PEOPLE

The b-boy and b-girl trio who are India's best

THE GOOD LIFE

The Shop, probably Delhi's first boutique, turns 50

SPORTS

No excuses for racism on the field, or off it

WIDE ANGLE

The story of India through the eyes of its first citizens

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utside 1 MG-Lido, a mall in the heart of Bengaluru, a young man stops to pull out his cell phone and take pictures of mannequins in the display window dressed in the latest from Swedish brand, H&M. The designs, which include a knitted beige skirt and a double-breasted brown checked jacket, aren't out of the ordinary. But the way they've been created is.

The clothes are made from recycled plastic PET bottles, the kind used to hold water and aerated drinks. These aren't clothes meant for the ramp, but for office and casual wear. Looking at them you cannot tell they've been created out of plastic. Like H&M, other multinational companies, too, are finding environmentally conscious solutions to tackle pollutants. And so are a number of Indian entrepreneurs.

Take, for instance, Delhi-based Clensta International that creates waterless bathing products. A 100 ml bottle of Clensta body wash saves up to 350 litres of water, says Puneet Gupta, the biotech start-up's founder and CEO. "A bath otherwise takes up about 70 litres of water."

 $Gupta\,felt\,the\,need\,for\,such\,products\,while\,working$ with a start-up catering to the defence services. There he came across soldiers who had gone without a bath for as long as three months while posted in the inhospitable Siachen Glacier. "People in submarines go without baths for 45 days to two months. There had to be something that could be done for them," he says.

Today, besides the military, his waterless tech products are also used by the travel, tourism and health industries. Clensta has a body wash and a shampoo. It is also working to launch more waterless products in the personal care space, including one focused on dental hygiene. Last October, the company raised an undisclosed amount of funding from Indian Angel Network, a network of investors, and its venture capital fund.

Clensta's products are plant based and are capable of removing oil, grease and dirt without a drop of water. All one needs to do is apply the product and towel-wipe it off. The innovation achieves significance considering that a UN clean water report warns that by 2050 water shortage will affect more than 5 billion people.

When Ankur Kumar graduated from the Indian Institute of Technology Delhi in 2017, he and his friends dreamt of creating a machine that would churn out recycled products from waste paper. This was the year when pollution levels were particularly high in the national capital and the Delhi High Court had identified stubble burning as the "main villain" behind the severe smog. "We realised we had to do more than recycle paper. We agreed there'd be more value if we could take agro waste and convert it into pulp," says Kumar, one of the co-founders of Delhi-based Kriya Labs.

Government data shows that this year, between paddy straw burning were recorded in Punjab, an increase from 2,500-odd last year. Haryana, too, recorded a marginal increase in cases of stubble burning.

Kriya Labs is now engaged in a pilot project at IIT Delhi to turn paddy straw into pulp. "One kg of paddy straw can give you 750 gm of pulp. That's enough for making 70 to 75 biodegradable plates," says Kumar. The pulp can also be used to make boxes for packaging, as well as moulded trays that can replace polystyrene (thermocol) usually used for packing electronics.

Tn a country that relies heavily on generators, soot ▲and unburned diesel continue to be released into the air. This superfine particulate matter, which can directly be absorbed into the bloodstream, causes not just respiratory ailments but also cardiovascular diseases.

"We've spent years making pledges about promoting public transport and not bursting crackers. But seeing how quickly our air quality is deteriorating, we knew we had to address the problem in others ways as well," says Nikhil Kaushik, co-founder of Graviky Labs.

Based out of Delhi, Mumbai and Boston, Graviky has been making Air Ink and a filter to "capture" pollution since 2016. The company started out by collecting soot from diesel vehicles and has now tied up with a number of small and medium enterprises to collect pollutants to be recycled. Air Ink, for example, is described on the company's website as "the first ink made entirely out of air pollution". Producing black ink often involves the burning of petroleum-heavy products, but pro-

Currently, Graviky's artist-grade matte black markers, which use Air Ink, are available in the US for \$27 each. These can, however, be sourced from their website, which artists from across the world do. The first batch of the inks, mark-

the obsessive buying habits in this age of retail boom. "We constantly buy things throughout the year but hardly wear them," she says. "My wardrobe was filled to the brim, and it was the same for all those around me." Plagued by excesses, Chatterjee launched Twirl.store two years ago to take in clothes from closets



ONE FOR THE PLANET

From waterless bathing products to ink made from air pollutants, environment-minded Indian entrepreneurs are finding creative solutions for a cleaner world. **Nikita Puri** reports





A mural in New York, courtesy Graviky Labs' Air Ink; (from left) a pilot project by Kriya Labs at IIT Delhi to convert agriculture waste into products; and Sujata Chatterjee of Twirl.store

belief that this lot can reach a wide audience. Proof of this is Italian artist Andreco's wall mural featuring black clouds in Delhi's Lodhi Colony created using Art Ink.

