

Vol. VI, Issue II, 2021



# CSR *Mandate*

Enabling Sustainability



*Protecting Land  
and  
Water*

***Collective Awareness  
and Action Required***



# Recognition

The role and contributions of CSR Mandate in bringing to the fore the initiatives of Corporate India and NGOs has resulted in the magazine being awarded the

**ICE Awards 2016 and  
CSR Community Initiative Awards 2016**



# In Loving Memory



## Archana Sinha

*A woman of substance.*

*She lived a fearless life.*

*She refused to allow the frailty of her health to define her life.*

*She was a fighter.*

*A brutally honest, down-to-earth and loyal colleague and friend, she was a breath of fresh air.*

*She played a unique and special role in all of our lives.*

*We wish she could still be amongst us, but she has completed the course allotted for her. She ran her race. We feel her loss deeply.*

*We, at CSR Mandate, will miss her amazing essence and spirit.*

*We honour her for her contributions as an Editor of this magazine since its genesis.*

*Fare thee well, Archana.*

*You will be forever missed.*

*Your colleagues at New Media Communication Pvt. Ltd.*

*"The friends who loved you in life will therefore treasure you in death."*



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Dear Readers,

The tradition of giving has existed since ancient times in India. The words of the revered Tamil poet, Thiruvalluvar, rings ever so true: Wealth and knowledge not shared are useless. Many established business houses in India practised philanthropy even before the notion of CSR became a buzzword. They felt a moral responsibility towards society and wanted to do their part in uplifting their fellow citizens.

As a magazine, CSR Mandate has come a long way. We launched our first issue in July 2013. When the Government of India made CSR into a Law through the Companies Act 2013, which came into force in April 2014, we felt it necessary to open a platform in print and web to highlight these CSR initiatives. We received tremendous response from various corporate bodies, NGOs, PSUs and individuals whose projects and stories have created an impact, brought hope and a new lease of life to many communities pan India. And many top companies are spending more than their required 2 per cent target.

As we focus on different topics in every issue, we are hopeful that more lives are impacted by the various CSR initiatives that have been in operation this octennium. This latest issue highlights Environmental Sustainability, Clean Energy, Water and Sanitation. Having understood the importance that preserving and conserving the environment is crucial for the entire ecosystem, companies like CRISIL, Embassy Group, Bisleri, Danone, Dalmia, Toyota, Pernod, Sistema.bio, Carlsberg, among others, who are featured here, are diligently working to improve our planet through the various initiatives mentioned on these pages. There are equally important articles from Amit Banka and Priyamvada Bagaria that challenges us to take a stand to protect this precious planet, and Pearl Tiwari's article on the role of CSR during the pandemic.

We trust that each article will stir within you the desire to do more for others and for this place we called home – our beautiful Earth.

Best Wishes,

**Kamaljit Swaroop**  
Vice Chairperson





Dear Readers,

Humankind has considerably benefited from the progress the world has achieved in the past century. Economic growth has lifted nations from poverty to prosperity. It should be the goal of every leader to ensure that the people who elected them enjoy the rewards of that growth in all aspects of their lives. Growth is good, and it should be encouraged, but it should not be an obsession that affects and destroys what we have. We have seen the acceleration of environmental degradation across the globe due to rapid industrialisation. The Amazon has lost 17 per cent of its forest cover in the past 50 years. Rampant deforestation is taking place everywhere. India is not outside this ambit either. According to the Global Forest Watch, a worldwide platform that monitors forests, India lost nearly 38.5 thousand hectares of tropical forest between 2019 and 2020, making up almost 14 per cent loss of its tree cover. It is a cause of concern as forests soak up carbon dioxide that would otherwise be free in the atmosphere and contribute to changing climate patterns. Loss of green covers also affects the world's biodiversity.

Environmental pollution is choking many cities worldwide causing immense misery and health-related issues. We are also witnessing abnormal weather conditions with increased frequency of cyclones and typhoons, cloudbursts, floods, uneven rainfall distribution, uncontrollable wildfires, desertification and water shortage. Less than 50 per cent of India's population has access to safely managed drinking water. Groundwater from over 30 million access points supplies 85 per cent of drinking water in rural areas and 48 per cent of water requirements in urban areas. There is a great disparity in this area as well. Can the country afford to have civil conflicts due to water?

We seem to be beset by problems, and the list seems endless. But let us pause here for a while.

The negative impacts caused by the degradation of our environment spurred individuals and organisations to take a stand and push back against the forces behind these disasters. Movements that gave rise to World Earth Day, World Environment Day, World Water Day, and more, shows the gravity of environmental degradation and the measures people are taking to mitigate it. They have been instrumental in influencing international environmental negotiations to commit to stronger environmental agreements.

There is but one habitable planet for us. How would we like to leave it? Better than when we were handed responsibility of it or one that will cause our children and grandchildren great consternation with the way we have steward over it? Let us introspect on this. It requires the concerted effort of each one of us to do what is right. Challenges and hurdles will present themselves every step of the way, but with dogged determination and perseverance, we can change the world and leave a cleaner and better planet.

Stay Connected. Share your thoughts on what you feel about our magazine – CSR Mandate. We would love to hear from you.

Warm Regards,

A handwritten signature in blue ink, which appears to read 'Atula Imchen', written over a horizontal line.

**Atula Imchen**

Editor





# CSR and the Pandemic

**Whilst no one can deny the global disaster that COVID-19 presented, we can choose how we look at it and approach things. As CSR experts, we could decide to see the pandemic as an opportunity to play a meaningful role, learn, evolve, and think outside the box, or we could lose ourselves in the negativity and panic that prevailed.**

Over the last 14 months, we have seen some CSR bodies approach the pandemic as an opportunity wherein they grew, whilst others did not and had an altogether different experience. In this way, we can see how far the CSR sector has come in the seven short years that mandatory CSR has been in place. And how, if we stay true to the letter of the Law and its spirit,

corporates can excel at meeting their corporate social responsibilities and play a crucial role in helping tackle pressing national, geographic and local issues.

## **Learnings from the Pandemic**

In the face of COVID-19, there were many learnings and insights to be gained within the CSR sector. On the other hand, the



**Pearl Tiwari**



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Today, there are incredible grassroots stories of on-ground health workers taking mobile phones and tools like flipbooks to educate their communities, farmers meeting regularly via Zoom and Google Meet, and youth turning to tablets to continue in their skill training and studies – all because of the agility of CSR teams in going digital and taking their communities with them

”

challenges were immense for those involved in the direct implementation. But some fundamental learnings were gained, which should be shared and talked about:

### **Harnessing Community Leaders**

Those who took the time and money to invest in the development of people were able to quickly mobilise. With people-led institutions in place on the ground (farmer producer companies, women's federations, SHGs and Farmer Groups, among others), companies could quickly reach out to community members with information by creating a Single Point of Contact (SPOC) in each community. By choosing one or two people who could relay information to their communities, CSR teams could swiftly disseminate information to help curb the impact of COVID-19. This reinforced the fact that CSR should focus on enabling local people to play a crucial role in addressing local problems. Whilst the road maybe longer, in the end, a cadre of local leaders stands strong long after a corporate has left a community. By investing in grassroots people, one could rely on them



at the coalface and know that they could, and would, get the job done.

### **Go Digital**

The pandemic also taught us that face to face is no longer a necessity. Those CSR arms that were swift to transition to digital modes of connecting, and supported their communities to follow suit, were able to stay ahead of the curve. Today, there are incredible grassroots stories of on-ground health workers taking mobile phones and tools like flipbooks to educate their communities, farmers meeting regularly via Zoom and Google Meet, and youth turning to tablets

to continue in their skill training and studies – all because of the agility of CSR teams in going digital and taking their communities with them.

### **Agility is Essential**

The swiftness of the national lockdown forced the entire sector into a new way of operating. There was a need to reinvent ways of doing things and roll out new initiatives to meet the emerging needs on the ground in the light of this disaster. Those CSR arms that could pivot quickly and with agility could make a bigger impact and, more importantly, garner the trust of the community by being there for





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With reports of the sudden need for oxygen therapy in cities, the demand for oxygen concentrators went into many thousands. Imports increased but most of it got directed into the cities because the advisors saw that as the priority. The already public-health-starved remote areas remained where they were. No ventilators, no piped oxygen and now no availability of oxygen concentrators as well

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them in their hour of need. Those who failed to do so missed a crucial opportunity to help, make a difference, and foster deep community relationships.

In this way, as with all things in life, there was a silver lining in the face of this global disaster.

### The Changing Face of CSR

Whilst the CSR sector has evolved in the past seven years, there are some schools of thought that believe a centralised, autonomous body to govern CSR in the country is required. This thought has probably been centred around generating more equity in investment across the development sector. And whilst the intent may be pure, there are many reasons why such a body is neither needed nor welcome.

Whether the body played an advisory role or as a conduit for centralising funds, the worry is that it will be set up in a city setting run by one group of people, with one group of thinking or agenda – a largely urban set of thinking which is often detached from the larger concerns

of the country in rural India. Once again, there will be issues and geographies that will be neglected. Inevitably, all these think tanks and advisory groups are based in and guided by experts in big cities and will focus on what they know and experience.

A good example of this was seen recently with a desperate need for oxygen in the country. During the peak of the first wave in India in mid-2020, it was realised that oxygen concentrators were a great solution in the remotest geographies as they enabled primary and community healthcare centres to manage basic oxygen therapy without transporting patients through long distances to reach district /larger hospitals where oxygen plants and ventilators were available. The impacts on saving lives were phenomenal. Fast forward to March 2021 and the second wave. With reports of the sudden need for oxygen therapy in cities, the demand for oxygen concentrators went into many thousands. Imports increased but most of it got directed into the cities because the advisors saw that as the priority. The already public-health-starved remote areas remained where they were. No ventilators, no piped oxygen and now no availability of oxygen concentrators as well.

Thanks to the flexibility of using our CSR

funds the way we consider the best, some of us continued to focus on our remote areas, saving lives there too.

The CSR Law was crafted and has evolved based on consultations with industry, and already there are guidelines in place within the Act itself that have been framed based on the vast needs of India. The addition of yet another layer of guidelines in the form of a body presents the danger of CSR becoming 'too prescriptive.' This will also take away from the spirit of the Law.

Each corporate needs to be given the choice to focus on stakeholders of their choice as long as they comply with the list detailed in Schedule VII. Whilst there may be an inequitable distribution of corporate spends across States and causes, we cannot expect corporates to take care of all the different stakeholders in all parts of the country. There is a need to look to other funds to fill the gaps left by corporate, and with Government being the biggest funder, there is an onus to generate more accountability in that direction.

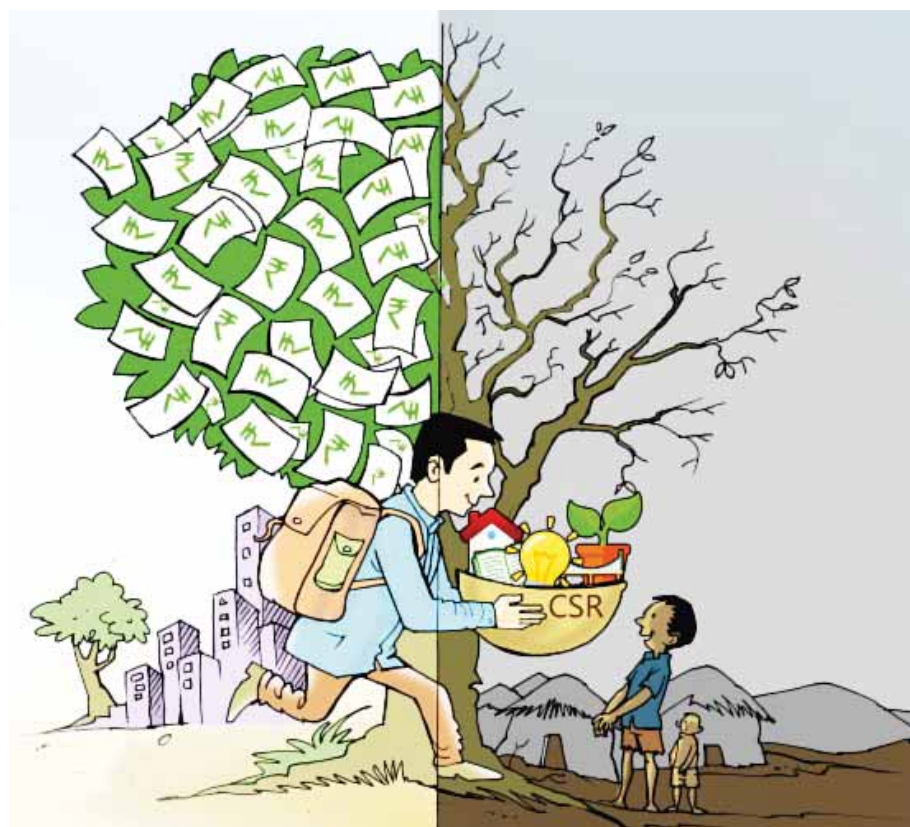
Whilst discussion has centred around an autonomous governing body playing an advisory role, which in itself presents problems, there is also the inevitable talk about creating a centralised fund – something that has been tried in the past



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Whilst discussion has centred around an autonomous governing body playing an advisory role, which in itself presents problems, there is also the inevitable talk about creating a centralised fund – something that has been tried in the past and which has not been the preferred choice for many corporates. The country does not need another conduit for channelising funds

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and which has not been the preferred choice for many corporates. The country does not need another conduit for channelising funds.

Each corporate is best equipped to know what is needed in its geographies - understands the needs of its primary stakeholders and invest accordingly. Many corporates have a long term strategy planned out and are already actively addressing livelihoods, environment, climate, water, and health,

among others, all of which falls within India's national agenda. By pouring all our resources into a centralised programme, and with emerging changes in those, what would happen to existing programmes? Do we allow farmers and youth to starve without a livelihood and communities to go without water when funds are channelised into a priority national issue that may at that time look like the predominant one - like we have currently in COVID-19?

The CSR Law has already put in place a governance mechanism where company board directors are involved in guiding investments, and in further developments, the Chief Financial Officer to monitor its utilisation.

This responsibility entrusted to Independent Directors and the CFO is, in itself, a workable system. So why the need for another think tank to prescribe to corporates on how to use their funds?

Several mechanisms are already in place – an empowered CSR Committee at the Board level, public disclosure of the projects and funds, the inclusion of impact studies of projects, also publicly disclosed to ensure transparency. Now it is time to let this system be, allow India Inc. to meaningfully engage in CSR the way they consider best and minimise the interference.

Let us allow CSR to prevail in true spirit.

*Pearl Tiwari is the Director and CEO of Ambuja Cement Foundation.*



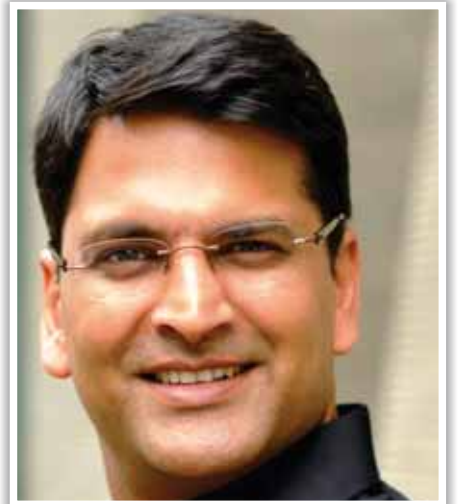




# Role of Public and Private Stakeholders to Protect Land and Water

Whilst climate resilience is being tested in real-time, our only hope for a liveable future is preserving and conserving nature. This involves making investments in nature-based solutions, protecting endangered species and their habitats. It is non-negotiable. Let us assume it is in our selfish interest to identify problems and find solutions for protecting land and water. Everyone has a stake in the future of nature.

As someone who has been working closely in building businesses for two decades, and now founding an ecosystem for nature professionals, I have come to realise that these massive goals and initiatives cannot be achieved unless we all come together - from public to private stakeholders.



**Amit Banka**



“

Looking into the future, crucial indicators include covering areas of biodiversities and different species, managing those areas, ensuring that they are well-connected and integrated on land and through the sea

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A new Protected Planet Report 2020, in partnership with the United Nations Environment Programme (UNEP) and the International Union for Conservation of Nature (IUCN), has revealed that the world has made significant progress in protecting land and water ecosystems. Presently, the protected area has exceeded the Aichi Target set for 2011-2020 of 17 per cent land and 10 per cent water - an increase of over 42 per cent during the last ten years. This is indeed glad tidings for the natural world.

And yet, the report states that the quality of the protected and conserved area leaves much to be desired. Areas that are habitations to key biodiversities like plants, animals, insects, etc., remain unprotected.

### Going Forward - Conservation of Biodiversity and Related Ecosystems is Key

If we are to use 2020's Biodiversity Targets as a springboard to aim higher - we are in good stead. Close on its heels, the United Nations has outlined 2030 Goals to save the planet's biodiversity. Many countries and organisations have pledged to protect 30 per cent of their land and water by 2030. Hence, our priority for the next decade is clear and set.

Looking into the future, crucial indicators include covering areas of biodiversities and different species, managing those areas, ensuring that they are well-connected and integrated on land and through the sea.

This is critical. And here is where I believe the role of public and private stakeholders coming together is essential. We need to achieve transformative changes across economic, social, political and technological factors to meet our biodiversity goals. We have to do it through policies, investments, strategies, and practices so that change happens at the local as well as the global level.

We have to establish accountability for everyone. This is why financial models

with the right processes, systems, technology, and data are required. Not only that, sustainable funding options must be made widely available for all. It can lead to a positive impact on the environment.

The State of Forests Report 2020 clearly shows (in Table below) the critical financial instruments for conservation. From ecotourism to green bonds and biodiversity offsets - there is huge potential for financial gain here.

The report highlights varied options for everyone to get involved.

For private stakeholders - Private Equity and Debt, Corporate Social Responsibility, Smallholders Investment, Private Foundations, Green Bonds, Insurance, and Microcredit.

#### FINANCIAL INSTRUMENTS FOR CONSERVATION

Category of instrument	Examples
Investments associated with industry operations	Bioprospecting; ecotourism
Financial products - markets derived from natural capital assets	Challenge and innovation funds; green bonds; green lending; impact investment funds; multilateral or bilateral environmental trust funds; conservation investment bonds; biodiversity enterprise funds (venture capital)
Financial products - markets derived from regulation	Biodiversity offsets; carbon markets
Taxes and fees	Biosafety fees; corporate private responsibility taxes; compensation for environmental crimes; taxes on financial transactions; taxes on natural resources; taxes on pesticides and fertilizers; taxes on tourism or entry
Environmentally motivated subsidies	Payments for set-asides; conservation easements; subsidies to encourage restoration of degraded land or to plant native tree species
Corporate responsibility, philanthropy, civil society mobilization	Conservation licence plates; corporate foundations; crowdfunding; diaspora savings and investment; lotteries

SOURCE: Based on BESNet, 2019 and UNEP WCMC and UNSO, 2019.

(Table taken from State of Forests Report 2020)





For Public Stakeholders - Environmental Funds, Bilateral Aid, State Budget, Fiscal Measures, and more.

Take the example of Habitat Conservation Banking in the United States, which has emerged as an effective financial template. It engages private players in the protection of species and habitats. Conservation banking allows private landowners to buy credits as compensation for their impact on the environment. The first conservation bank was established in 1995. As of 2019, 158 approved conservation banks are protecting the habitats of 71 species under the Endangered Species Act (1973).

Similarly, Wetland Mitigation Banking ensures compensation for impact to water bodies through compensatory mitigation credits. As of 2013, there were over 1,800 bank sites for tracking and monitoring such areas. These measures focus on expert, consensus-driven efforts to tackle environmental issues.

These are just two examples of establishing financial tools for conservation. For every geography, there are innumerable ways to combine public and private measures to protect nature.

