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Title: Paving ways to sustainable solutions

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Paving ways to sustainable solutions

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THE infinite consumption of a finite supply of natural resources followed by the generation of humungous amounts of non-biodegradable waste has vandalized ecosystems and rendered us vulnerable in the face of pressing problems such as space management due to expanding landfills, accumulating trash, and the disruption of ecological balance. The menace of improper waste management has not only inflicted the health of the environment but also inevitably lowered the quality of life on this planet.

The lack of a direct correlation between profit and sustainability allows us to believe that improvisations in the current processes of waste management are simply axillaries for another time. Therefore, compared to frontline innovations which enable a direct flow of finance, developments in the fields of waste management are usually deprioritized and become a secondary topic for discussion or/and investment. Truth is, turning a blind eye to an apparently engorging social problem like waste accumulation is neither honourable and responsible, nor sensible.

Of the many products developed to uplift the human lifestyle, plastic, by far, is the most convenient and commonly used synthetic commodity. Notwithstanding the benefits, plastic is also the most rampantly discarded material from households and industries infesting the landfills and settling itself into ecosystems with a promise of detrimental consequences.

In a city like Mumbai, the plastic from household items like milk pouches, chocolate/biscuit wrappers, tubes, and other major and minor articles constitute to nearly 3% of the total waste. Next to organic food waste, the major contributor of the dump is construction debris, accounting for nearly 17% of the total. Although, wet waste holds the lion's share of 73% of the total matter collected by the BMC,

the majority of this is degradable and may find its way into various natural cycles. However, the Achilles heel of the entire bulk of collected waste matter is the non-degradable plastic and construction debris collectively constituting a whopping 20%. Moreover, the leftover construction and demolition debris is responsible for not only depleting valuable natural resources such as sand, limestone, etc., but is also a major contributor of greenhouse gas emissions.



So the important question is : Can we find a novel and sustainable solution to rid the city of this 20% of waste matter?

The question has already been answered by two very promising Gen Z ecopreneurs Sharang Ambadkar and Varad Tole, founders of the startup Feel Good Eco-Nurture LLP.

Our Story

FeelGood Eco-Nurture LLP is a budding venture driven by the vision of a planet with recyclable systems and circular economies. It is the derivative of a common vision shared by two young entrepreneurs, who have introduced the concept of 'MLP composite compound granules' made from the post-consumer municipal



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solid, road, beach clean-up plastic waste, pre-consumer industrial waste, and construction & demolition waste.

Like innumerable startup players who begin their entrepreneurship journeys in car sheds or kitchens and metamorphose into the Jacks of their trades, Sharang and Varad have now established themselves as mainstream developers of commercially viable 'FeelGood tiles' and 'FeelGood planks', which is the primary product of their endeavour, since their first amateur attempt at creating a tile recycled from plastic and construction waste using a wrought oven from the junk.

These two products 'FeelGood tiles' and 'FeelGood planks' can be a suitable replacement of concrete tiles and Natural wood in numerous applications and help reduce the waste menace and limit carbon emissions while contributing to the circular economy.



The evolution of concept

Having identified that the major sources of waste in the city, which are the most difficult to process and manage, are plastic and construction debris, Sharang and Varad churned ideas to reach an adept and feasible solution which would enable them to bring the seemingly unusable components into the loop for recycling. The aim of their collaboration was to determine if two individually non-recyclable components could be collectively processed for a better outcome.

Through various kitchen experiments, they created their first prototype two years ago. Currently, this product has been receiving great recognition by major corporate and municipal bodies to increase the use of such sustainable products and contribute towards the circular economy which is uplifting confidence and the market value of FeelGood.

Manufacturing FG tiles

Creating recyclable FG tiles using plastic and construction debris is a 5-step procedure comprising of waste collection, segregation & filtration, compounding, pelletizing, and moulding.

The raw materials, plastic and construction waste, are collected and segregated based on the type of material and if required, size and colour. The segregated plastic is crushed, grounded, freed of impurities, and processed to form chips. The chips are stored separately based on type and colour.

Parallely, the construction debris is crushed, grounded, and filtered through a strainer to stockpile ultra-fine debris.

Both the chips and debris are compounded using a cylindrical machine with rotor blades at a controlled temperature and speed to yield the desired composite mixture after additions of additives.