In September, Graviky Labs won \$50,000 in a contest for tech entrepreneurs in New York during events leading up to the United Nations Climate Change Summit 2019, which begins on December 2.

Similar to Graviky's experimentations is Delhi-based Chakr Innovation's Chakr Shields, a filter that reportedly traps 90 per cent of generator emissions. The idea was born some five years ago over glasses of sugarcane juice, when Chakr's co-founders, including IITians Kushagra Srivastava and Arpit Dhupar, noticed the wall behind them blackened by the fumes of a diesel generator. Since it was founded in 2016, Chakr has gone on to partner with companies such as Hindustan Petroleum, Indian Oil and the Tata group. This June, the company raised ₹19 crore in a round led by Indian Angel Network.

While multinationals are often the target of envi-ronment watchdogs, consumers of their products aren't held as accountable. "Waste by consumers isn't really talked about as much," says Kolkata-based Sujata Chatterjee. Formerly a software engineer, Chatterjee found herself being increasingly disturbed by



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PUNEET GUPTA Founder-CEO, Clensta



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NIKHIL KAUSHIK Co-founder, Graviky Labs

across India. The company also schedules free pickup from across cities — one can schedule a pickup from any of the metros and also from some smaller cities. Chatterjee recalls the time a Kolkata resident sent in 10 to 12 boxes of clothes, all of which came from a single household. The clothes that are good enough to be donated are kept aside. The leftover batch is upcycled into bags, jackets, scarves, skirts as well as giftables such as handmade coasters.

The upcycling is done mostly by women associated with self-help groups in and around Kolkata, thus becoming a source of livelihood for them. Consumers who send their clothes to Chatterjee's initiative are also rewarded with points that can be redeemed while shopping from the upcycled lot on the company's website the perfect solution to burgeoning closets built by buying into a consumerist culture.

Twirl.store also partners with companies such as Kolkata-headquartered Senco Gold & Diamonds and refurbished electronics platform HyperXchange to maintain a steady supply of raw material. For this, every few months it organises "Twirl Days" during which it carries out collection drives in business houses. The labour-intensive initiative is funded through the sale of the upcycled products available on its online platform.

he need to do something about plastic took hold of Paras Saluja in 2015, when he witnessed the growing mountain of food wrappers and plastic bottles at one of the Everest base camps. A commerce graduate, Saluja had no knowledge of the science involved in giving plastic a makeover, so he collaborated with scientists at Delhi-based National Physical Laboratory to understand how he could turn plastic waste into tiles fit for daily use. And in 2017, he set up Shayna EcoUnified, which has since recycled 310 tonnes of plastic to make tiles that can sustain extreme temperatures (140 degree Celsius

to -25 degree Celsius.) It's far easier for people to talk about a product with recycled origins than actually walk the talk and accept that product, says Saluja. "Moreover, our tiles are 25 per cent more expensive than cement tiles, but we are not contributing to waste or leaving a carbon footprint,

which the making of cement tiles does." Having laid plastic tile pavements after tie-ups with the municipal corporations of Gurugram and Hyderabad, Shayna EcoUnified is now working with corporate houses such as L'Oréal India and Tata Motors. The company is also in talks with leaders in the hospitality industry and has done up a smattering of private farmhouses and small resorts, including one in Chitkul,

a village in Himachal Pradesh's Kinnaur district. Graviky Labs is currently working on ensuring that writing pens containing ink made from pollutants hit the Indian market in the next 12 to 18 months. Clensta has tied up with over 500 hospitals, including the All India Institute of Medical Sciences and Dr Ram Manohar Lohia Hospital in Delhi, Kolkata's Institute of Post-Graduate Medical Education and Research and Seth Sukhlal Karnani Memorial Hospital, Jaipur's C K Birla Hospital, besides military hospitals. The company is also exploring partnerships with sports stores and

long haul-airlines. Kriva Labs will have its commercial units up and running in Haryana, possibly in or around Kurukshetra or Hisar, by the end of this year. These units are designed

to handle two to five tonnes of paddy straw per day.

With the planet under severe strain because of pollution and climate change, this is a bunch of innovative entrepreneurs working hard to do its bit - in whatever way possible.





A pavement in Hyderabad

recycled plastic tiles: (below)

minimalist lampstand and

packaging material made by

Kriya Labs; products painted

by Graviky Labs' Air Ink;

and waterless bathing

with Shayna EcoUnified's