### India – Now is the Time to Invest in Conservation

India is home to nearly 7-8 per cent of species of the world and represents 4 of the 34 globally identified biodiversity hotspots. Consequently, providing conservation measures that involve the private and public sectors can vastly aid

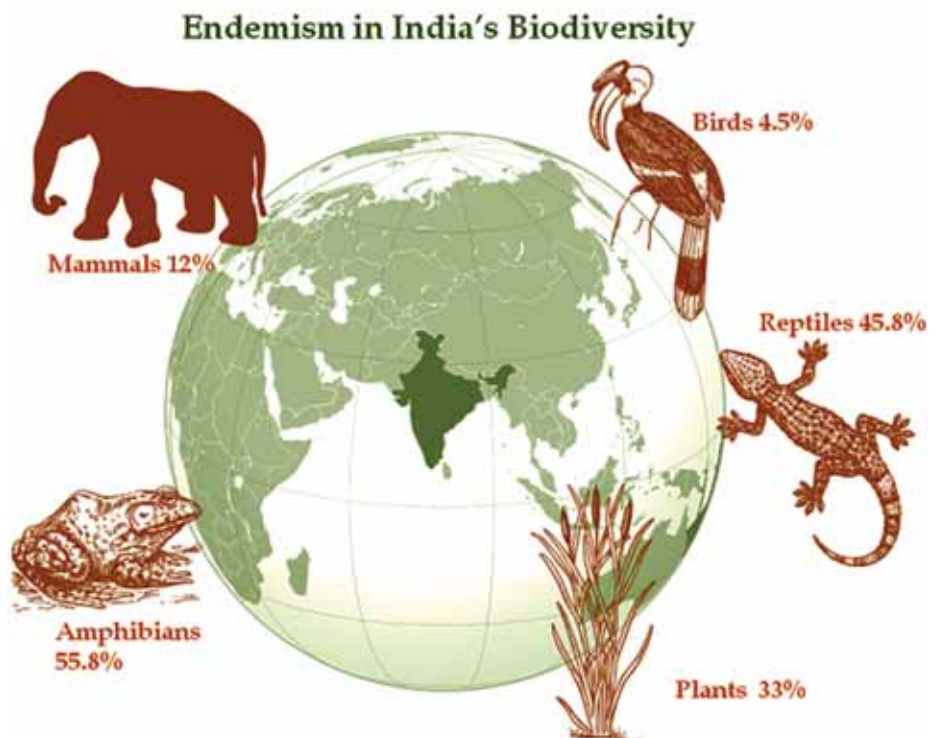
in protecting the biodiversity in the country.

### Let's Pool in Data on Biodiversity and Use it to Preserve Nature

In the way that India, the world's largest democracy came together to fight against COVID-19 - through technology and sheer perseverance of the people to help one another – it is time for us to do the same for nature.

With numerous conversations surrounding data, privacy and more, here is my take. The best use of technology and efficient data gathering mechanisms poses endless possibilities for the natural world. Using tech for nature and building an inspired generation that holds itself accountable can transform our future for the better.

I believe, WeNaturalists, are one such step towards bringing those working at the grassroots together to make a difference by using the power of technology to create a larger impact. Everyone has to come together to facilitate collective action, engagement,





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At such a time when climate change effects can be seen worldwide, we should be taking tougher decisions to protect and conserve nature. We have to invest in nature-based solutions, invest in renewable energy, protect endangered species and their habitats. Measures have to be taken to spread awareness against overconsumption, overfishing, etc., which is causing harm to the environment. We need to adopt a sustainable development model. Only then can we have a fighting chance to revive the economy and ensure a green future for all

”

innovation, capacity-building, networking, and partnerships. And also lend a long-term perspective.

### **Coexisting with Nature Through Awareness Creation and Altering Perceptions**

I believe that the protection of land and water will come through awareness creation at the grassroots. Amplifying the voice and people of nature will lead to better management and communication across the spectrum.

At such a time when climate change effects can be seen worldwide, we should be taking tougher decisions to protect and conserve nature. We have to invest in nature-based solutions, invest in renewable energy, protect endangered species and their habitats. Measures have to be taken to spread awareness against overconsumption, overfishing, etc., which is causing

harm to the environment. We need to adopt a sustainable development model. Only then can we have a fighting chance to revive the economy and ensure a green future for all.

Investing in nature has real potential. Let's tap into it. ■

*Amit Banka is the Founder and CEO of WeNaturalists. He founded it in 2019 with a simple motive – to give a purpose to people's passion for nature. Apart from being a successful entrepreneur, he is also an ardent nature lover, wilderness explorer, and bird photographer. A critical milestone in his life occurred while he was working with Swades Foundation on holistic living projects in rural India. It was here where he realised the need for mankind to coexist with nature, and more importantly, our dependence on it. The learnings from these interventions reinforced his belief that our interaction with nature needs to evolve to create a larger impact. This tremendously influenced his outlook towards creating WeNaturalists.*





## Impact of Sustainable Development on Marketing Tools of Modern Organisations

**In the current time, sustainability is increasingly becoming a critical part of the business strategy. Businesses across industries are looking at it as more than just a new way of marketing that will change their trajectory forever. This new addition has been made keeping the core issue around the environment in mind, which is not only affecting the well-being of the people but also hampering economic development throughout the world.**

Each year on June 5, we commemorate World Environment Day to spread awareness about conserving our nature and burning issues like climate change, water pollution, air pollution, overpopulation, global warming, and every other issue affecting our environment. With this year's theme, "Economic Restoration", we need to come

together to take measures to Reimagine, Recreate and Restore. Ecosystem restoration refers to supporting the recovery of ecosystems that have been degraded or destroyed while conserving ecosystems that are still intact. With the recent restrictions in movement and the slowdown of social and economic activities due to COVID-19, we saw a



**Tribhuwan Joshi**



## Environment - Focus on reducing environmental impact and contribute to the resolution of environmental issues

Since the Industrial Revolution, we have experienced colossal improvements in our lives, but at the same time, this has caused a range of environmental issues. The continuing rise in sea levels and extreme weather resulting from climate change, depletion of our land resources, destruction of our forests, water pollution, and diminishing water resources and changes in our ecosystems are occurring on a global scale. We must take various actions to resolve both the issues resulting from our economic activities and environmental issues to guarantee sustainable development in the future.

## Health - Create a healthy society through the process of prevention, diagnosis and treatment in healthcare

During the COVID-19 pandemic across the world, it became clear that many people cannot receive sufficient treatment for the disease, not only in countries with less developed medical infrastructures but also in advanced countries. Therefore, Universal Health Coverage (UHC) requires the development of medical infrastructure that makes healthcare and medical services readily available to all, improvement in medical care quality, and a society that places top priority on



boost in air quality in many cities and a decrease in water pollution in different parts of the world. However, there is still much need and requirement for brands to contribute to the sustainable development of society by putting their corporate philosophy into practice through sincere and fair business activities.

A strong sustainability strategy of a company can severely affect the people and environment in which it operates. It is about continuity, adopting behaviours and practices to ensure that the planet is habitable and resources available for future generations. Simply put, sustainable marketing is about longevity,

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As a brand, we should focus on measures to resolve social issues through our business activities, including the launch of innovative technologies, products, and services, and aim to be a company that can make a considerable contribution to creating a sustainable society

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swapping short-term gain for long-term success. The below three aspects can help any company manage strategies for sustainable growth.

- Endeavour to understand global as well as local environmental and social issues and create value to address these issues through business activities
- Continuously evaluate the environmental and social impact of the business activities and strive to improve the performance while increasing our positive impact on society
- Constantly reassess whether the set activities are responding adequately to the demands and expectations of society through proactive stakeholder engagement with stakeholders

As a brand, we should focus on measures to resolve social issues through our business activities, including the launch of innovative technologies, products, and services, and aim to be a company that can make a considerable contribution to creating a sustainable society. The priority areas redefined for us are: solving social issues through business activities and reducing the negative impact of our business activities. As a part of our Sustainable Value Plan 2030, we have defined six key pillars mentioned below.





health, with more emphasis on disease prevention and early detection.

### **Daily Life - Support the tangible and intangible aspects of social infrastructure in people's lives through various products, services, and technologies**

As industrial and economic development proceeds urbanisation, our lives have become more convenient and comfortable. At the same time, however, stress and a sense of isolation from society have surfaced as grave issues. The speed at which the spread of information has taken place has created new sources of entertainment and services, but at the same time has generated anxiety and risk as well. Because of the global restraints imposed on daily activities with the spread of COVID-19, face-to-face exchanges



between people are diminishing. The quality of communication is changing along with these circumstances. To build a society that is both sound and sustainable, we must build infrastructure and an environment that will enable everyone to live with a feeling of security and safety and develop communication methods that provide mental support and a sense of fulfilment in life.

### **Work Style - Promote social change where every person is motivated in the workplace through extending in-house work style reforms**

With the ever-increasing competition amid globalisation and technological innovation, a company has to offer a work environment where individuals can exert their capabilities and creativity to the fullest extent and have greater satisfaction in their job. This is the way for a company to grow constantly — by streamlining business and fully utilising diverse human resources. To this end, it is indispensable for us to build a system that realises a new way of working and delivers a communication environment free from limitations of time, location, language, gender, age, or disability. We must also promote various work styles for employees to choose to meet their lifestyle needs and life stage changes. The COVID-19 pandemic rapidly made remote working more commonplace. Along with this, it has presented issues related to communicating with each other, such as experiencing anxiety or loneliness through working alone at home.

### **Supply Chain - Strengthen CSR foundations across the entire supply chain, including factors of the environment, ethics, and human rights**

In recent times, the depletion of agricultural, marine, and mineral resources is now of great concern as consumption of resources expands rapidly to keep pace with an increase of the global population and economic growth. In addition, environmental destruction associated with new land development and labour exploitation issues, including harsh working



environments and overwork, are becoming social issues. Against this backdrop, corporations are now required to build sustainable supply chains from the environment, ethics, and human rights perspective to maintain a sustainable manufacturing process to provide products and services.

### **Governance - Improve and maintain governance structures by further disseminating an open, fair, and clear corporate culture**

To continue to be a valued member of society, a company must meet the expectations of its various stakeholders and win the trust of society. To fulfil its social responsibilities and promote sustainable growth and long-term improvement in corporate value, the company must conduct its business activities under the social code of conduct, with an emphasis on transparency and fairness. It is crucial to improve corporate governance, which is essential for swift and bold decision-making, and implement measures that lead to corporate growth and improvement in corporate value alongside changes in the business environment.

Restoring the entire ecosystem is not an easy task. It demands a collaborative approach involving all key stakeholders like governments, conservationists, financiers, and the general public to identify the barriers to restoration and drive grassroots actions. Let us strive to resolve social issues through business activities and contribute to the realisation of a sustainable society. ■

*Tribhuvan Joshi is the Lead, Brand Communication, PR & CSR, Fujifilm India.*



## How Green is the Green Energy in India? Collision with Power Lines Puts a Critically Endangered Species Under Threat

**The Bombay Natural History Society and The Corbett Foundation welcome the Supreme Court judgment which directs for power lines to be taken underground in the Great Indian Bustard habitat.**

The Great Indian Bustard (GIB) is a critically endangered bird with its last viable breeding population in India. About 100 of these magnificent grassland birds remain in the world. Though habitat loss and degradation have been responsible for this bird's decline in the past few decades, their deaths due to collision with overhead power lines are today the biggest direct threat.

GIB needs grasslands and semi-arid areas to survive. Most of these areas are unfortunately categorised as revenue wastelands in governmental records. They are, therefore, given away for solar and wind energy projects in India. Large renewable energy projects across GIB habitats, mainly in Rajasthan and Gujarat, have put these already threatened species at grave risk of extinction. The Wildlife Institute of India (WII) estimates that 18 GIB die each year due to collision with power lines, making power lines the most significant current threat to GIB.







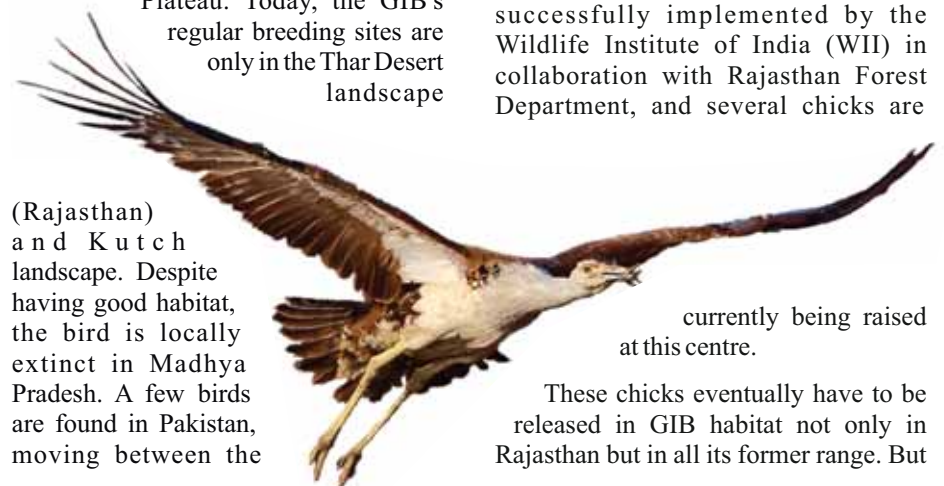
In light of the conservation needs of this critically endangered species, The Honorable Supreme Court's direction in *M. K. Ranjitsinh vs Union of India* (W.P 838 of 2019), dated April 19, 2021, is significant as it gives specific binding directions that have to be mandatorily followed in GIB habitat. It makes it mandatory for all power lines in both the potential and priority habitat of the GIB to be laid underground in future. The Court has directed that lines have to be taken underground immediately, stressing that irrespective of the cost factor, the priority shall be to save the near-extinct birds. Until then, bird-diverters are to be installed on all lines immediately. Only for those high voltage power lines where technical feasibility issues are found in undergrounding, the Supreme Court has constituted a three-member expert committee to examine the feasibility. Significantly, it has also given specific direction to protect the nesting sites of the GIB. For the undergrounding of power lines, the Supreme Court has given a time limit of one year from the date of the order, within which, the undergrounding is supposed to be completed. It is important to note that renewable energy units already existing in the area have not been asked to move from sites or stop work in Rajasthan or Gujarat. Instead, they have been asked to take their lines underground and, till then, install bird diverters.

“Despite the SC order, the work on laying of overhead power lines is continuing in Rajasthan and Gujarat without complying to the conditions laid down by the Supreme Court. None of the existing power lines are fitted with bird diverters. This disobedience amounts to contempt of court. New renewable energy parks have been planned in Gujarat, Rajasthan, Maharashtra and other States. We hope that the companies involved have taken appropriate measures in their planning stages to create infrastructure as mandated by the SC order on the power lines in GIB habitat,” says Kedar Gore, Director, The Corbett Foundation.

These are crucial steps to conserve and prevent the extinction of a bird named after India and was once spread all over West India and the Deccan Plateau. Today, the GIB's regular breeding sites are only in the Thar Desert landscape

two countries. For this reason, India recently proposed a Concerted Action Plan for the GIB under the aegis of the Convention on the Conservation of Migratory Species of Wild Animals (CMS). This was approved by the CMS [UNEP/ CMS/Concerted Action 13.10] in the last CMS Conference of Parties meeting, held in Gujarat in February 2020. Even in this plan, emphasis has been given to minimise the collision by relocating, realigning or redesigning the infrastructures of power lines, windmills and solar panels and bringing the renewable energy projects under the umbrella of strict environmental impact assessment (EIA). India is the current President of the CMS. To fulfil its commitments towards the GIB, India has pioneered a Conservation Breeding Program in Rajasthan. This has been successfully implemented by the Wildlife Institute of India (WII) in collaboration with Rajasthan Forest Department, and several chicks are

(Rajasthan) and Kutch landscape. Despite having good habitat, the bird is locally extinct in Madhya Pradesh. A few birds are found in Pakistan, moving between the



currently being raised at this centre.

These chicks eventually have to be released in GIB habitat not only in Rajasthan but in all its former range. But



for this to happen, large swathes of safe and secured habitat must be made available to GIB in future.

"One of the most charismatic bird species of India, the Great Indian Bustard, is undoubtedly standing at the doorstep of extinction. With a population of less than 100, the Thar Desert is the only Intensive Critical Care Unit of the Great Indian Bustard in the world. BNHS applauds the judgement of The Hon. Supreme Court of India and firmly believes in leaving no stone unturned in safeguarding the remaining Bustard habitats in the Thar Desert," says Dr Bivash Pandav, Director, Bombay Natural History Society.

### Importance for other Bustard species – Lesser Floricans

GIB habitat areas are also vital for endangered birds like the Lesser Florican



Caracal



Desert Cat



Desert Fox

and MacQueen's Bustard, which are smaller Bustard species requiring grasslands to survive. It is also pertinent to point out that several other birds also die in collision with power lines. The WII also estimates that over one lakh birds are killed annually in the Thar by electric lines. TCF's unpublished data reveals that nearly 30,000 birds of different species die due to collision with power lines annually just in Abdasa Taluka of Kutch District Gujarat. The GIB habitat in Abdasa also provides refuge to about 25 other globally threatened birds. Several lesser-known but threatened species of mammals like caracal, desert fox, desert cat, hedgehog, hyena, Indian wolf, etc.

BNHS and TCF have been working for Bustard conservation for decades, including monitoring, habitat improvement, community engagement and conservation planning with State Forest Departments and villagers. We firmly believe that India can only fulfil its green goals by working together to ensure the last GIBs should survive and flourish in the wild.

By preserving the last arid and grassland landscapes for present birds and future birds to be released from captivity, we ensure India takes a leadership role in GIB conservation. We also appeal that the Government of India must have a Grassland Conservation Policy that protects the interest of species dependent on these important ecosystems and the local communities with whom the GIBs coexist in agro-pastoral landscapes.

GIB maps prepared by Wildlife Institute of India, as made available to the Supreme Court, are as below:



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Source: BNHS and Corbett Foundation





## HCL's WASH Programme - A Rural Imperative

Shiv Devi, a 45-year-old Anganwadi worker from Suthena village in Hardoi, a district of central Uttar Pradesh, lost her husband due to a diarrheal illness. In 2018, her village did not have toilets, and defaecating in the open was the norm. She volunteered to become part of the Village Water and Sanitation Committee (VWSC) and understood the health problems linked to poor sanitation and contaminated water. With her new learnings, she decided to make other people in her village aware of the complications arising due to the absence of proper sanitation. As a result of her tireless efforts, her neighbourhood has now stopped defecating in the open. People in her village have realised that the water they were drinking earlier from shallow hand pumps is tainted with nitrate and fluoride, which is detrimental to their health. The villagers have now opted for piped drinking water supply which has improved their health drastically.



Alok Varma



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India alone accounted for 90 per cent of the people in South Asia and half of the 1.2 billion people in the world that defecate in the open. The open defecation practice also leads to faeces being introduced daily into the environment, which regularly exposes children to excrement through direct contact. This compounds the risk of spreading diarrhoeal and waterborne diseases given the lack of regular handwashing and microbial contamination of water, contributing to nearly 100,000 diarrhoeal deaths of children under five years in the country

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Unlike Suthena village, nearly 50 per cent<sup>1</sup> of India's population still does not have access to safe drinking water. Almost 38 million Indians suffer from waterborne diseases annually, and diarrhoea alone kills over 700,000 Indians every year, of which 150,000 are children. In 2015, approximately half of India's population suffered the indignity of defaecating in fields, forests, bodies of water, or other public spaces due to a lack of access to toilets. India alone accounted for 90 per cent of the people in South Asia and half of the 1.2 billion people in the world that defecate in the open. The open defecation practice also leads to faeces being introduced daily into the environment, which regularly exposes children to excrement through direct contact. This compounds the risk of spreading diarrhoeal and waterborne diseases given the lack of regular handwashing and microbial contamination of water, contributing to nearly 100,000 diarrhoeal deaths of children under five years in the country.

The Government of India earmarks funds to improve water and sanitation facilities through policy interventions like Swachh Bharat Mission, Jal Jeevan Mission, Atal Bhujal Yojana, Swachh Bharat Mission, Menstrual Hygiene Management and Swachh Vidyalaya Abhigyan. These policies have helped improve sanitation, provide clean drinking water and improve menstrual hygiene. The Swachh Bharat Abhiyan, launched by the Government of India in 2014 to make India Open Defecation Free (ODF) in a time-bound manner by 2019 – the 150th birth anniversary of Mahatma Gandhi, has also galvanised several organisations to implement WASH projects across the country. As a result, the pace of toilet construction and its usage has steadily increased since 2014.

