on what could work best for a business in the waste-based sector. Institutions such as IIMs and IITs, and events organised by established companies such as Google have helped create platforms where aspiring

entrepreneurs are able to gain clarity, critique and validation for their ideas. These spaces have helped them refine their ideas before launching their services to the wider public.

As important as it is for more such programmes to cater to different segments and become more niched, the existing programmes and Samvada also recognized the need for such programmes to take proactive steps to increase their inclusivity.

Entrepreneurship in Waste

As the entrepreneurs have all pointed out, the service of waste management can only receive more demand as our consumption abilities grow.

At a time when the pandemic and subsequent lockdowns of 2020 have affected various kinds of businesses and whole sectors at large, waste-based enterprises have a different story to tell. The time seems ripe to generate awareness on the need for responsible disposal of all kinds of waste, with the increase of single-use plastic and other substances used to avoid spread of infections, and the attention drawn toward proper management of medical waste.

Combining services with programmes to raise awareness on behavioural change is a common approach, one that most entrepreneurs encourage too. Organisations also seem keen on tie ups, collaborations or partnerships with local or younger organisations that can help decentralize waste management, making processes more efficient. The entrepreneurs who have spoken in this collection also believe that these collaborations can help younger organisations learn and grow through the process.

Although most of the founders here have had formal training in either management or in pure science, giving them a strong foundation to work on efficient models of business, they all believe that the field can throw up both unexpected challenges and reliable lessons. While skills in operations and services are a necessity, they believe technical knowledge of the processes involved in waste-management is something one can pick up on the field and even hire experts for in the longer run. An advice that can be picked up from many of them was to understand the landscape of the waste management industry by working with established organisations before investing capital in a new venture.

To conclude, we acknowledge that sustainable solutions for reducing and managing waste is a critical need today . The narratives and reflections of waste entrepreneurs in this e-book will remain an inspiration for us at Samvada as we design and conduct courses to create more such adventurers and pioneers.

RECLAMATIONS

...STORIES FOR FUTURE

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"I was a Young Professional for a year in the Water, Sanitation and Hygiene team at UNICEF Hyderabad."
-Nivedita, Alumnus of Waste Adventurer Course, 2017

"After the Waste Adventurer course, I worked with SAAHAS for two years. Then with their support, I was able to establish Bhoomi Environmental Services."
-Prakash, Alumnus of Waste Adventurer Course, 2018

More entrepreneurs emerging...

BADUKU - A CENTER FOR LIVELIHOODS LEARNING

CENTER FOR YOUTH AND SUSTAINABLE DEVELOPMENT