The composite is processed using a screw extruder into a compounded string which are further slit into granules through a cutting machine to manufacture composite granules.

The granules are further moulded to form tiles which is the final product of this process. Similarly for FeelGood planks, extrusion process is used.

Why are FeelGood tiles and planks unique?

The objective is to solve the problem of non-degradable plastic and construction debris. Thus primary objective achieved through the invention of FeelGood is to provide an eco-friendly and sustainable solution of using

Plastic and building materials, which are raw materials to construction are easily and plentifully available, at low cost.

The products made from this composite material are recyclable thus giving a new life to something which would end up in landfills forever. The composite is easy to process and transform into different products. The waste from this process is used as a resource for another process bringing plastic and construction debris within the scope of recyclable resources.

Moreover, no natural resources are consumed during the manufacturing making it a completely sustainable procedure. Weight of the paver tiles is nearly 45% lesser than conventional blocks and tiles, providing for cheaper transport.

At the end of its life cycle, the product itself can be used as a raw material for future production closing the loop of its life cycle.

Significance of the Invention

FeelGood products are a sustainable solution to manage waste effectively and fundamentally oust the concern of plastic and construction waste accumulation

The invention proves that any material can be transformed into a resource without discarding it as waste provided we have the right technique and attitude to bring about this transformation.

FG tiles are a potential solution to reducing the plastic waste transported and left untreated in landfills. A direct consequence of this processing is the diminished load on landfills, clearing of spaces, reduction in the deposition and disposition of plastic waste into the lands and oceans, and provision of a safer environment to the animals due to cleaner waterways and other habitats. It has been estimated that without significant action, there may be more plastic than fish by weight in the seas by 2050. Surely, we do not want to even envision a future this sinister. An indirect but natural consequence of the recycling of this waste is an enhancement in air quality due to reduction in plastic incineration as well as a drop in carbon emissions and consumption of fossil fuels. Recycling of construction materials can impact environmental quality because 5% of the greenhouse gases are dispersed during the process of conventional cement production. Data suggests that around 250 MT plastic and over 1340 MT construction debris is generated on a daily basis which

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amounts to dumping 580350 Metric Tonnes of waste yearly. Instead of piling the discarded non-degradable waste, the same debris can be used as a raw material for creating new items and close the loop of plastic management, preventing the production of virgin plastic matter.

Other than the health and safety of the environment, FG tiles prove to be affordable substitutes to conventional tiles equivalent in quality and durability.

Revenue generated from discarded, untreatable waste can also impact the economy on a large scale and provide additional sources of generating economic funds.

Considering the current scenario, the advantages of this process can be extrapolated to include the expansion of employment options which aligns with 'Make in India' initiative and represents our country in creating a humanitarian and environmentally cognizant mark on the globe.

Challenges of the near future

Since the concept of sustainable products is amateur to a large section of the audience, the primary challenge foreseen by this pair is to sensitize the consumer on the significance of using recyclable material without compromising on the profits. Moreover, taking into account the limited focus of consumers on sustainability, FeelGood will require an effective strategy in demonstrating the potential of their product to the bigwigs and stakeholders of the construction industry. The superior attributes of the FG products and the feasibility of their use shall prove to be strongholds to reach out to the relevant audience.

The consumer & the product

All stakeholders linked to the construction industry are potential customers. The partners could leverage the element of first appearances to their opportune advantage and create their unique value in the market.

This product can penetrate the market to provide valuable substitutes to paver blocks, roof tiles, paver tiles, benches and many other products.

Future prospects

Implementing the idea and scaling up production are the prime targets of FeelGood. Their novel product is creating a footprint for FeelGood in the relevant markets.

As a Startup which is rapidly scaling up in production, sourcing and operations we are looking for people with an environment enthusiastic and technically sound, entrepreneurial mindset to come on board and grow together.

Moreover, the range of products that can be manufactured from these raw materials is endless. They have the potential to tap into road/house constructions and the furniture industry.

With constant improvisations and Innovative, imaginative, creative approaches, Feel Good is establishing its range of recyclable sustainable products from two of the waste materials, which were considered the most difficult to process. This enterprise will serve as a passionate attempt to sensitize the youth that we can transform any waste to ware. After all, the innovators of today are the guardians of a worthy tomorrow! ■