To support the Government in its efforts of providing clean drinking water and implementing sanitation measures, we have, through our flagship programme – HCL Samuday (aimed at developing source code of a sustainable, scalable, and replicable model of holistic rural development), made our foray in 164 Gram Panchayats of three blocks in



Hardoi by conducting a multi-faceted baseline survey. The Gram Panchayats fared very poorly in water, sanitation, hygiene and solid and liquid waste management. The survey revealed that many households did not have toilets, leading to all family members defaecating in the open. This practice was affecting women and children the most. Women could only attend to the call of nature early morning or late in the night to avoid being seen by others. To avoid going out at other times, they had to either suppress till a suitable time is available or simply, eat and drink less.

To counter this problem, our team worked with Self Help Groups, Aanganwadi workers and Gram Pradhans to sensitise the community on





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Access to safe water is essential for every household for drinking or sanitation purposes.

Addressing the fundamental human needs of safe drinking water, sanitation and hygiene, we have been working over the last six years to ensure that people in Hardoi have access to clean drinking water. The focus is on taking care of both infrastructure and behaviour change-related needs

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the importance of adoption of safe sanitation practices, consumption of safe drinking water, maintenance of minimum standards of hygiene and making necessary arrangements for proper management and discharge of solid and liquid waste. Following a Community-Led Total Sanitation (CLTS) approach, more than one lakh households have been motivated to adopt

safe sanitation practices by using individual household toilet/community toilets so that Gram Panchayats attain the status of open defaecation-free (ODF). Gram Panchayats celebrate this status with utmost zeal and vigour through Gaurav Yatra or Walk of Pride, where all villagers participate.

### Liquid Waste Management

The story of a 40-year-old Ram Rati from Hathora village (Hardoi district) is no different. Just like all other women in her village, she used to make multiple trips to the village pond to discard the wastewater generated in her house during bathing, cooking, cleaning and other household activities. All of this because her house was not connected to the drains. HCL Samuday team spotted this issue and helped construct a soak pit at her home. Following her example, all the nearby families also constructed similar soak pits in their respective households.

So far, 86 soak pits have been constructed in the village. This has not only led to a cleaner and disease-free environment but is also helping in revitalising groundwater.

Today, a total of 3.4 lakh litre of wastewater is being treated every day through 240 individuals and 21 community soak pits and approximately 16 km drainage networks in 16 villages.

### Safe Drinking Water

Access to safe water is essential for every household for drinking or sanitation purposes. Addressing the fundamental human needs of safe drinking water, sanitation and hygiene, we have been working over the last six years to ensure that people in Hardoi have access to clean drinking water. The focus is on taking care of both infrastructure and behaviour change-related needs.

For making clean drinking water available and accessible to all, wherever possible, chlorination of functional hand pumps is carried out. This is complemented by the development of piped drinking water supply system by facilitating the construction of overhead tanks and direct pumping facilities in collaboration with the local community. Management of these sites is also ensured by strengthening community groups called Water User Groups. With nine



operational sites and 21 others in various stages of completion, the community is experiencing the benefits of piped drinking water supply. This intervention was designed for an overall outreach of 5,597 households reaching out to 37,690 individuals.

## WASH in Schools

Our CSR outreach - HCL Samuday - is a holistic rural development programme, and improvement in school education is catered with Happy School intervention. Several studies over the years have shown how the unavailability of sanitation facilities or availability of poor or non-functional toilets and drinking water facilities lead to higher dropout cases at school, especially for girls. To ensure better classroom participation and retention, basic infra facilities have been improved in 517 schools. It is ongoing in 238 more schools. Along with ensuring facilities like library set up, electricity, sports equipment, it is made sure that all

schools have clean, functional toilets, separate for boys and girls, and also hygienic drinking water and handwashing facility.

## Scenario During the Pandemic

COVID-19 pandemic populated the message of healthy and hygienic practices across the world. Studies also highlighted the role of clean water, sanitation and hygienic practices in preventing the spread of the virus. We distributed essential personal hygiene kits to 30,000 families with the help of local volunteers while following COVID-19 guidelines of social distancing and wearing face masks. Each kit comprised two soaps, two face masks, sanitary napkins and an information pamphlet on preventive measures to be taken during COVID-19 and hand washing techniques.

Not only this, the issue of solid waste management was taken care of by the team during the lockdown. Waste is collected from the doorsteps and stored in designated infrastructure created at the village level. Along with regular door-to-door (D2D) collection from 10,500 households, our team also imparted

knowledge around the management of wet and animal waste at home. Through this intervention, nearly 600 tonnes of solid waste is managed, and 237 tonnes of compost produced.

## Way Forward

We have been aiding local people of the community in identifying the problems, co-creating solutions and then assisting in executing the initiatives, thus lending the dimension of sustainability and ownership to the vision of the development. Initiatives across agriculture, education, healthcare, renewable energy infrastructure, livelihood, and WASH make holistic rural development possible. The programme would continue to support people in the erstwhile three blocks of Hardoi. It is also expanding to eight more blocks of the district.

For initiatives related to WASH to succeed at the country level, there is a need for behavioural and attitudinal change along with, of course, support structures such as suitable infrastructure facilities. There is also a need to focus on softer components such as regular training, an inspection of facilities, supervising and assessment of facilities, strengthening village level institutions (VWSCs) and eventually finding reconciliatory methodologies to the problems faced on the ground.

WASH is also a vital factor towards a child's survival, growth and development, notably to prevent malnutrition and preventable diseases, curtail neonatal mortality and improve education outcomes.

Like Former United Nations (UN) Secretary-General, Kofi Annan rightly said, "We shall not defeat any of the infectious diseases that plague the developing world until we have also won the battle for safe drinking water, sanitation, and basic healthcare."

*Alok Varma is the Project Director of HCL Foundation.*

<sup>1</sup><https://www.unicef.org/india/what-we-do/clean-drinking-water>

<sup>2</sup><https://pubmed.ncbi.nlm.nih.gov/33532786/>







## Pernod Ricard India- Transforming Communities and Accelerating Local Development

India is staring at a chronic national water crisis that is further influenced by its varying geographical conditions and inequitable socio-economic capabilities. According to World Resource Institute, more than 100 million people live in areas of poor water quality, and 54 per cent of India faces high to extremely high water stress.



Sashidhar Vempala

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Envisioning water at the crux of all development, we, at Pernod Ricard India (PRI), have emerged as a leading corporate citizen, championing 360° water stewardship with communities and programmes driving strong progress on six targets under SDG 6 for Clean Water and Sanitation

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Groundwater irrigation covers more than half of the total irrigated area (around 42 million ha)\*. The unsustainable groundwater use necessitates creating watershed level surface storage and recharge structures, supply and demand management and water management practices for improved water use efficiency in the agriculture sector.

Envisioning water at the crux of all development, we, at Pernod Ricard India (PRI), have emerged as a leading corporate citizen, championing 360° water stewardship with communities and programmes driving strong progress on six targets under SDG 6 for Clean Water and Sanitation. At Pernod Ricard India, we are committed to contributing to India's development journey by transforming our communities and accelerating local development. With our Water Development Program, we aim to foster resilience by safeguarding the availability, quality, quantity of safely managed water for our communities.

We have deployed a multidimensional approach to strengthen natural water availability, facilitate access to clean drinking water and promote community-driven sanitation and hygiene management.

### Community Managed Water, 365 Days of the Year

As the country's groundwater extraction rate peaks beyond 63 per cent\*, its rural

landscapes face an unprecedented challenge; there is not enough water to fulfil the needs of the primarily agrarian population.

As a net Water Positive company since 2019, we are cognizant that our impact on water extends beyond our fence. We have strategically mapped the water stress at the watershed level of our operations across India with the help of the World Research Institute (WRI) - Global Water Risk Atlas and India Water Tool. This has enabled the development of contextual programmes centred on fostering water resilience with communities, aiming to create surface storage and natural harvesting structures and embedding deep aquifer recharge channels for groundwater replenishment.

Through our flagship programme called WAL (Water, Agriculture, Livelihoods), we continuously engage with more than 1,08,000 community members near our operations in seven States. Working with farmers, especially small and marginal farmers, our programme focuses on replenishing surface and groundwater for ensuring year-round availability of water through groundwater replenishment and surface storage creation. The programme also promotes water-efficient agriculture, sustainable production, natural resource management to augment their disposable incomes.

Across 11 ongoing projects, through

Pernod Ricard India Foundation, we have created a total water potential of 940 million litres since 2019-20 through construction, desiltation and renovation of more than 797 water structures, including farm ponds, traditional tanks, government irrigation canals, nala bunds, check dams, geomembrane tanks, recharge wells, wastewater recharge wells and rainwater harvesting structures. With participatory engagement, the programme has also strived to build community ownership of





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water structures for long-term sustainability by establishing institutions such as Gram Sangathans, farmer groups, and water management committees.

Apart from focusing on increasing storage and recharge, our WAL programmes extensively focus on maintaining sustainable and cost-effective methods to reduce water consumption in agri-allied activities while increasing yield dividends for all cohorts of farming groups. Deployment of micro-irrigation techniques such as drip and sprinkler systems along with



laser levelling of uneven fields have demonstrated 25-40 per cent water savings in Behror. In Nashik, the programme has communities conduct expansive water resource mapping and budgeting exercises for seasonal planning. The establishment of Jal Panchayats has also been piloted at Derabassi, Punjab, to create a

governance system for equitable water along with the ongoing demonstrations of sprinkler systems with the State agriculture department.

### Safe Drinking Water for All

The country has only 4 per cent\* of the world's potable water, which is a gross under-supply considering its burgeoning population. Many groundwater resources across the country are also affected by high salinity, arsenic, fluoride and other impurities that make even the available drinking water unfit for use, and personal water purification systems are too costly to afford for most.

As a company, we envision Water, Sanitation and Hygiene as a human right for communities. With the vision to bridge the demand and access gap in the availability of potable water to underserved communities for whom drinking is inevitably tied to good health and wellbeing, our Foundation's Clean Drinking Water programme has installed 50 Water ATMs at 18 locations across six States, serving more than 1,50,000 beneficiaries. The unique “Hub and Spoke” model adopted in the programme addresses the gaps in reach and delivery of a high maintenance single RO model which often fails to curb access and related labour and transport costs for communities.

The Hub and Spoke model provides clean drinking water to communities in their neighbourhood through specialised ring structures, which serve as storage and





dispensing stations to supply water from a centralised RO plant through a rigorous quality assured process. The ATMs also generate local employment opportunities by employing youth and women SHGs from the communities as machine operators through an RFID-based dispensing model providing water at just 30 paise per litre. The units which produce water, compliant with the Indian Standards 10500, are equipped with technology for real-time monitoring of the quality of water and usage. Through

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In Sahibganj, a NITI Aayog aspirational district of Jharkhand with a significant tribal population, with most rural households below the poverty line, the Hub and Spoke model of Water ATMs serves 10 locations with a 2,000 LPH RO and 10-ring structures. Serving a population of 75,000, the programme has gained widespread appreciation from the district authorities for its contribution to bettering the WASH indicators of the district

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targeted community engagement centred around increasing the awareness of the need for safe drinking water and community buy-in, the programme also aims to bring about a long-term behaviour change in the consumption pattern to improve public hygiene and sanitation.

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### Grooming the Cleanest Villages

As villages in the country are rapidly urbanised with changing consumption patterns, existing infrastructure and processes of waste management are falling short in accommodating the increased and diversified categories of waste emanating from rural households. Built on the concept of promoting pride, ownership and accountability towards public hygiene in three villages around our plant in Behror, Project Sampurn Swachhta Abhiyan aims to bring about a holistic behaviour change in the community members and instil competitiveness towards becoming the cleanest villages in the region. The

project is establishing a dry waste collection centre and facilitating door-to-door collection of waste, thereby engaging 357 households and benefitting 4,400 community members. The project also generates local job opportunities for the operators of the collection vehicle while handing the ownership to the village administration.

With less than a decade to go, the 2030 Sustainable Development Agenda needs urgent action from the global community. Among the 17 SDGs, the progress on people goals i.e. SDG 1 to 6, is vital for achieving the rest, more so concerning the developing world.

We realise that sustainable access to water, sanitation supplemented with robust community-based governance and inclusion efforts, can effectuate transformative positive displacement for marginalised people with far-reaching impact on their health, nutrition and savings in time and money.

For us, it does not stop at merely creating these resources at people's disposal. We strive to empower those who are the farthest from the first, including small farmers, low-income groups, and rural women, to live a life of dignity and well being. ■

*Sashidhar Vempala heads CSR, Sustainability and Communications at Pernod Ricard India.*

*\*Insights from Sattva Consulting (India Data Insights).*







## Dalmia Bharat Group - Going Beyond Mandated Targets to Give Back to Society

As the expanding population puts pressure on natural resources, there is increasing strain on the land and environment, leading to depletion of water and other natural resources. To mitigate hardships of local communities while relieving environmental stress wherever, we, the Dalmia Bharat Group through the Dalmia Bharat Foundation (DBF) operate pan-India, have been undertaking various measures to help the people and the planet. The geographical footprint of our Foundation is spread across 23 locations across 14 States and reaches out to over ten lakh people in 1,300 villages.

### Varied Initiatives

We work closely with communities around our manufacturing locations. Therefore, our CSR efforts focus sharply on livelihoods, climate action and building social infrastructure. These focus areas align with the MCA Guidelines on CSR, national priorities and schemes, and the UN's Sustainable Development Goals.

### Soil and Water Conservation Programmes

Under Climate Action, our prime focus is on water harvesting and water conservation, mainly through projects such as Integrated Watershed Development (IWD).

Water plays a pivotal role in increasing land yields. The non-availability of timely and adequate water for irrigation is a serious impediment to achieving higher productivity



**Vishal Bhardwaj**

and profitability. The farmers in our locations, especially in the Lalgudi Taluk, Trichy District of Tamil Nadu, and in Mylavaram Mandal, Kadapa District of Andhra Pradesh and Ramdurg Taluk, Belgaum District of Karnataka, all face similar water woes.

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Consider Kadapa in Andhra Pradesh, which spans 15,000 km with around 65 per cent of its population in rural areas.



The Government of India had declared Kadapa as one of India's 250 most backward districts in 2006. Within

Kadapa, our interventions are in areas declared drought-prone. Most villagers are small and marginal farmers. Their primary source of income is from rain-fed agriculture and rearing milch cattle. Both occupations need significant amounts of water for effective yields. Given the need for more water in the drought-prone location, we are scaling up water harvesting work in the region. This includes a farm pond project.

We are addressing the water scarcity issue via IWD projects in collaboration with NABARD (National Bank for Agriculture and Rural Development), which are spread over five years.

Furthermore, in the last ten years, we are enabling the harvesting potential of more than 2900 crore litres of water annually. In addition, we help tribal households enhance their income through horticulture.

Since most of our CSR projects are concentrated in remote rural regions, we also assist local administrations and communities to fill existing infrastructural gaps. This helps in improving the quality of life of communities around our plants. We work both on water harvesting and water usage with neighbouring communities. We also aim at checking soil erosion with water harvesting and micro-irrigation projects.



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The challenge concerning energy is not only an industrial issue but one that affects the rural population too - be it depleting fuelwood resources for cooking or erratic power supply at homes. For rural people, this is a daily challenge. Alongside this, these people face health and environmental challenges with smoke emanating from millions of wood-burning chulhas (stoves). Moreover, energy conservation is equally important to mitigate climate change and its consequences

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### From Subsistence Farming to an Agri-Entrepreneur

#### Illuri Venkata Reddy

Living in Peddakomeralla village in Kadapa district of Andhra Pradesh is a



family of four headed by Illuri Venkata Reddy. Illuri is a small farmer owning four acres of land. Despite having a tube well, his land had been largely rain-fed as the water table had receded more than 250 feet below ground level because of a lack of water conservation practices. He grew cotton and Bengal gram, but the harvest was barely enough to earn a living to feed his family. Despite owning the land, he had no choice but to find work as a labourer to meet his family's needs.

In 2017, Dalmia Bharat Foundation and NABARD jointly picked up a watershed project, which also incidentally encompassed Peddakomeralla village. As part of the project, they constructed a check dam and check wall upstream of his land, coupled with a farm pond with a water harvesting capacity of 800 m<sup>3</sup>. It was a turning point for Illuri. He saw an improvement in the soil moisture and an increase in the water table. Supplemented by good rain last year, his defunct tube well is functional once again, and he can irrigate his crop. Expectedly, his annual income from agriculture has increased two-and-a-half times over the previous year. The mere availability of water did not make Illuri complacent. He sought DBF's assistance to avail government subsidy to set up drip irrigation on 2.5 acres of his land. Apart from cotton, he has now diversified to cash crops like chillies with these water management practices. He now expects his income to grow further.

Illuri Venkata Rao has transformed his destiny. He is now a shareholder of the local farmers' producer company. He now pursues agriculture as an entrepreneur and is an inspiration to hundreds of other farmers in the vicinity.



### Water Harvesting in Drought Prone Kadapa

One of the best cases is a Public-Private People's Partnership project for water harvesting in drought prone Mylavaram Tehsil in District Kadapa of Andhra Pradesh to improve the livelihood of locals.

Kadapa District has been declared drought-hit twice in the last few years. The vagaries of water availability create a crisis for agriculture, human and cattle



Before



After

consumption. With groundwater reserves being out of reach for most villagers, agriculture is rain-fed. Water scarcity makes cattle rearing challenging, threatening their survival and impacting milk yields and productivity.

To address this issue, we explored opportunities for building farm ponds to act as a catalyst in storing rainwater for productive use in agriculture, for milch animals to meet drinking water needs and recharge the groundwater table. We met



local officials to set up partnerships to accelerate our work. Together, we made a plan for creating farm ponds through MNREGS. We were advised to play the role of a facilitator in identifying areas for

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As of March 31, 2021, more than 52,000 students have benefitted from solar products and can study comfortably in the evening. Additionally, 314 clean lighting solutions have been installed and promoted in 2020-21

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the creation of farm ponds for both rainwater storage and recharging groundwater reserves.

### Outcome:

175 ponds with a total capacity of 1.85 lakh m<sup>3</sup> were created

One check dam and one causeway constructed, with a total capacity of 50,000m<sup>3</sup>

Employment opportunities worth Rs 155 lakhs were created for the local community via this project.

Thanks to the above, we achieved the following:

Rise in annual income of Rs. 6000-7000/- per family

50 acres of land now irrigated mainly for fodder cultivation

Increase of 2 to 3 litres of milk reported by members of the Dairy FPO (Farmer Producer Organisation)

No depletion in the water table in the catchment area of these structures reported recently.

### Promoting Sustainable, Clean Energy

Apart from water, we promote access to solar energy for domestic plus agricultural purposes and access to cleaner fuels for cooking.

The challenge concerning energy is not only an industrial issue but one that affects the rural population too - be it depleting fuelwood resources for cooking or erratic power supply at homes. For rural people, this is a daily challenge. Alongside this, these people face health and environmental challenges with smoke emanating from millions of wood-burning chulhas (stoves).



Moreover, energy conservation is equally important to mitigate climate change and its consequences.

Burning fuels such as coal, oil and biomass remain the principal energy source in rural and traditional sectors, contributing to a third of India's energy. The incomplete combustion of biomass is one of the main sources of indoor air pollution, which directly and indirectly contributes to greenhouse gases.

We address these challenges in a multi-pronged manner, with non-conventional and renewable energy as one of our important pillars. We also promote dung-based biogas plants. We took all these steps to reduce emissions from greenhouse gases and help India move towards becoming a low-carbon society.

Our energy conservation and climate change initiatives work to address energy needs sustainably via renewable resources. We work closely with local communities to change mindsets and replace traditional energy sources with clean energy, clean cooking and clean lighting.

Solar energy solutions comprise a





considerable quantum of our work, with solar off-grid products such as solar lanterns, solar home lighting systems, solar study lamps, solar streetlights and solar pumps promoted across our intervention areas. In Meghalaya, we ran awareness campaigns on the UJALA (Unnat Jyoti by Affordable LEDs) programme, making people aware of the scheme.

As of March 31, 2021, more than 52,000 students have benefitted from solar products and can study comfortably in the evening. Additionally, 314 clean lighting solutions have been installed and promoted in 2020-21.

## Doubling a Farmer's Income via Knowledge Sharing

### Nallaswamy

Nallaswamy lives in Keelarasur Village of Pullambadi Block in Trichy District of Tamil Nadu. He owns five acres of land and has an open well for irrigation. Due to a lack of resources, he could only irrigate one-fifth of his land to cultivate chillies. Since the remaining four acres are fully rain-fed, he opted for less remunerative crops such as cotton and maize.



The income was insufficient for his family of five. Failed rains often forced him to do menial jobs as a daily wage. Fortunately, Nallaswamy attended DBF's community meeting held in his village, informing small and marginal farmers about an irrigation project of the Government of Tamil Nadu based on

solar pumping. The scheme offered Rs 2.85 Lakh subsidy to eligible farmers. Nallaswamy sought DBF's help to avail of this scheme.

We helped complete all formalities and followed up with the State Government to ensure early approval of his case. Soon after, Nallaswamy was able to install a 5 HP solar-powered irrigation pump at his well. It was a game-changer. Able to irrigate his entire field, Nallaswamy migrated to more rewarding crops such as onion and sugarcane, the latter grown through drip irrigation.

His income rising 200 per cent, an elated Nallaswamy says, "Solar-powered irrigation has led to productive use of my entire field. Drip irrigation has helped conserve water and ensured a significant increase in yields as well. I thank Dalmia Bharat Foundation for helping me achieve this."

### Livelihood

This is our flagship project with a focus to skill the community in farm and non-farm trades and to develop human capital in terms of Self Help Groups (SHGs), Joint Liability Groups (JLGs), Farmer Producer Organisations (FPOs), etc., to improve the livelihood, and thus, the income of the community. Our primary objective is to impart skill training to



youth to make them employable through our Skill Training Centres. There are 11 Dalmia Institute of Knowledge and Skill Training Harnessing (DIKSHa) centres, with the capacity to train 5000 youth every year. Besides, we run three Industrial Training Institutes (ITIs). Working closely with farmers, we help them increase their income via improved farming practices and by developing their social and natural capital.

### Highlights

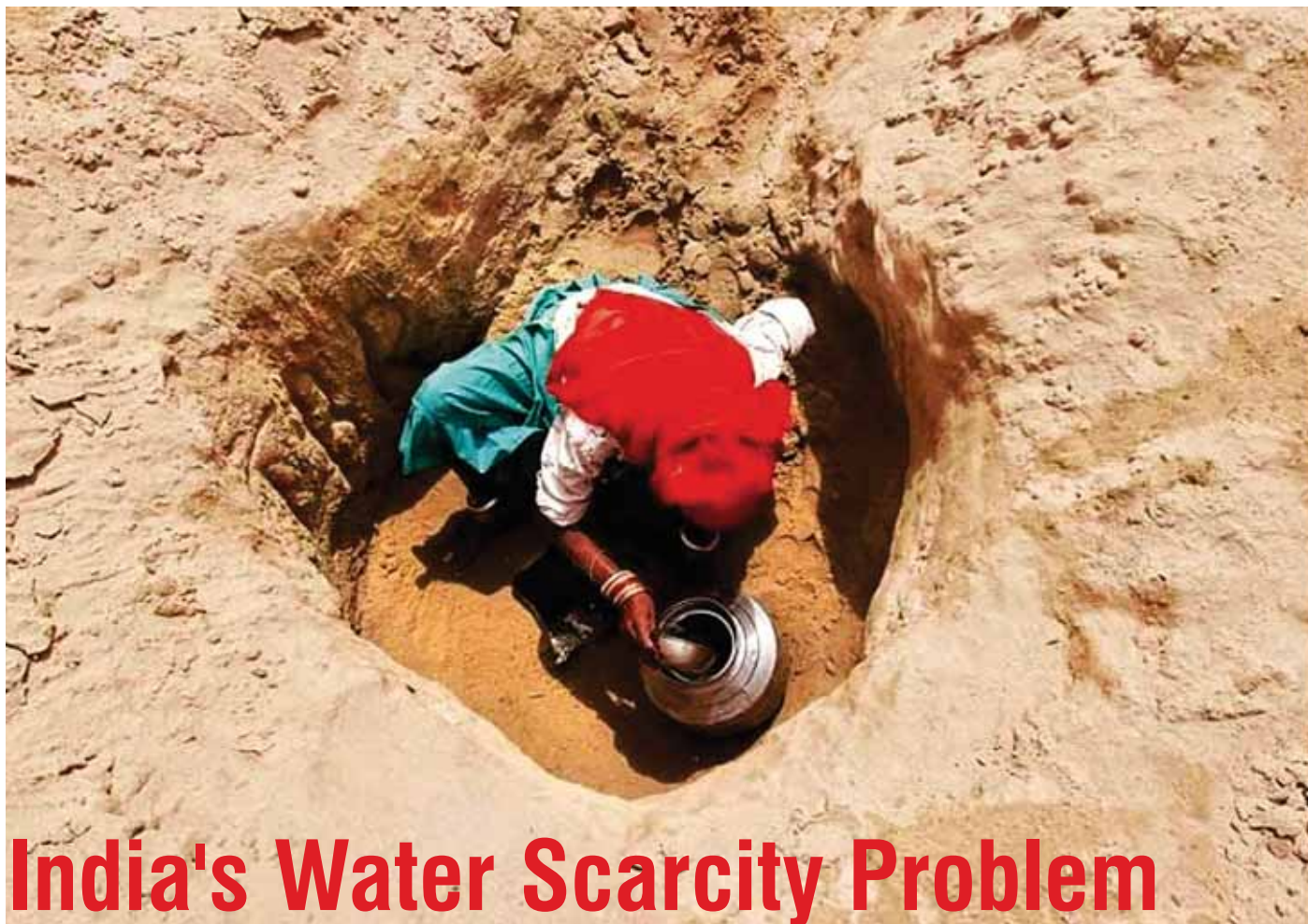
- 5,000 + trainees completed training in DIKSHa
- More than 10,000 women collectivised into 1178 Self Help Groups to explore livelihood opportunities
- 2,895 crore litres of water harvesting capacity created
- 2,140 acres land brought under micro-irrigation
- 1,401 water-harvesting structures built
- 20 per cent increase in crop yields
- 15 per cent average increase in income
- 145 clean cooking villages
- 161 clean lighting villages, wherein no kerosene is used for lighting
- 27,000 solar household lighting solutions and 533 solar streetlights
- 11,758 clean cooking solutions
- 67,972 tons of CO<sub>2</sub> emissions reduced

### Way Forward

At Dalmia Bharat Group, we have been fulfilling social responsibilities for more than eight decades. We have always believed in giving back to society, which has, in turn, created an opportunity for us to operate our business. Accordingly, we work in a most structured manner to usher positive change in people's lives and lifestyles. As a result, we typically go beyond compliance obligations to fulfil our objectives.

Our CSR focus areas are clearly defined and implemented through well-planned projects. There is a laid CSR Roadmap, with goals for each focus area laid out till 2030. ■

*Vishal Bhardwaj is Group Head – CSR, Dalmia Bharat Group and CEO - Dalmia Bharat Foundation.*



# India's Water Scarcity Problem Can Be Solved With Industry Action

The discussion about the preservation of water has taken centre stage among corporates and the government alike. The urgency to act on water conservation has not been greater today than at any other time.

Stress on our water resources has increased. Our global water usage has gone upwards by a factor of six in the past 100 years at a rate of about one per cent per year. Several factors are responsible for this surge in demand - increase in population, rapid economic development, and changes in consumption patterns are some of the key drivers in increased water usage over the years.



**T. Aswin**

A study by the 2030 Water Resources Group (2009) stated that the world would face a 40 per cent global water deficit by 2030 if things continue to be as they are. Water-related risks are highly localised since the water distribution is uneven, with some areas receiving plenty of rainfall while others are susceptible to groundwater depletion and water-extreme events like droughts and hurricanes.



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Globally, agriculture uses 70 per cent of the available water. Therefore, more efforts need to be expended to improve the agriculture processes. As the world grapples with water scarcity, India's water shortages have widened, with urban and rural India reeling under severe water duress

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The situation turns for the worse if the numbers are hyper-focused on India. India is home to 1.3 billion people with access to four per cent of the world's freshwater resources. India is primarily an agricultural economy, and farmers consume about 90 per cent of the groundwater water available. Globally, agriculture uses 70 per cent of the available water. Therefore, more efforts need to be expended to improve the agriculture processes. As the world grapples with water scarcity, India's water shortages have widened, with urban and rural India reeling under severe water duress.



The problem of water shortage is exacerbated by the lack of safe drinking water. According to UNICEF, 2.1 billion people still lack access to safely managed drinking water services, and water-related diseases remain endemic in many countries (WHO/UNICEF 2019). We are also acquainted with the fact that in 80 per cent of households without access to water on premises, women and girls are responsible for water collection. In India, around half of the people are grappling with high-to-extreme water stress, and about 200,000 people die every year simply because they do not have access to safe drinking water.

Water is a vital input for any industrial process. Therefore, access to a continuous supply of water is a must for

any business to operate. Industry cannot recant its responsibility towards water stewardship. It is paramount that industry assesses water risks and water stress factors and devise appropriate measures to ensure that it follows responsible water stewardship practices in areas where the companies operate. While managing factory operations, companies need to prioritise tasks and adopt targets to reduce water use or improve the quality of discharged water.

At Danone India, we are focused on reducing water usage intensity within our factory operations with the end aim of being a water-neutral factory. Globally, we are committed to implementing in all our production sites a holistic 4R Approach (Reduce, Reuse, Recycle & Reclaim). The proof of Danone India's water stewardship commitment is that we have reduced our water usage intensity by 50 per cent from 2015 baseline levels. Our factory in India at Lalru has also committed significant investment towards water usage reduction as part of our water stewardship programme.

The commitment to conserve water goes beyond factory doors. Our factory in Lalru is in an over-exploited water zone as identified by Central Ground Water Board. Consistently depleting groundwater level presages water shortage in the coming future.

We are educating farmers on sustainable agriculture practices through five



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Managing water provides an excellent opening for business to forge competitive advantages while securing the license to operate and gains in reputation. By demonstrating sustainable behaviour, companies can attract millennials to choose their products whilst fostering relationships with the local communities

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Farmers Field Schools. We created a rainwater harvesting potential of 47,000 CUM by rejuvenating six ponds through the Lalru Plant Watershed area. In addition, we are promoting sustainable agriculture practices among people encompassing 600 acres of agricultural land. We have also partnered with WWF to restore Kali Bein River and Kanjli Wetland in Punjab. This wetland is in a state of degradation due to several threats like overwater abstraction in the catchment area, intensive chemicals, pesticides and water usage in farming, land-use changes and encroachment, water pollution, weed infestation, lack of multi-stakeholders coordination and absence of conservation strategy.

### The Road Ahead

We are acutely aware that businesses squarely need water, which they share with people, other businesses and communities. Inaction can only push us towards the path to ruin. Companies should make water conservation a top boardroom priority. And it can start with comprehending and articulating the exposure to water risks in direct operations and across supply chains. Some companies may muse that they are not directly in the path of water-related business risks because they do not consume copious amounts of water in their operations. They do so indirectly by



shopping water-intensive raw materials like agricultural commodities or energy sourced from fossil fuel power plants that need prodigious amounts of water for cooling. To significantly bring in changes in water consumption, we also need to investigate the supply chain.

Managing water provides an excellent opening for business to forge competitive advantages while securing the license to

operate and gains in reputation. By demonstrating sustainable behaviour, companies can attract millennials to choose their products whilst fostering relationships with the local communities. The rewards of being water positive far outweigh the investment it commands. It is high time that we take a wide-eye look into it. ■

*T Aswin is the Factory Director at Danone India.*





## Importance of Water Management in Urban Environments

*A study on Chennai's water usage and recommendations on sustainable water management*

**Water is a precious, non-substitutable resource that sustains life on our planet. And yet, its misuse and depletion are almost universal. Of the many factors that impact water availability and the cadence of water cycles, the most significant are water management, usage patterns and urban development. Water management, not just its sources but also storage, supply infrastructure and treatment is thus becoming increasingly important, especially in heavily urbanised environments across India.**

The severity of water challenges is rising globally. Considering the real estate industry, water is a critical resource from the product lifecycle perspective, be it at the construction stage (preparation of mortar, mixing of cement, concrete and curing work, etc.) or during the occupancy stage. Regular availability of good water is essential for occupants of residences. Water quality and availability in a rapidly urbanising India are at significant risk, making it imperative for us to use water judiciously.

Mahindra Lifespaces' water strategy for future readiness includes the development of mitigation measures across regions and businesses. Some of these strategies begin with implementation during the design stage and continue into monitoring consumption during construction and occupancy. These include rainwater harvesting, STPs, low-flow water fixtures, water recycling and reuse. At our integrated cities and industrial clusters, wastewater is treated via onsite STP. Last year, across projects, we



**Sunita Purushottam**

recycled and reused 11 lakh kilolitres of water in our industrial developments. Through our company's initiatives to

improve water quality, wastewater treatment and safe reuse of water, we have realised 10.34 m3 annual savings and Rs 1,854 revenue per kilolitre of water consumed.\*

Water-related interventions at Mahindra Lifespaces over the years have helped us realise over 248.2 million litres of water savings to date.

Moreover, recognising the urgency of the water situation across urban India, this World Environment Day 2021, the Mahindra-TERI Centre of Excellence (CoE) - a joint research initiative of Mahindra Lifespaces and The Energy and Resources Institute (TERI) that focuses on green building solutions customised to Indian climates - launched a report on the future of water availability and the impacts of various social and industrial factors on water usage across the Chennai Metropolitan Area. The report aims to create awareness of the present and future water challenges facing stakeholder communities across Chennai and recommends action to secure water sustainability in the city. With Chennai's water requirement expected to reach 2,236.5 MLD (million litres/day) by 2025 - from 2,074 MLD in 2019, the capacity enhancement of water treatment plants needs to be increased to 2348.3 MLD by 2025, along with many other critical measures to mitigate the imminent shortage.

No.	Sewage treatment plant	Designed capacity (MLD)	Actual flow (MLD)	Main treatment process <sup>10</sup>	Amount of water into water bodies after treatment (MLD)
1	Kodungaiyur - Zone I	80	214.86	Activated	187.35
2	Kodungaiyur - Zone II	80		Sludge Process	
3	Kodungaiyur - Zone I & II	110			
4	Koyambedu - Zone III	34	120.4	Activated	105
5	Koyambedu - Zone III	60		Sludge Process	
6	Koyambedu - Zone III	120			
7	Nesapakkam - Zone IV	23	99.3	Activated	99
8	Nesapakkam - Zone IV	40		Sludge Process	
9	Nesapakkam - Zone IV	54			
10	Perungudi - Zone V	54	74.46	Activated	95
11	Perungudi - Zone V	60		Sludge Process	
12	Alandur - Zone V	12	12.5		

Sewage Treatment Plants in Chennai Metropolitan Area

## Water Management and Scope

The study was conducted across the Chennai Metropolitan Area (CMA) under the jurisdiction of the Chennai Metropolitan Development Authority, including both urban and rural parts of CMA.

It points to the fact that water use and management are influenced by water governance. This refers to who gets what kind of water, when and how they get supply, etc. It also identifies those who have the right to water and related services and their benefits. It determines the equity and efficiency in water resource and

“Water-related interventions at Mahindra Lifespaces over the years have helped us realise over 248.2 million litres of water savings to date”

services allocation and distribution and balances water use between socio-economic activities and ecosystems.

There are potential risks in water management currently that indicate possible threats to the urban water cycle and the demand and supply of water within CMA.

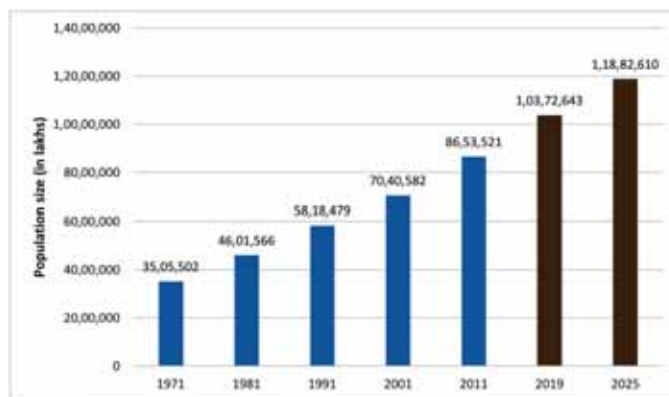
The issues, interconnected with each other on projections for the year 2025, starting from water availability and its allocation to capacities of water and sewage treatment plants, need to be addressed urgently.

## Land Management and Impact on Water

The built-up area in CMA has grown almost three times, from 211.2 sqm. in 1988 to 578.3 sqm. in 2017. The built-up area has spread out radially towards the West, with Chennai district as a nucleus. Between 1988 and 1997, the region saw a high rate of urban sprawl, and it continued to expand until 2006, with scattered settlements being converted to dense settlements. Up until 2017, the rise in the built-up area could be attributed to a large chunk of the population settling in CMA. It is estimated that if this urban growth trend continues, the built-up area will reach 708.3 km2 by 2025.

Other land types like wasteland and dump yards also saw a significant increase from 1988 to 2006. By 2017, the water bodies/wetland area had shrunk to almost half of its size in 1997 (from 117 km2 to 55 km2). CMA is likely to experience a continuous built-up expansion due to rapid economic development. The resulting population growth is expected to result in increased demand for housing and civic amenities like water supply.

CMA has witnessed a rapid increase in population since its formation in 1974. The population is estimated to reach 1,18,82,610 in 2025, considering the existing rate of decadal change in population (from 2001 to 2011).



Population increase in Chennai Metropolitan Area between 1970 - 2011 and estimated population change in 2019 and 2025



## Existing Water Bodies and Usage

Water bodies like ponds, lakes and rivers could continue to shrink due to encroachments, unauthorised constructions and poor disposal of municipal and industrial waste. The flood intensity during the monsoons is expected to increase in CMA due to the reduction in the catchment area, with shrinking water bodies and green cover and expansion in built-up land.

To fulfil the increasing demand for water in CMA, several sources are being tapped to source and distribute water to the region. CMA receives its water from four main sources: surface water, rainwater, seawater and groundwater. Of these four sources, ground aquifers have been the most important source of water supply to Chennai, although currently, surface water is the most used source.

To meet the various types of water demand across the city, the water stored in the reservoirs requires infrastructure for a safe and continuous supply to the end-user. To meet the minimum

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The report follows a unique, integrated, 'One Water' methodology that incorporates multiple aspects of water systems - such as stormwater, wastewater, and water supply networks - to recommend best practices for holistic urban water management

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water quality standards, water treatment plants are installed where the water tapped from the reservoirs is treated and then supplied to the city.

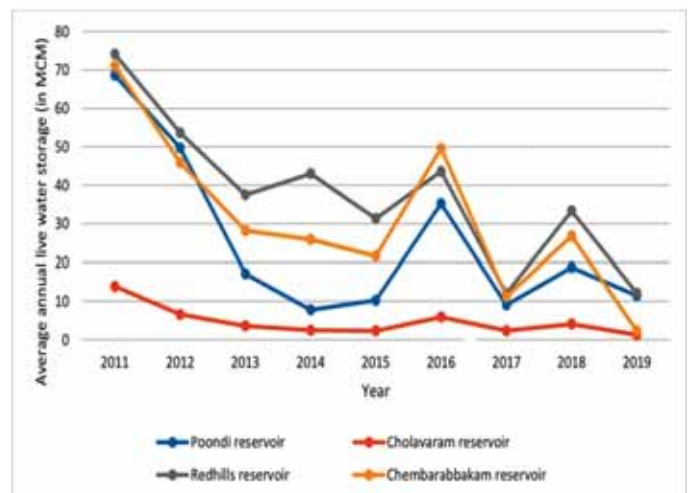
The infrastructure for transporting wastewater comprises 5200 km of sewer lines and 1894 km of open drains, mainly carrying domestic wastewater and stormwater. Open drains are mostly unlined, and wastewater flows under gravity towards the sink. The sewerage network comprises pipes of reinforced concrete cement (RCC) with diameters varying from 250 mm to 2500 mm. Currently, 98 per cent of Chennai's area has a sewerage network. Chennai has a total of 12 STPs spread over five zones.

## Natural and Human Impacts on Water Availability

The region is likely to experience a staggered rainfall pattern over the coming years due to the rapidly changing climate, thus making it difficult to predict rainfall intensity and period. This, along with decreasing groundwater holding capacity and rainwater mismanagement, could affect the water storage capacity in the reservoirs as well.



Water bodies serving Chennai Metropolitan Area



Average annual live water storage in reservoirs located in CMA from 2011 to 2019

Overexploitation of groundwater sources to meet the growing water demand has resulted in depleting water table of well fields located in CMA. If the built-up expansion is not controlled and water flow is not properly managed, groundwater levels and quality will continue to decline.

Sustainable water use in habitats is one of the key areas of research of The Mahindra-TERI Centre of Excellence (CoE), which aims to develop science-based solutions for India's built environment.



The report follows a unique, integrated, 'One Water' methodology that incorporates multiple aspects of water systems - such as stormwater, wastewater, and water supply networks - to recommend best practices for holistic urban water management.

Water conservation and management must be made a priority across all residential and industrial development projects in India. Current climate change and population growth trends indicate that by 2025, the inhabitants of Chennai could be faced with multiple water crises. Compounded by extreme weather events and developmental activities, it is projected to result in widespread flooding, pollution, and a shortage of potable water. This report on 'Water Sustainability Assessment of Chennai Metropolitan Area' aims to provide a way forward to overcome these challenges to sensitise all stakeholders, including citizens, on water sustainability.

### Key Report Findings:

- Considering the current urban growth trend in Chennai, the city's built-up area is estimated to increase to 708.3 km<sup>2</sup> in 2025, or thrice the area in 1997. At the same time, the city's water bodies are expected to shrink to 38.4 km<sup>2</sup> by 2025, or one-third of their coverage in 1997.
- The region is expected to experience an unpredictable rainfall pattern over the coming years due to changing climate, extreme El Nino conditions, and continuous warming of the Bay of Bengal off the Tamil Nadu coast, thus making it difficult to predict the rainfall intensity and period. This could also lead to fluctuations in the water storage capacity in the reservoirs throughout the year.
- Chennai faces a significant risk of pollution of its natural waterways. The quantity of wastewater generated in Chennai is estimated to increase to 1,789.2 MLD by 2025.

Year	2019	2025
STP capacity required	727 MLD	1878.6 MLD

S. No.	Water Treatment Plant	Capacity (MLD)
1	Kilpauk	270
2	Puzhal	300
3	Surapet	14
4	Chembarambakkam	530
5	Vadakuthu	180
Total		1294

Water Treatment Plants with their treatment capacities in CMA

### Key Report Recommendations for Sustainable Water Management in CMA:

- Propagation and adoption of water conservation practices such as rainwater harvesting, wastewater recycling and reuse, to meet the rising water demand due to rapid demographic changes.
- Developing policies and designing measures towards protecting the region's ecosystems to strengthen both natural and urban water flow systems.
- Identifying and filling up data gaps related to groundwater availability, extraction and use by conducting detailed surveys.
- Strengthening the water governance structure and administration; establishing a transparent and participatory mechanism through capacity building and training programmes.



Water is a common resource and of the commons. Understanding water cycles is critical to achieving a holistic solution to the water challenge. Conflicting stakeholder interests and the inability to de-risk through appropriate nature-based solutions have increasingly distanced the common man from water security. Continued undervaluation of this vital resource can lead to serious challenges across India. It is urgent and imperative to adopt a collaborative stakeholder engagement approach to manage interests and design solutions in the same watershed. ■

**Sunita Purushottam** is Head - Sustainability at Mahindra Lifespace Developers Limited.

\* From SDG Framework for Sustainability Report 2019-20





## Godrej & Boyce Announces 'The India Mangroves Coalition' with CII and WWF India

To strengthen the commitment of corporate India towards preserving vital coastal ecosystems and to mark the International Day for the Conservation of the Mangrove Ecosystem, Godrej & Boyce, the flagship company of the Godrej Group, announced the launch of the India Mangroves Coalition, in association with CII's Centre of Excellence for Sustainable Development (CII-CESD) and WWF India. This new initiative will drive collaboration across CII member companies and help identify new solutions for mangrove management and conservation through research and innovation.

Coastal forests like mangroves are emerging as a key solution to alleviate the problem of accelerating global warming and other adverse climate events like an increased storm and cyclonic activity across the globe that are impacting lives and livelihoods. Dubbed "Blue Carbon" systems for their greater ability to absorb carbon, mangrove forests have been proven to not only store up to five times as much carbon as terrestrial forests but also sequester or trap the carbon for much longer periods of time of up to thousands of years. Blue carbon systems like mangroves will have to play a bigger role in carbon absorption

if the world must meet its goal to limit global warming to 1.5 degrees by 2050.

The India Mangroves Coalition is the first of its kind industry-led platform under CII's India Business & Biodiversity Initiative (IBBI) that will support and propagate greater mangrove conservation and plantation across India's vast coastline through a multi-stakeholder approach, based on its importance as a Blue Carbon system.

Speaking on the launch of the Indian Mangroves Coalition, Jamshyd N Godrej, Chairman and Managing Director, Godrej & Boyce, said,



“Godrej & Boyce along with CII and WWF India have been working together for many years to promote conservation and biodiversity. With climate change posing a bigger threat every day, we strongly believe that this is the time to engage in insightful dialogue with all stakeholders to put greater focus on conserving and nurturing key Blue Carbon systems like mangrove forests. The India Mangroves Coalition will help build rapid awareness and sensitise people about the increasing importance of mangroves not only to realise our Paris Climate goals but also to continue to protect vulnerable coastal cities like Mumbai from bigger climatic threats.”

Seema Arora, Deputy Director-General, CII, said, “A competitive and sustainable industry must take a lead role in India's future development as well as play a key role in the emerging shape of the global economy. This will require the inclusion of nature in decision-making at all levels of business, society, and government. CII has partnered with organisations such as Godrej & Boyce and WWF India that are deeply entrenched in the conservation of such ecosystems. Together, they will play a key role in bringing together all the players through a synergetic and strong connect to drive Competitiveness, Growth, Sustainability and Technology for 'Building India for a New World'. As part of this moment, we are working in close consultation with businesses, experts, and key stakeholders to accelerate action towards creating a nature and climate positive footprint through the integration of mangrove Conservation. This also provides an opportunity for India to lead and contribute to the UN Decade of Ecosystem Restoration.”

Dr Ravi Singh, Director, WWF India, further stated, “With a country of such large coastal line, with the ability of quicker regeneration and proliferation capacity, we have not made enough efforts towards mangrove restoration. We need to take up targets like the

Restoration of Mangroves by 2030 and jointly work towards this. WWF being into conservation works of Sundarbans, has worked in past with Godrej and being a member of IBBI, believes this consortium will be an effective way to achieve the objective.

The India Mangroves Coalition aims to bring the latest scientific and technological developments to the fore by engaging with experts from government, academia and other organisations focused on climate change to provide insights and help members adopt leading-edge techniques to further mangrove conservation.

The India Mangroves Coalition was launched with an insight-gathering conclave chaired by Dr Ravindra Singh Director from the Indo-German Biodiversity Programme, GIZ, and included key stakeholders across the spectrum including Dr Virendra Tiwari, APPCF, Mangrove Cell Maharashtra, Ravi Agrawal, Additional Secretary, MoEF & CC, Dr Ravi Singh, Director, WWF India as well as Nyrika Holkar, Executive Director, Godrej & Boyce, Seema Arora, Deputy Director-General, CII CESD.

Among the key topics at the launch of the India Mangroves coalition discussed

included research and other insights on the importance of mangroves to meet climate goals as well as a holistic framework needed to seamlessly bring together a unique set of key stakeholders from across the business fraternity, central, state and local government experts, NGOs, researchers and citizens. This will help implement practical solutions by setting defined objectives, action plans, initiatives, and targets for mangrove research, on-site conservation, awareness, policy measures to build coastal resilience and integrate United Nations Decade on Ecosystem Restoration theme and to contribute to Sustainable Development Goals (SDG) commitment of India. Under the Indian Mangroves Coalition, G&B along with CII and WWF India will conduct a series of awareness-building sessions for members, as well as begin a process of engagement to gather new ideas for an integrated approach to support long-term mangrove conservation in India.

Godrej & Boyce's pioneering efforts to balance industrial growth alongside conservation of nature started in 1940 under the leadership of the late Sohrabji Godrej and Naoroji Godrej. The Soonabai Pirojsha Godrej Foundation was founded in 1985 to formalise these efforts towards the conservation of a





stretch of Mumbai's mangroves ecosystem from Vikhroli along the west bank of the Thane creek. The Soonabai Pirojsha Godrej Marine Ecology Centre was also founded in 1985 with eminent founder members like the late Dr Salim Ali, the renowned ornithologist, A.K. Ganguly, the renowned botanist, and Dr Homi Bhabha, the renowned scientist to focus further efforts on conservation of the surrounding marine ecosystem under the mangrove cover.

The mangroves protected by G&B and the Godrej foundation are India's first ISO 14001 certified forest in 1997. This certification has ensured time-bound, measurable performance indicators and targets for conservation initiatives. To ensure dedicated focus to the issues, Godrej & Boyce has established a dedicated Wetlands Management Services (WMS) organisation with skilled professionals and has been undertaking significant conservation and renewal initiatives with a three-pronged strategy of promoting academic research, driving conservation and building



awareness about the importance of these Blue Carbon systems. Working with multiple stakeholders, the WMS team has engaged with almost 60,000 individuals living in coastal areas in the last six years through on-site and off-site programmes using a dedicated mangrove mobile app, online webinars, storybooks, poster exhibitions and has released a mangrove quiz in Marathi on [www.mangroves.godrej.com](http://www.mangroves.godrej.com) in its

efforts to increase awareness through outreach in regional languages. The Soonabai Pirojsha Godrej Foundation has also planned and implemented additional mangrove plantations of approximately 80 acres at its southern border for the Municipal Corporation of Greater Mumbai. This was the first of its kind successful public-private partnership for large-scale mangrove plantations in India. ■

## Puri the First Indian City to Achieve Drink-From-Tap Quality Water

Puri has become the first city in India to achieve 24x7, safe drinking water from taps, as per Indian Quality Standards of IS 10500 from July 26, 2021. It is an initiative of the Odisha Government's *Sujal or Drink from Tap mission*, spearheaded by the Chief Minister – Naveen Patnaik. The transformative initiative will now benefit the city's 2.5 lakh local population and two crore tourists who visit the holy city annually. The provision of safe drinking water will further help prevent the usage of three crore plastic bottles annually eliminating 400 metric tonnes of plastic waste, further reducing the State's carbon footprint.

**SUJAL: Drink From Tap Mission in Puri**

Initiative to benefit over 2.5 lakh residents, 2 crore tourists

- Puri becomes 1st city in India to achieve city wide drink from tap quality water supply system with 100% metered household
- City joins the league of international cities like London, New York & Singapore in quality drinking water supply
- Drinking Water Fountains at public places to discourage use of plastic water bottles, to eliminate 400 MT of plastic waste annually
- Drink From Tap Mission to cover 16 towns & benefit 40 lakh population across Odisha

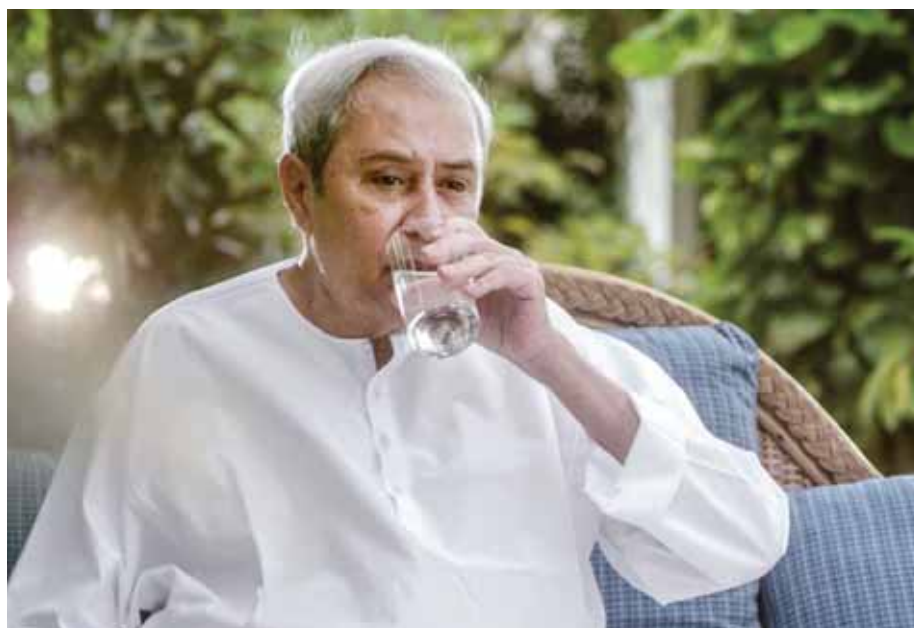
CMO Odisha @CMO\_Odisha



The state-of-the-art technology, which allows people to drink directly from the tap, has become a reality in India for the first time. Puri now has 100 per cent metered household water connections with safe drinking water round-the-clock joining the league of global cities like London, Singapore and New York.

The Hon'ble CM of Odisha inaugurated *Sujal - Drink from Tap Mission* – in Puri through video conferencing on July 26. Dedicating the 24×7 drink-from-tap-

quality water supply system to the glory of Jagannath and the people of Puri, he said, “Providing drink-from-tap quality water 24×7 to every household is a transformative project, and this is a step in the direction of our vision in making Puri a world-class heritage city. Puri residents, tourists and pilgrims alike can now drink water from taps across the city – be it at home or across the newly-established water fountains. It has been my dream to provide piped drinking water to every household in Odisha, and



this is now turning a reality.”

Pilgrims who visit the city will further have access to 120 drinking water fountains set up by the State all along the Grand Trunk Road and other Puri hotspots that are similar to the water fountains at airports. Apart from Puri, the mission is also on its way to success in 16 other cities across Odisha covering 40 lakh households. The initiative, with its mission of 'Water for All', is set to provide safe water to every household in Odisha across all 114 urban local bodies with an inclusive mandate covering all slum households across the State.

The water quality surveillance has been strengthened with state-of-the-art laboratories, labs on wheels, chlorine analysers with automatic chlorine dozers, water quality sensors, and doorstep quality surveillance. Underprivileged women from Self Help Groups, part of Odisha's acclaimed Mission Shakti, designated as Jal Saathis, have been hired as a key community link between the public and the government on a performance-based and incentive-linked programme that furthers Odisha's long-standing commitment to women empowerment and inclusion. Jal Saathis have been trained for meter reading, revenue collection, conducting field water quality tests and sensitising people to having metered connections. This has ensured 100 per cent metered household connections in Puri.

Returning migrants have also been considered in this mission, and plumbers are being trained for installation and maintenance work, including checking for leakages and wastage of water.

This Smart Water Management Technology implemented in the State to monitor uninterrupted and quality water supply across Puri has also won national level recognitions – the Award of Excellence at the Second National Water and Sanitation Innovation Summit, and the Award of Excellence at the 18th CSI SIG e-Governance Awards. ■





## CRISIL - Healing, One Tree at a Time

### A Decade for Action

The world, including India, has entered the final lap towards achieving the United Nations Sustainable Development Goals (UN SDGs) by 2030. But this Decade for Action has lost its initial thrust as governments and industries have been forced to realign priorities and actions, a shift wrought by a raging global COVID-19 pandemic.

Or so it seems. But the pandemic has also sharpened lessons in resilience like never before. It has taught us not to take this life and its elements for granted – something as basic as the air we breathe.

Wangari Maathai, the 2004 Nobel Peace Prize laureate said, “What a friend we have in a tree. The tree is the symbol of hope, self-improvement and what people can do for themselves.”

There is no bigger symbol of hope, resilience and renewal than Mother Nature herself.

According to the Intergovernmental Panel on Climate Change (IPCC), this decade is critical to saving the planet from the worst effects of climate change. According to NITI Aayog's SDG India Index 2.0<sup>1</sup>, the country's progress on SDGs is crucial for the world as we are home to about one-sixth of the global



**Maya Vengurlekar**

population. Hence, it is high time to get our act together.

Schedule VII of Section 135<sup>2</sup>, Companies

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Our initiatives have now expanded to greening of the hills in Pune – Hanuman Tedki and Chatusringi Hills, and arid lands such as the Tetvali area of Rabale. The greening process also led to a partnership with the Indian Army within the Aundh area of Pune and around the Lakeside in Khadakwasla reservoir

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Act, 1956, refers to Corporate Social Responsibility (CSR) rules that focus on ensuring environmental sustainability, conservation of natural resources and maintaining the quality of soil, air and water. It mandates a role for Indian corporates in environment conservation by promoting a continued engagement with nature.

**Since 2015, CRISIL Foundation, the CSR arm of the company, has shown robust commitment to tackle two key environmental challenges:**

1. Environmental concerns due to deforestation and rapid urban growth
2. Marine pollution due to plastic and non-biodegradable waste

CRISIL Re is a key initiative to channelise the energy of CRISILites



*Mumbai's first urban forest developed in six months through the 'Miyawaki' approach of native plantations. CRISIL Re supported Green Yatra (the NGO partner) and this initiative by planting 2000 trees.*

towards the company's environmental conservation efforts.

So far, we have planted over 75,000+ trees and 160+ native species of trees across Mumbai, Pune, Gurgaon, Chennai, Hyderabad, Kolkata and Bengaluru. These trees are expected to offset 1.5 million tonnes of carbon dioxide every year once they are fully matured. Over 10,000 trees were geo-tagged in 2018, with plans to geo-tag another 40,000 by 2021-end. (depending on the pandemic situation).

As the adage goes, Rome was not built in a day. Despite limited resources, our focus on long-term impact and sustainability is yielding dividends as the initiative grew organically over five years. This 10-minute read hopes to

provide insights to the corporate world on devising and implementing an effective afforestation strategy.

### **CRISIL Re, A Unique Environment Conservation Initiative**

Launched on February 16, 2015, CRISIL Re is a flagship initiative of the CRISIL Foundation to conserve the environment by actively supporting tree planting and beach cleaning drives.

The brand identity, Re, is a prefix. Each CRISILite is empowered to focus on the aspect they want to change – Re-build, Re-imagine, Re-create, Re-construct, Re-charge and so on. As the CRISIL Re manifesto puts it, “Change what you don't like.”



*Long-term visible change through CRISIL's interventions in Bhiwandi, Mumbai*





CRISIL Re collaborates with NGOs on various environmental initiatives in cities where our offices are located, viz., Mumbai, Pune, Chennai, Delhi, Gurugram, Bengaluru, Ahmedabad, Hyderabad and Kolkata.

### How It All Started

CRISIL Re initially focused mainly on greening of ecosystems and urban pockets around the cities where our offices were located. The idea was to promote urban afforestation – in parks, main roads and office spaces. However, there were numerous administrative hassles – especially getting permissions and approvals from local municipal corporations, forest department, etc.

Subsequently, we decided to focus on immediate city limits. The initiative started at a small plantation site in Bhiwandi, Mumbai, with a scope to plant 6,000 trees. Since the site was close to our



Mumbai office, our employees were able to participate in the drive. We then moved from Mumbai to Gurgaon, where we identified a stretch of land, which is now the most popular site for its ecological restoration - the Aravali Biodiversity Park.

Our initiatives have now expanded to greening of the hills in Pune – Hanuman Tedki and Chatushringi Hills, and arid lands such as the Tetvali area of Rabale. The greening process also led to a partnership with the Indian Army within the Aundh area of Pune and around the Lakeside in Khadakwasla reservoir.

### Return of the Natives

By 2018, we were convinced that planting both native and fruit bearing trees, along with trees that provide timber (to promote forest-based livelihood activities for the local communities), was the way to go. Our geo-tagging exercise undertaken in the same year attested to the fact that we stuck to this focus.

The right selection of native forest species has helped revive local forest vegetation - these sites are now teeming with biodiversity. Proper handling of trees, soil management, assessing planting hole depth, and making arrangements for ensuring tree firmness, have all led to this success.

In 2019, we adopted 'Miyawaki' – a Japanese method of afforestation to create urban forests using native varieties. We are helping to develop dense native urban forests in the next 10-20 years in Mumbai and Pune.

### Survival of the Fittest – Post-plantation Efforts

Post-plantation monitoring and oversight are key to track sustenance, survival of the trees and ensure long-term sustainability of the initiative.







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As native trees not only provide environmental benefits but also preserve and promote flora and fauna in the catchment areas, we made them central to our afforestation agenda from that point on. Moreover, the survival rate of our tree plantations across cities and semi urban locations was found to be 85-90 per cent.

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We initiated the tree geo-tagging exercise in 2018 to monitor the mortality rate, species and yields of trees across locations. This comprehensive exercise in



Initially, we started with a three-year maintenance exercise. However, we learnt that native species do not need focused maintenance of more than a year due to their ruggedness. Hence, we recommend an ideal maintenance period of one to three years depending on the species, location, and nature of natural resources such as soil, water, etc.

Maintenance activities should include setting up irrigation lines to enable water supply, constant watering of planted saplings, digging of the soil for mulching to lock in moisture, replanting to compensate for dead saplings (if any), as well as cutting grass and digging trenches to prevent forest fires.

Our employees are involved in post-plantation activities such as tree

maintenance, mulching, and de-weeding on a regular basis to ensure steady growth. As our focus on tree plantation intensified, we have adopted a pragmatic approach towards maintenance and upkeep of all plantation sites.

Thus, our afforestation agenda, closely tied to the UN SDG 15 (Improving Life on Land), is being implemented on a large scale across multiple sites and cites.

### Geo-tagging – Monitoring Survival and Diversity

A tree audit through a third party is crucial to understand how afforestation techniques are aligned with the company's sustainability goals and global priorities.







collaboration with a national-level think-tank based out of Mumbai audited over 18,000 trees planted since 2015 across India.

The exercise revealed that we had adhered to its return to the natives approach: we had planted 76 per cent native and 24 per cent non-native species.

As native trees not only provide environmental benefits but also preserve and promote flora and fauna in the catchment areas, we made them central to our afforestation agenda from that point on. Moreover, the survival rate of our tree plantations across cities and semi urban locations was found to be 85-90 per cent. This not only reaffirmed and validated the importance of planting native species, but also that of site-specific maintenance and post-plantation initiatives.

### **Achieving Economies of Scale – Effective Management is Key**

It is crucial that the economics of these efforts work in the long run. For this, it is essential to bring down the unit cost of each sapling through a detailed analysis of the cost structure, identification of right plantation sites

and selection of the right partners.

We launch all our environment conservation initiatives in collaboration with partner-NGOs led by individuals who are highly passionate about the cause in each city. This also enabled us to select the right locations to target the maximum impact.



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With the growing relevance of the environment, social and governance agenda and imminent threats such as global warming and pollution, focused interventions to preserve nature and biodiversity and a robust commitment to create green, carbon-neutral economies are the need of the hour

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For tree plantation initiatives, we offer grants to partner NGOs to cover costs of pre-plantation, plantation and post-plantation activities. Regular due-diligence and tracking of these funded initiatives enable us to monitor plant growth, mortality and maintenance. A maintenance management system is also essential to make NGO partners accountable for sustaining plantation sites over a longer period.

Through concerted efforts over 2019 and 2020, we have lowered the unit costs of plantations by 50 per cent, thereby doubling the plantation count over a one-year period.

### **Driving Social Consciousness Among Employees**

We strive to build a strong environment conservation agenda by involving employees in various activities associated with tree plantation. All our conservation efforts are designed near our premises so that our employees can be directly involved in driving the intended objectives.

This conscious choice, of not outsourcing environment conservation, but involving our own employees and making it easier for them to participate,

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With the growing relevance of the environment, social and governance agenda and imminent threats such as global warming and pollution, focused interventions to preserve nature and biodiversity and a robust commitment to create green, carbon-neutral economies are the need of the hour

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has not just been uplifting at the individual level, but helped drive a larger culture of social responsibility and consciousness within our company.

### Miles to Go Before we Sleep - Exploring the Water World



Over the past six years, our data-driven and analytical approach has enabled us to monitor, track and measure the outcomes of our environment conservation efforts. As we continue to focus on urban afforestation and planting of native trees, we are setting our sights on improving life below water (UN SDG 14) over the next few years.

With the growing relevance of the environment, social and governance agenda and imminent threats such as global warming



and pollution, focused interventions to preserve nature and biodiversity and a robust commitment to create green, carbon-neutral economies are the need of the hour.

An inherent focus on people and planet, along with profits, will be the key tenet to build a sustainable India and a resilient global economy. ■

*Maya Vengurlekar is the Chief Operating Officer of CRISIL Foundation, the CSR arm of CRISIL Ltd.*

<sup>1</sup>[https://niti.gov.in/sites/default/files/SDG-India-Index-2.0\\_27-Dec.pdf](https://niti.gov.in/sites/default/files/SDG-India-Index-2.0_27-Dec.pdf)

<sup>2</sup><http://ebook.mca.gov.in/Actpagedisplay.aspx?PAGENAME=17923>





## Toyota – Creating a Society in Harmony with Nature

**Our relationship with nature defines the future of our existence. Over the years, we at Toyota Kirloskar Motor (TKM) have consciously transformed the core of our business spirit from a carmaker into a mobility company by applying the values of sustainable business practice. Our commitment towards a sustainable future outlines our endeavours towards natural resource management and safeguarding the environment. Our interventions also thrive on community awareness, involvement, and ownership, the seeds of which are sown in our holistic engagement model.**

We have given utmost importance to the environment. All our initiatives are designed towards lowering our environmental impact and achieving the ultimate goal of living in harmony with nature.

With the threat before us, all our initiatives are not enough. We realise that to bring lasting change, we need to make a paradigm shift in the way we think and live, and so in 2015, we announced our most ambitious project, the Toyota Environmental Challenge 2050 which aims to establish a society in harmony with nature



**Raju B Ketkale**

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Water scarcity is one of the most critical issues of the 21st century. Considering this fact and in line with the philosophy of Zero Liquid Discharge (ZLD), water conservation has become our utmost priority. Multiple efforts were taken to address the environmental challenge of minimising and optimising water consumption

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The holistic vision aims to achieve Net ZERO CO<sub>2</sub> from our products across life cycle and manufacturing. Further, the next set of challenges aims towards creating a positive impact on the environment by water conservation, establishing a recycling-based society, and living in harmony with nature.

### Our Contribution Towards Environment Sustainability

In line with Toyota Environmental Challenge 2050, we at TKM have achieved significant progress.



Globally, we have been continuously working on developing sustainable mobility solutions and we introduced hybrid electric vehicles and hydrogen-based fuel cell electric vehicles (Mirai). In India, we have introduced hybrid electric vehicles (Camry Hybrid, Lexus, etc). The Camry Hybrid electric vehicle fuel efficiency is 48 per cent better than the conventional IC engine.

Being a leader in environmental stewardship, we started our journey towards greening our energy sources and has made substantial step-up over the years. In FY 2013, our renewable energy percentage was negligible. However, in FY 2014, we gradually increased green energy procurement and initiated activities with renewable energy plants to meet the energy requirements. We harness solar energy and purchasing renewable energy. As a result, during FY 2020-21, we could ensure 94 per cent of our total energy requirement at our plant was met through renewable sources. Cumulatively since 2014, we could reduce 241,000 tons of CO<sub>2</sub> through renewable energy usage.

Water scarcity is one of the most critical issues of the 21st century. Considering this fact and in line with the philosophy of Zero Liquid Discharge (ZLD), water conservation has become our utmost priority. Multiple efforts were taken to address the environmental challenge of minimising and optimising water consumption.

We have been at the forefront of water reduction since our inception by adopting recycling, rainwater harvesting, and promoting kaizen – the philosophy of continuous improvement – to reduce specific water consumption. Through these initiatives, we have



reduced our freshwater utilisation by 90 per cent for manufacturing. During FY 2020-21, we could reduce 142,982 m3 of freshwater.

Our company established effective value (waste) management practices at our plants through which we have enhanced the recyclability of waste to 96 per cent. These initiatives also helped us in achieving good economic benefits. We are now aiming at promoting these initiatives across our value chain. Moving further, we intend to implement the concept of CRADLE to CRADLE, where waste material is put back to the manufacturing process, which thus supports the principle of a circular economy.

The sixth challenge is “Establishing a Future Society in Harmony with Nature”. We have adopted the best technologies in the globe concerning the environment by following all good practices within the boundary of the company.

We firmly believe that caring for the environment and operating in a responsible, sustainable manner is at the core of creating a sustainable business. Furthermore, companies must be actively involved in partnering with the community and governments to solve socially relevant issues. The participation of the private sector can lead to more innovation, efficiency, and scale of impact. More importantly, we firmly believe that mutual respect and collaboration is the key to enable society with a significantly improved quality of life.



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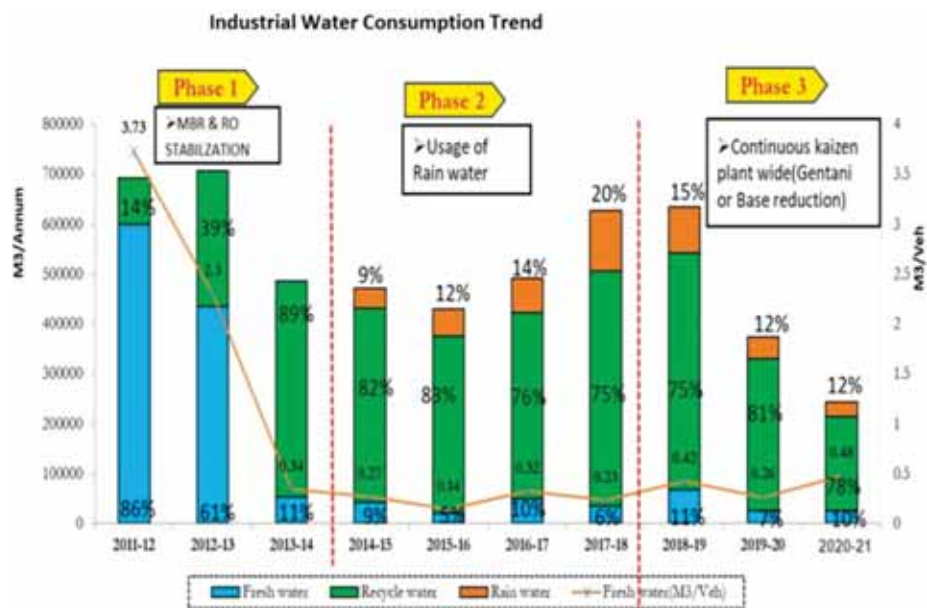
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## Water Sustainability

**Water Conservation:** We prioritise water conservation and wastewater treatment. We continue our multiple efforts to deal with water scarcity to create a positive impact on the community.

We strive to reduce water consumption year on year by encouraging robust daily water management practices in both the domestic and industrial sectors of our



plant. In doing so, we can consistently reduce water.

- We have constructed rainwater harvesting systems with a capacity of 51,000m3
- The average groundwater level at TKM is 45ft
- We have installed RO and MBR technologies for recycling wastewater
- We have reduced our freshwater consumption by 90 per cent
- We are a Zero Liquid Discharge company

**Lake Rejuvenation:** As a part of water conservation and providing safe drinking water, we adopted a lake (Abbanakuppe) in Bangalore Rural, to rejuvenate the natural resource. This project is planned to run in collaboration with the local community to ensure the sustainability of

the lake. Five neighbouring villages with a population of 8,000 are currently benefitting from the initiative. The water table has risen with an improvement in the water quality in the region, which has further boosted the agriculture in the vicinity and shown a positive impact on the flora and fauna.

## Sanitation - Health and Hygiene

### Water Purification Units

Since the availability of clean drinking water remains a challenge and many villagers suffer from water-borne diseases, we took up this programme of installing community-based water purification units. Securing the active participation of the local community has been the key to ensure the sustenance of the intervention. So far, we have installed 43 water units benefitting 267 villages and more than 280,000 villagers.



Abbanakuppe Lake



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### ABCD Programme (ABCD – A Behavioural Change Demonstration)

Project ABCD was conceived not only with the aim of achieving 100 per cent school sanitation by increasing awareness, but it also promotes dignity and privacy for the girl child by upgrading existing unhygienic school toilets to usable conditions and to promote learning and retention among school children, teachers as well as community members.

- 58,855 students covered from 1004 government schools from 2015-16 to 2019-20
- 31,604 girl students benefitted
- 33 incinerators installed in



### Fighting for Safety and Dignity

Twelve-year-old Sinchana is one of the many students struggling for good hygiene facilities. She lives with her grandmother and sister as her mother is away working. She aspires to be a doctor and help sick people in the community. And there are many within her community who are suffering from various ailments; one of the main reasons being sanitation.

Rural areas face multiple challenges, and one of them is the glaring lack of sanitation facilities at home. This is mainly due to socio-cultural taboos that have been handed down through generations. They consider having a toilet at home as religiously impure, and therefore tarnishes the sanctity of the home.

Sinchana is at that stage where awareness about her dignity and safety are as vital as her education. She longed for that day when her school and her family could afford to have a toilet. A big change finally came to her school. As a part of the project that was implemented in Bidadi, Ramanagara (near Bangalore), Toyota Kirloskar Motor worked with an NGO to start the ABCD Programme. The initiative helps schools to upgrade existing toilets or construct new ones when there is none. Sinchana's school was going to get a new toilet.

The big day finally arrived, and it will be etched in Sinchana's memory, when she



*Sinchana and Deekshita*

and her fellow students were able to utilise the toilet. The students were also taught how to use the toilet and to follow healthy hygiene sanitation practices.

The students who joined the ABCD Programme took action to initiate the construction of sanitation facilities in their homes. Deekshita, who is a 10-year-old girl, started a hunger strike, while other children joined her. Sinchana helped her lead the movement. They persuaded their parents, other villagers, and the local government to provide better sanitation facilities.

Sinchana's joy knew no bounds when her family decided to construct a toilet at home. She expressed her relief about how she and her sister will now be safer, and free from shame.

These young children are indeed on a path that will lead to a better future.

- government schools
- 13,518 household toilets constructed with the child-to-community approach
- 890 school toilets in 293 schools constructed across Karnataka, Uttar



- Pradesh and Bihar
- Seven public sanitation units constructed in Haliyala, Dandeli, Joida and Ramanagara in Uttara Kannada District of Karnataka





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Our commitment towards a sustainable future outlines our endeavours towards natural resource management and safeguarding the environment.

Our interventions thrive on community awareness, involvement and ownership, the seeds of which are sown in our holistic engagement model

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## Environment

Our commitment towards a sustainable future outlines our endeavours towards natural resource management and safeguarding the environment. Our interventions thrive on community awareness, involvement and ownership, the seeds of which are sown in our holistic engagement model.

## Ecozone

We also consider the efforts we make to conserve the earth's complex and diverse ecosystem equally important. Therefore, to realise the vision of Environmental Challenge 2050, we established EcoZone, a state-of-the-art experiential environmental learning centre spread across 25 acres of land inside our Bidadi



Plant (Karnataka), in 2017-18. Ecozone is a unique concept having 17 educational theme parks designed to create a sense of consciousness and participation among children and other stakeholders.

Ecozone is an ambitious project with a distinctive concept that takes children on a learning journey beyond the confines of their classrooms. We aim to connect them with nature, promote environmental awareness, get them to observe, learn concepts and relate them with experiences amidst nature. This helps in

inculcating healthy behaviour towards environmental conservation. A visit to the park can help them learn to save water and energy and be good recyclers, making them responsible citizens.

What is also outstanding is the fact Ecozone has four types of forests, wetland ecosystem, grasslands, biodiversity pavilion, pollination meadow, rainwater harvesting ponds, orchards, medicinal gardens, and sacred groves. It currently consists of about 65,000 plants spanning across more than 650 plant species. Our recent biodiversity survey reveals that EcoZone caters as a habitat to about 198 faunal species that includes birds, insects, butterflies, reptiles and a few mammals.

Thus far, 12,675 students and 1,000 schoolteachers have been a part of this training at the Ecozone. We intend to expand our reach by training 10,000 students per annum and utilise this learning centre to further connect with various stakeholders such as suppliers,







dealers, employees and their families, government officials, NGOs and other corporates, and work towards building an eco-sustainable future.

### Highlights

**Toyota Plaza:** It showcases our efforts towards zero carbon or green mobility, including hybrids, plug-in hybrids, electric, and fuel cell vehicles.



**Underground Ecology:** It is a newly built theme park that focuses on the importance of soil and life below the land. The detailed



structures of earthworms, pangolin, honey badger, red harvester ants, subterranean termites, dung beetles, and cicadas are carefully moulded on the walls for a fascinating visual experience.

**Value-theme Park:** The park sensitise visitors to the 5Rs - Refuse, Reduce, Reuse, Recycle, Regenerate. It therefore stresses that "Waste is nothing but the resources we are not harvesting".

**Education Building:** Based on the concept of 'Native Earth Building', this building is known for its sustainable architecture, natural lighting, and proper air circulation.



**Timeline Walk:** An outdoor learning area with a combination of different stones and paintings, Timeline Walk is the highlight of Ecozone. It takes the visitors through the journey of Earth's formation, and the emergence of all organisms on earth, including human beings.







**Climate Change Theme Park:** This theme park, situated at the highest point of Ecozone, throws light upon how, because of our activities, the earth is facing climate change, and what everybody can do individually to lower their impact on the environment.

### Feedback

**Manushree, Std IX, GHS Hebbakodi:** “This is my second visit to Ecozone, yet it feels like a new experience. I have not seen anything like this. They taught us about global warming and the greenhouse effect. Thank you for teaching us. Please conduct more sessions like this.”

**Bhoomika, Std IX, GHS Sannahalli:** “We have seen many plants in our villages, but we never knew their benefits. The trainers here taught us very well about medicinal plants. We also learnt about wet and dry waste, their segregation. We learnt not to waste paper and avoid plastic. We have benefitted greatly by this visit.”

**A teacher from Ramanagara Taluk:** “They have taught us about different forests, plants, including medicinal ones, and their benefits. Our children learnt how to save the environment. They also covered the topics of water and waste management. Students got hands-on experience in everything. We also think

we can implement most of the measures at our schools. This visit was extremely beneficial for everyone.”

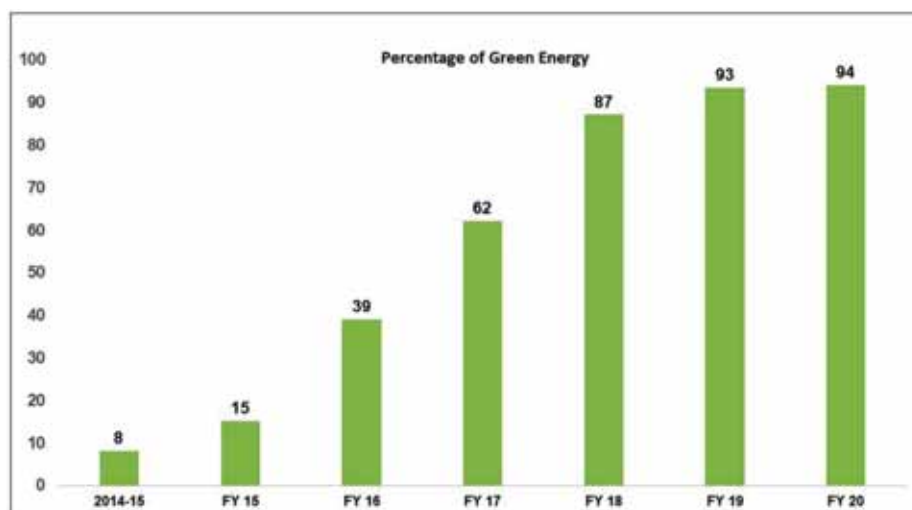
### Clean Energy

We have been progressively and rapidly shifting from non-renewable to renewable sources of energy across our business operations, with one of the main focuses being electricity consumption. To aid our journey towards carbon-neutral manufacturing, we collaborated with various stakeholders to identify the aspects in our production process that needed to reduce CO<sub>2</sub> emissions.

- 94.3 per cent of electricity sourced from renewable sources, resulting in an offset of 2,41,000 tons of CO<sub>2</sub> (cum)
- Renewable energy used: 272.8 Mil units

Over the years, through our sustainable and eco-friendly initiatives, we are moving towards achieving our 2050 Environmental Challenges of Carbon Neutrality and Net Positive impact on the environment. With the support of all our stakeholders and business partners, we intend to build a future society in harmony with nature. ■

***Raju B Ketkale** is the Deputy Managing Director at Toyota Kirloskar Motor.*





## An Effective Clean Plastic Recycling and Segregation Can Help Minimise Pollution

Plastic is one of the most amazing inventions by man. It was developed a little over a century ago. It has helped make the modern world possible as humans have come to depend on it in all spheres of life. Its inherent versatility is a huge advantage as it can be tailored to meet specific needs. Combined with its easy availability, affordability and longevity, it has led to an exponential rise in its use and consumption over the years. Plastic is hailed as a scientific wonder. Now that is one side of the story. The other is the grave issue of pollution. Every day we come across visuals that showcase the malignant nature of plastic and how it is harming our environment.



**Anjana Ghosh**

Plastic pollution is a massive crisis faced by people across the globe. According to UNEP, plastic waste generation has tripled in the last two decades, along with a rise in plastic production. Today, almost 300 million tonnes of plastic waste is produced every year – this is equivalent to the weight of the entire human population. However, the bigger issue is that the plastic that is used and discarded ends up in the environment.



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India's plastic pollution is a formidable challenge. The biggest issue that the country faces with plastic waste management is absolute ignorance among the general public about the appropriate methods of segregation, disposing and recycling. If India aspires to manage waste to its desired levels, then we have to educate people, create awareness that plastic is not waste; it is valuable

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Plastic makes up for the largest contributors to ocean pollution as it is carried into the ocean through rivers that carry plastic waste from inland. What makes plastic pollution an even bigger issue is that due to its durability and resistance to degradation, it becomes difficult or rather impossible to break it down through the natural process of degradation. Although plastic does not degrade, it breaks down into smaller and smaller pieces. These small pieces, or microplastics, enter our food chain through water, farm animals or fish. In major cities, water logging is one of the biggest issues, and plastic waste is a major contributor to it. Used plastic bags, plastic cutlery, plastic bottles and packaging clog the drainage because they are not disposed of properly. The clogged sewers become breeding grounds for mosquitoes and pests.

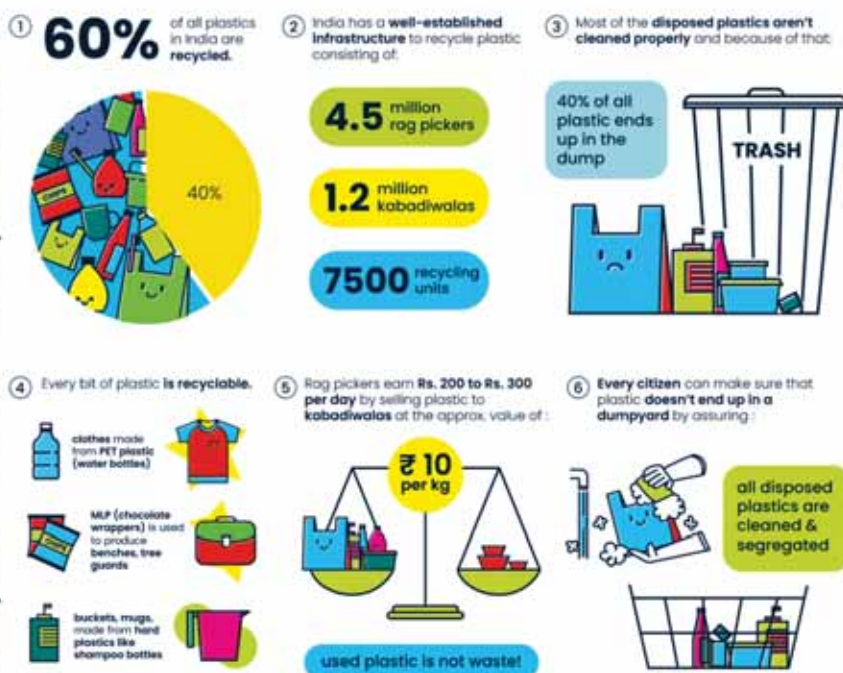
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valuable. According to a 2019-20 report by the Central Pollution Control Board (CPCB), which collates data from 60 major cities in India, the country generates around 26,000 tonnes of plastic waste a day, of which, 60 per cent is recycled. Even developed countries like Germany recycle only 56 per cent of their plastics. But the current methodology of scavenging plastic from roadside litter and dump yards makes it impossible to recycle 100 per cent of plastic. The

remaining plastic - 40 per cent - ends up in landfills, littered on the streets, water bodies, etc. Close to 80 per cent of dry waste generated daily is plastic. If this is properly managed, then the rest is not difficult at all. Not cleaning and segregating plastic at the source leads to a major plastic crisis which is not just prevalent in India but across the globe. There is an urgent need to resolve this crisis through methods that are sustainable and effective.

did you know? did you know?

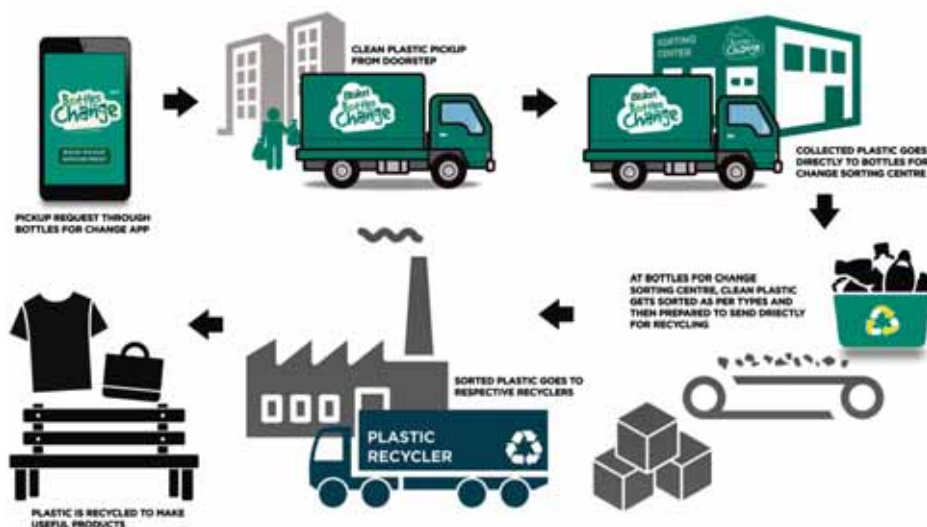


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As an industry leader and India's most trusted brand of bottled water, we at Bisleri, have been actively working towards the cause of a cleaner and greener environment. We are spreading awareness about the importance of plastic recycling through our 'Bottles for Change' initiative. This initiative aims at educating and changing the behaviour of citizens on efficient disposal by cleaning the plastic after use, segregating and sending it for recycling

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Thinking of plastic as waste and banning its use is not the solution to the problem because plastic and its products are an integral part of our daily lives. This makes it critical for us to think of the best solution to the problem of plastic pollution, which is recycling plastic. About 60 per cent of plastic is recycled, but the method in which it is done is wrong and filthy. There is a need to make simple changes in our daily lives. It starts with our homes. People can segregate their used plastic and clean it. This used plastic is then handed to their janitors or housekeeping team separately who then send them for recycling.



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the plastic after use, segregating and sending it for recycling. After the plastic is sent to recyclers, the process includes cleaning the plastic, cutting it into flakes and then melting it at high temperature for moulding it into desirable use. The idea behind the initiative was to practice what we preach, that all types of plastics post its use are not waste. They are



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Our project aims to bring about a habitual change in society to enable people to clean the plastic, segregate it from their waste and send it for recycling. We believe that society must stop treating plastic as waste and find solutions to dispose of it responsibly

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valuable. Where old newspaper fetches Rs 6 to Rs 8 per kg, single-use PET bottles fetch a value of INR 15 per kg post use.

Bottles For Change also helps green agents (rag pickers) to earn more because the plastic is clean. They earn Rs. 350 to 400/- as compared to around Rs. 200/- per day by scavenging plastic from roadside litter and dump yards. The Kabadiwala and the Recycler all make more money. India has 4.5 million rag pickers and 1.5 million kabadiwalas or scrap dealers who



are engaged in scavenging plastic for recycling. This initiative also provides them with hygienic working conditions, a more dignified life, and support for educating their children through our NGO partners.

Since its inception, we have conducted over 600 plastic recycling awareness events and workshops in corporate

offices, housing societies, schools and colleges. The programme is active in seven cities with over 6,00,000 citizens, 800 housing societies, 500 corporates, 500 hotels, 400 colleges and 3,00,000 students participating. It has helped recycle more than 6,500 tonnes of plastic.

As a part of this effort, we also made uniforms for the sales team from used PET bottles. Across India, 5,000 employees are presently wearing these shirts, upholding the vision of sustainability.





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We have touched over six lakh individuals, 800 housing societies, 400 schools and colleges, 500 hotels and restaurants, 500 corporates, and 600 awareness sessions. Our initiative has also created a channel and opportunity for plastic agents to collect used but clean plastic (hard and soft) through various stakeholders. It also aims to drive home the message of social change and help empower green plastic agents

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Taking a step further, on World Environment Day, we inaugurated India's first clean plastic segregation and collection centre in Marol, Mumbai. The interiors of the space have been created using 1,50,000 MLP (Multi-layer plastic) recycled bags (biscuits, chips and chocolate wrappers) as partitions. For

100 sq. ft. area, 100 kgs of recycled hard plastic blocks (hard plastic like juice container, food container, toys, shampoo and conditioner bottles, etc.) have been used to build the entrance ramp, which is strong enough and has the load-bearing capacity of up to 30 tonnes of vehicles. This Plant can process and segregate 25 tons of plastic per month, which means 300 tons of plastic per year can be recycled if proper waste management methods are followed.

This revolutionary facility also serves as a destination to educate citizens on the importance of plastic segregation and recycling. The Centre displays information about habitual change, various recycling processes and also exhibits a range of products that can be made using recycled plastic. Aesthetics are not left behind here. The Plant also houses a conveyor belt with a bailing machine to process the plastic before it is sent for recycling. Most importantly, it also ensures clean surroundings and hygienic working conditions for green plastic agents.

Our project aims to bring about a habitual change in society to enable people to clean the plastic, segregate it from their waste and send it for recycling. We believe that society must stop treating plastic as waste and find solutions to dispose of it responsibly.

Our multi-city awareness drive spans citizens, corporates and institutions. We are actively working with Mumbai Municipal Corporation, Panvel Municipal Corporation, Thane Municipal Corporation, Navi Mumbai Municipal





Corporation and Vasai Virar Municipal Corporation, South Delhi Municipal Corporation, East Delhi Municipal Corporation and North Delhi Municipal Corporation. In Mumbai, we have worked with corporates such as Indian Oil, Western Railways, NSS Wing of Mumbai University, Bombay Stock Exchange, Godrej, JP Morgan, Tata Consultancy Services, amongst others. Currently, in Chennai, we are working with Power Grid Corporation of India, Sundaram Medical Foundation, amongst others.



As a part of Swachha Sarvekshan Abhiyan, Delhi has adopted plastic recycling and waste management education through the various municipal corporations in South, East and North Delhi (SDMC, EDMC and NDMC). The authorities have been an active part of our initiative, which is a testament to our efforts. We hope that this will encourage local authorities in other cities as well. Municipal authorities in Mumbai, Thane and Navi Mumbai, who have been a part of Bottles for Change for over two years now have observed positive changes and a gradual perception shift in terms of plastic segregation and disposal.



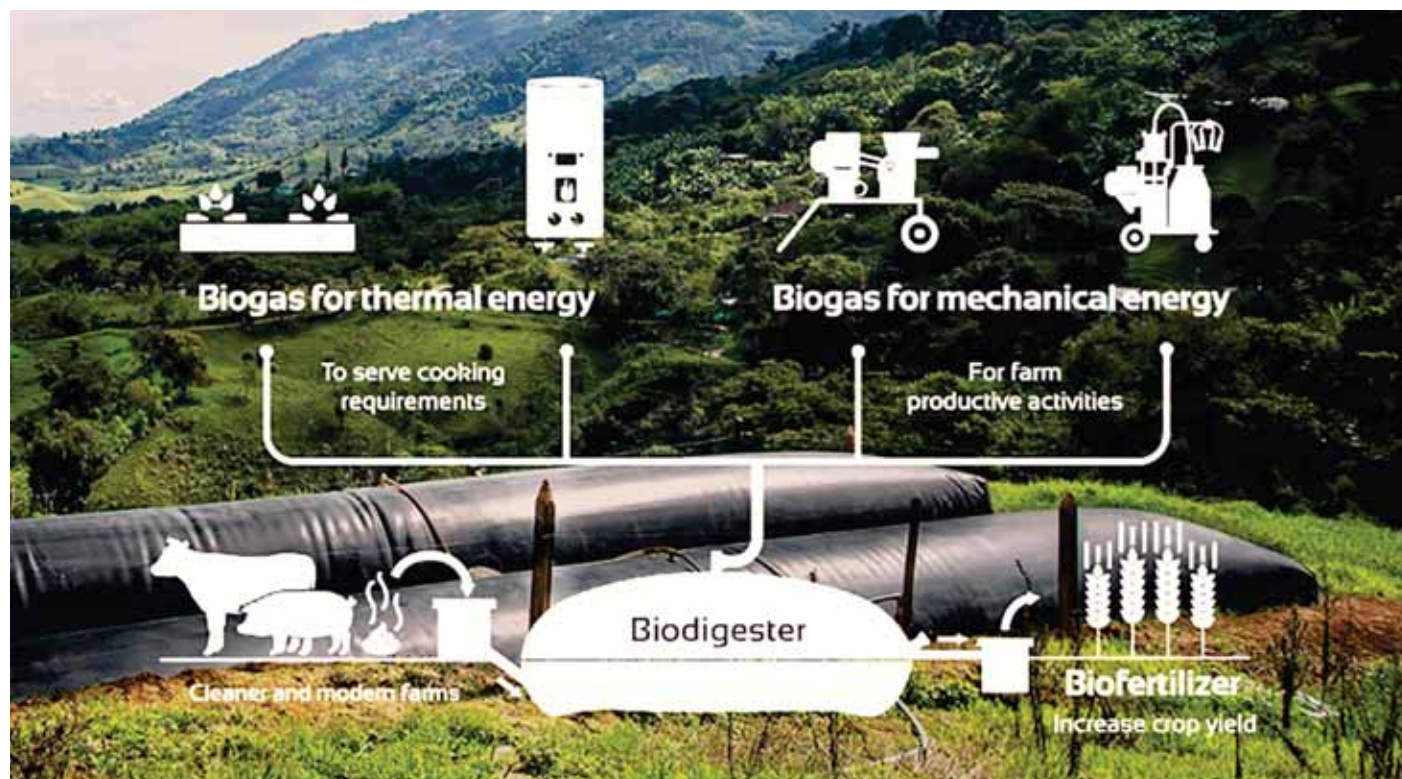
We have touched over six lakh individuals, 800 housing societies, 400 schools and colleges, 500 hotels and restaurants, 500 corporates, and 600 awareness sessions. Our initiative has also created a channel and opportunity for plastic agents to collect used but clean plastic (hard and soft) through various stakeholders. It also aims to drive home the message of social change and help empower green plastic agents.



Additionally, Bottles for Change has introduced a mobile app for the citizens of Mumbai that aims to bring citizens and plastic collecting agents (Kabadiwallahs/NGOs) on one platform. The app provides a hassle-free option for citizens to search and approach nearby plastic agents to hand over clean plastic. ■

*Anjana Ghosh is the Director of Marketing and Our Social Responsibility, Bisleri International Pvt. Ltd.*





# Sistema.Bio - Creating Clean Energy and Value With Biogas

India's demand for energy has more than doubled in the past two decades. In FY 2020, the Ministry of Power reported that India generated 1,381 billion units (BU) of power. While India's energy mix is still dominated by coal, which meets 53 per cent of the total energy demand, there has been an increasing shift to renewable energy. In 2020, renewable energy met about 24.8 per cent of the energy demand.



**Piyush Sohani**



However, access to energy in rural India is still a concern. While grid connectivity has reached 96.7 per cent of Indian households, and 2.4 per cent of Indian households remain unelectrified, most of them are concentrated in the rural areas of Uttar Pradesh, Madhya Pradesh, Rajasthan, and Bihar. In 2020, NITI Aayog conducted a study on electricity access in India wherein agricultural respondents reported an average of 15 hours of power availability.



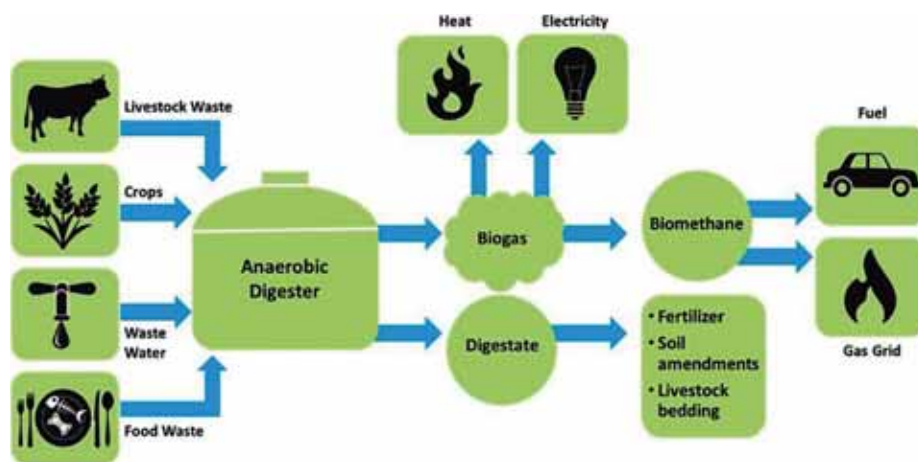
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While there is a high potential for other renewable energy sources to provide energy access in rural areas such as waste-to-biofuels, biomass, bagasse cogeneration, and small hydro, these sources are not utilised to their full potential. None of these provides a solution for cooking nor addresses the problem of clean cooking in rural areas

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In some parts of Gujarat, Karnataka, and Punjab, electricity access is as low as eight hours per day. The report also outlined the unreliability of grid connectivity in rural India with prolonged power outages and fluctuations in power even when it is available.

Additionally, rural India is plagued by a lack of access to clean cooking. A recent study in six of the most energy access-deprived States — Bihar, Jharkhand, Madhya Pradesh, Odisha, Uttar Pradesh, and West Bengal — suggests that only about one-third of the rural population in these States use LPG as their primary cooking fuel. Over 62 per cent of Indian households still use firewood for their cooking and heating needs.



While there is a high potential for other renewable energy sources to provide energy access in rural areas such as waste-to-biofuels, biomass, bagasse cogeneration, and small hydro, these sources are not utilised to their full potential. None of these provides a solution for cooking nor addresses the problem of clean cooking in rural areas.

Biogas is one of the biofuels with the potential to power the homes of millions of people in India. It is produced by digesting waste anaerobically in a biogas plant. Biogas can be used for cooking, heating, lighting, power generation, and transport applications. In addition, biogas plants produce a substrate called bioslurry as a by-product. This is an effective organic fertiliser that has a significant positive impact on yields and long-term soil health.

Biogas has significant potential as a technology to enable energy access, improve the economic returns to smallholder farming, address climate change, and mitigate health concerns — but this potential is largely unrealised. It is estimated that there is a potential to

install about 12 million household-type biogas plants and produce up to 40,734Mm<sup>3</sup> /year of biogas and produce power of about 17,000 MW, which is about 10 per cent of the country's energy requirement. As per Statista, about 5 million biogas plants have been installed till 2020, which is about only 40 per cent of total potential.

Biogas plants can be deployed in a range of different contexts, including on an industrial scale on large commercial farms and processing facilities, at a community level, and on a household level for smallholder farmers. These typically produce enough gas for household cooking, while larger systems may also produce surplus gas to be used in heating or as energy for productive assets.

At Sistema.bio, we manufacture, sell and deliver modular, prefabricated biogas plants to smallholder farmers. We market and sell this clean technology directly to farmers with a financing, service and training package that ensures access and adoption by farmers at the bottom of the pyramid at the household level. Since



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India produces over 1100 million tonnes of waste every year from a livestock population of 536 million. This makes biogas plants a viable option to power the homes in rural India which are plagued with unreliable power supply. To produce electricity, biogas can be used as fuel for combustion engines, which can further convert it to mechanical energy, and power an electric generator

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farmers have access to surplus animal waste, our biogas plants are designed to operate most efficiently with animal waste. Sistema.bio biodigesters typically require at least two cows (or equivalent livestock like pigs, poultry, etc.) to produce enough organic waste to have a meaningful impact for a household, as well as require access to water.

India produces over 1100 million tonnes of waste every year from a livestock population of 536 million. This makes biogas plants a viable option to power the homes in rural India which are plagued with unreliable power supply. To produce electricity, biogas can be used as fuel for combustion engines, which can further convert it to mechanical energy, and power an electric generator. Each cubic meter (m<sup>3</sup>) of biogas contains the equivalent of 6 kWh of calorific energy, which is equal to 21-23 MJ/cu.mt or 0.5 litre of diesel fuel. However, when we convert biogas to electricity in a biogas powered electric generator, we get about 2 kWh of usable electricity, the rest turns into heat which can also be used for heating applications. 2 kWh is enough

energy to power a 100W light bulb for 20 hours or an 80W ceiling fan for >20 hours.

Our biodigesters provide a two-fold solution in the form of biogas and bio-fertiliser, which empowers the farmers by providing access to a clean energy source for cooking and a powerful organic fertiliser for a better and more abundant yield. Around 30 per cent of our customers in India also use biogas to power their water heaters, milking machines, chaff cutters and power their farms or houses.

At Sistema.bio, we use our existing platforms and processes to offer payment plans, outreach, training, and monitoring. We have also built an in-house credit programme that matches payments with farmer cash-flows, charges low-interest rates and uses the product as loan collateral. We track the entire process on a cloud-based CRM, and our sales and technical teams collect baseline data, location and photos, and track ongoing interactions on smartphones. This allows us to integrate sales, installations, client payments, training and service visits in one platform, driving overall cost efficiency.



Using biodigesters, farmers have realised the economic benefits in the form of savings in fertilisers and energy of over Rs 1 lakh per year. They have also sold their crops to increase their income and create sources of employment. Some of our customers have reported earning over Rs 10,000 per month by selling their organic produce in the local market. Using a biodigester helps farmers to increase the productivity of their crops, which directly improves the diet of families without damaging the soil.

In terms of environmental benefits, removing the abundant supply of animal waste from the environment prevents







nitrogen pollution and runoff into water resources. Biogas also helps mitigate methane emissions that would have otherwise escaped. Using this methane as a fuel dramatically reduces its climate impact by converting it into CO<sub>2</sub>, which is up to 34 times less potent as a greenhouse gas. In India, since 2018, we have installed over 12,000 digesters and have mitigated over 46,000 tons of CO<sub>2</sub>e by treating more than 10,39,000 tons of waste. We have been able to save 8,65,000 trees, which would have otherwise been cut for firewood.

At the ground level, we have seen that there is a lack of awareness about biogas technology and its associated benefits. Biogas also faces a challenge in the form

of high upfront installation costs. The lack of purchasing power in rural households becomes a major deterrent in the wide adoption of biogas at the household level. Promotion of other forms of energy by the Government such as LPG, which are unclean, through nationwide schemes, undermines the role of biogas technology in the upliftment of rural households.

Sistema.bio is trying to address these challenges by providing innovative, tailored biogas plants, which are manufactured in India to ensure cost-efficiency. Currently, Sistema.bio India operates in over 14 States with major hubs in Assam, Karnataka, Maharashtra, Gujarat, and Chhattisgarh. Our

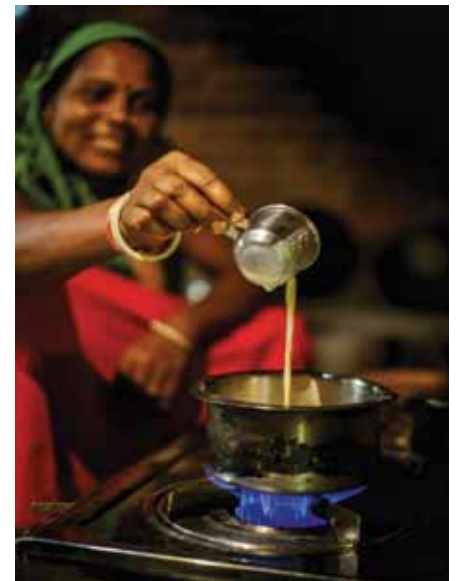


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biodigesters have impacted more than 72,000 people in the remotest corners of the country. We have been making efforts to get flexi-biodigesters recognised by the Government to include them in the subsidy programme provided by the Government to further lower the cost of modern biogas technology and make it more affordable. ■

*Piyush Sohani is the Country Director for Sistema.bio India*



## Corporates Creating Lasting Value With Innovative Sustainable Initiatives

The sole purpose of corporate social responsibility is to give back to communities and create positive and enduring socio-economic value for them. Today, CSR is one of the potent measures for corporate players to build their organisation brand's image. It has also become an integral part of the business model for many of them. Through their CSR initiatives, corporates have proven that their business goes beyond and can contribute toward a better tomorrow in these uncertain times. This listicle brings you the sustainability-related community initiatives and CSR flagship projects around environmental sustainability, clean energy, water and waste management, reducing stubble burning to achieve zero crop residue burning, from top corporates like Accenture, AERIS Communications, Birlasoft, ThoughtWorks and Sterlite Technologies.

### Accenture

We are a global professional services company with leading capabilities in digital, cloud and security. Combining unmatched experience and specialised skills across more than 40 industries, we offer Strategy and Consulting, Interactive, Technology and Operations services - all powered by the world's largest network of Advanced Technology and Intelligent Operations centres. We embrace the power of change to create value and shared success for our clients, people, shareholders, partners and communities.

### Sustainability-related Community Initiatives

Globally, we have made sustainability our topmost responsibility, and it is building a more sustainable future for all our stakeholders and communities.

In October 2020, we set three industry-leading sustainability goals globally - achieving net-zero emissions, moving to zero waste and planning for water risk by 2025.

In India, we are making significant strides towards these goals –



we have already achieved a 42 per cent green energy mix and 75 per cent of our zero-waste goal. Additionally, we recycle 95 per cent of our water in India.

We have collaborated with Craftizen for a green skilling livelihood programme for persons with disabilities, which include inclusive craft skilling, bridging the skill-income gap and eco-friendly initiatives such as:

- Recycling and upcycling discarded items such as flowers from temples and wedding halls to create Holi colours, Rangoli powders and flower sand kits.
- The paper dust from cardboard rolling mills is being converted to home décor items.
- Silk thread discard is being converted to jewellery.
- Newspaper and magazines are being

used to make eco-friendly pens

- Fabric discards are being used to create accessories and travel kits.

We have also collaborated with Villgro Innovations Foundation to incubate and scale the impact of Strawcture, a social enterprise that designs, manufactures and builds living spaces with bio-composite material (almost 100 per cent) from agricultural residue. The fire-moisture-termite resistant panels are used for walling, false ceiling, doors, furniture, and flooring applications. This green building product company aspires to reduce embodied carbon emissions of the construction sector by half.

Globally, our staff contributes approximately 1.3 million hours of their time to making a positive social impact through volunteering, pro bono work and Accenture Development Partnerships.

For example, we have several virtual eco volunteering initiatives for our staff, such as planting a tree virtually and improve green cover in cities and support farmers in rural areas. Other virtual eco volunteering initiatives include Zooniverse and GlobeObserver for crowdsourcing data which help researchers track changes in biodiversity and the environment.

Our Accenture Eco Innovation Challenge helps our people to collaborate with innovation partners and tackle critical issues that are affecting the environment.

More than 2,300 of our social innovators from 38 countries stepped up and put together teams, generating over 1,200 new ideas. There were seven winning teams, including two from India.

### Aeris Communications

We are a pioneer and leader in the Internet of Things (IoT) market. We aim to commit and utilise technology to improve the lives of those most in need and to foster better utilisation of our planet's scarce resources. We are actively working towards helping build an ecosystem of like-minded technology companies with complementary, best-in-breed capabilities that can deliver the kinds of solutions that will help non-government organisations achieve a greater impact.

### CSR Initiatives Towards the Society and Companies

We use our connected technology solutions as part of our CSR initiative to help reduce human efforts, contactless approach and save human lives during the pandemic. On that note, we share below two innovative solutions:

### Aeris Connected Personnel Tracking Solution

An easy and affordable solution to track your workforce working in remote locations and the field. This solution comes with cutting edge features like SoS calls and SMS, Geo-fencing and Geo-tracking, which ensures the safety of your employees, maintenance staff, guards,



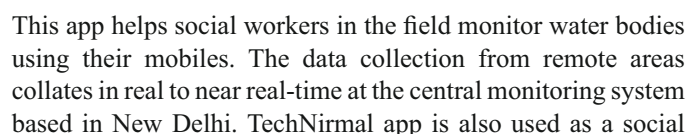


**NGOs - Tarun Bharat**  
**al Jan Jodo Abhiyan,**  
**communities to track**

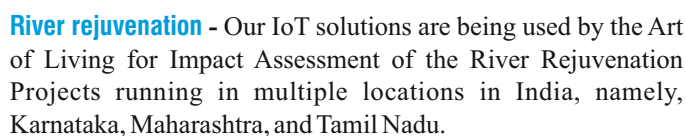
The AerTrak platform provides fleet owners with tracking and monitoring abilities for their fleet, analytics to improve performance, vehicle utilisation, safety, security of the vehicle, driver behaviour and much more.

## Water Conservation

The information about water bodies in the project area plays a vital role in the sustainability of the initiative. At present, data from the sites is collected, and since the corresponding reporting is done manually, it is prone to human errors and delays. Therefore, a more accurate tool that collects information in real-time is needed. To help partners achieve this, Welthungerhilfe India, the regional office of one of the largest private aid organisations headquartered in Germany, has joined hands with us. Under our CSR initiative, we have introduced the TechNirmal app which helps track water conservation through proper monitoring. The app has been developed by our technology partner, Manacle Technologies.



**Industries take control of water waste management with IoT** - In partnership with FluxGen, we launched an IoT and AI-based Sustainable Water Management system - AquaGen for industries. The system is running on the ground with 30+ industrial customers. It is helping food processing plants, manufacturing plants, and campuses monitor and analyse their water consumption, water leakage and areas of excessive water usage. Installation of AquaGen is enabling industries to go water positive by reducing water wastage by up to 30 per cent with a vision of saving one billion litres of water per day!



We combine the power of domain, enterprise, and digital technologies to reimagine business processes for customers and their ecosystem. Its consultative and design-thinking approach makes societies more productive by helping customers run businesses. As part of the multibillion-dollar diversified CK Birla Group, with our 10,000 engineers, we are committed to continuing our 159-year heritage of building sustainable communities.

We have a community initiative titled Project Shodhan



committed to reducing stubble burning by creating awareness among farmers in the Wheat Bowl States, offering machines and expert consultation for better yield. This project was set up in 2017 to achieve zero crop residue burning in the villages of Punjab, Haryana, Uttar Pradesh, and Rajasthan. During Phase 1, we created a difference by creating awareness about the harmful effects of stubble burning and the alternatives available. In Phase 2, we 10xed the impact we created in Phase 1. This was possible because our volunteers volunteered and offered their time to the initiative. Farmers and their families supported the project extensively. The volunteering teams educate farmers and their families on the harmful effects of stubble burning and the alternatives available. The initiative has covered 61 villages and 53,000 acres of agricultural land in these Wheat Bowl States. Last year, we signed an MoU with the Confederation of Indian Industry (CII) Foundation, towards the third phase of Shodhan, which focused on introducing alternate solutions to manage crop residue and create awareness on the ills of stubble burning.



## ThoughtWorks

We are a global technology consultancy that integrates strategy, design, and engineering to drive digital innovation. Over the last 25+ years, we have

delivered extraordinary impact along with our clients by helping them solve complex business problems with technology as the differentiator.

Our purpose is to extraordinarily impact the world through our culture and

technology excellence. With the enactment of the Corporate Social Responsibility (CSR) regulations in 2014, our Indian entity formalised the give-back process and constituted a core committee for CSR. Internally, we created a portfolio of impactful projects spanning diverse causes. In early 2019, we engaged our CSR partners, LetsEndorse, to create a focused, inclusive and mission-aligned strategy of community investment and engagement.

With “Solidarity before Charity” as the bedrock of our CSR strategy, inclusion, innovation, transparency, socio-economic justice, sustainability and scalability emerged as the key tenets of our collective CSR vision. We aim to build an equitable future for all.

Over the last two years, we have committed ourselves to move the needle and supporting promising initiatives in

different capacities aligned to four focal UN Sustainable Development Goals (SDGs):

1. SDG 3: Good Health and Well-being
2. SDG 5: Gender Equality
3. SDG 9: Industry, Innovation, and Infrastructure (with a special focus on Equitable Technology)
4. SDG 10: Reduced Inequalities

Sustainability is a key tenet when identifying a CSR project. We seek to support projects that promise long-term sustained impact. Below are some examples of how we think differently when it comes to sustainability:

**Investing in life-altering initiatives** - The employment training programme for people from the LGBTQ community, for example, seeks to empower people with self-dependency through necessary knowledge, skills and the means to survive with dignity and resourcefulness.

**Investing for multiplier effects** - Udyamita provides the necessary enablement to 100 women who can take over the reins of their familial and financial health. Once empowered, these women can secure better education, health and quality of living for their families. The goal here is to pull a family out of the cycle of poverty.

**Investing in capital assets** - Another project works with the Mahadalit community in Bihar to empower them with bio-fuel and creating a circular economy that provides employment. Additionally, the community benefits from the consumption of a natural resource, biogas.

A similar example is another project with a rural hospital in Assam. The area faces severe power cuts leading to life-threatening crises during childbirth, surgeries, etc. As part of the project, the hospital is powered with solar energy generated at the hospital and supports it during power cuts.

**Investing in communities** - A selection criteria for our projects is also the critical juncture of change, where, with just one impetus to overcome, the barrier falls, and things change for the better. For example, just at the right age, adolescent girls from the Devadasi community are provided with skill training to help them avoid the trap of sex work.

**Decentralised community biogas plant in Imamganj, Bihar** - The project built a community biogas plant that recycles 2.5 tons of organic waste per day and replaces cow dung with cooking fuel or electricity, and chemical fertiliser with organic manure. A circular economy has been built within the community. The construction of the plant and the continued operations provide women with employment, thus providing them with a means of livelihood.

**Empowering rural healthcare through clean energy innovations in**

**Assam** - With 486 deliveries, 564 general surgeries, 2,174 in-patients and 25,718 OPD cases every year – Burrows, a 70-bedded tertiary care hospital, is the lifeline for poor communities living around an Assamese village and for those across the border in Manipur.

The hospital that suffered from severe electricity issues that affected emergency cases of childbirth and ventilators, is now powered by solar energy.

**Myrada** is our supported project aimed at instituting a set of sustainable protocols and approaches to mitigate maternal and neonatal mortality and anaemia in pregnant women. The project is developing a reliable tracking mechanism for effective coverage and follow-up care in rural Karnataka.

**Equipping female students with access to affordable technology and enhanced quality of computer education** - 950 girl students went through the programme in 2019-20. We are also supporting the FY 2020-21 batch of students.



**Job-readiness training programme for women with disabilities** - We have supported The Association for People with Disabilities and The Diya Foundation with job-readiness training programmes for women with disabilities.

**Setting up a Mitti Cafe to support the livelihood of People with Disabilities** - We supported the setting up of a Mitti Cafe in Koramangala, Bengaluru. During the lockdown period, the Cafe worked as a cloud kitchen. Today, it employs ten individuals with physical and intellectual disabilities and is present on online portals like Swiggy and Zomato, alongside a dine-in option.





Our CSR strategy was designed on the back of several collaborative internal reviews, revisions and conversations with partners like LetsEndorse. With a renewed focus on the organisation's social impact goals, while also learning from the successes and setbacks of our other initiatives, the CSR portfolio creation is kick-started by our CSR Committee and LetsEndorse.

Our process involved looking at the global goals and mapping them to the SDG India Index (to identify national and regional priorities) and ISO 26000 agendas (to align with global standards). We also looked at our key strengths and values as an organisation and arrived at a set of finite developmental targets. The open, transparent and process-oriented approach has yielded phenomenal social returns on investment. We learn from each project and offer continuous feedback, technical know-how and best practices to our NGO partners to enhance their potential.

### **Sterlite Technologies**

We are an industry-leading integrator of digital networks. Our fully 5G ready digital network solutions help telcos, cloud companies, citizen networks, and large enterprises deliver enhanced experiences to their customers. We provide integrated 5G ready end-to-end solutions ranging from wired to wireless, design to deployment, and connectivity to compute. Our core capabilities lie in Optical Interconnect, Virtualized Access Solutions, Network Software, and System Integration.

We believe in harnessing technology to create a world with next-generation connected experiences that transform everyday living. With a global patent portfolio of 569 to our credit, we conduct fundamental research in next-generation network applications at our Centre of Excellence. We have a strong global presence with next-gen optical preform, fibre, cable, and interconnect subsystem manufacturing facilities in India, Italy, China, and Brazil, along with two

software development centres across India and a data centre design facility in the UK.

Achieving long term sustainability requires an integrated focus on Environment, Social and Governance. No longer can climate or social risks be considered an afterthought during boardroom discussions. Along with action, transparency and authenticity must be maintained through appropriate disclosures. Creating resilience among communities by mirroring ESG efforts is just as crucial. One cannot be done in isolation from the other.

Therefore, water and waste management, circular use of resources and GHG emissions reduction are not only an integral part of our operations, but a part of our social impact programmes. This cohesive approach is extremely crucial to create holistic and meaningful transformation and shared value for a corporate's many stakeholders. However, no corporate can achieve the transformation alone. They need to work collectively. We have leveraged partnerships to achieve exponential impact across its value chain and geographies through holistic and agile programmes.

Waste management is one of the fundamental ways we drive our environmental agenda. Lesser waste means better efficiencies and results in reduced GHG emissions going to landfills. It also enables the circular use of limited resources. We use a similar approach in our afforestation and biodiversity restoration programmes, where organic waste is converted into compost and used as fertiliser for plantations. Similarly, water from processes is not discharged but recycled and further used to ensure optimal use of this scarce resource. These efforts are being replicated for communities as well.

We are working to create community-level water recycling plants that can purify this precious resource for reusing it for afforestation and even groundwater recharge. Instead of simply doing water



conservation in communities, we are working on groundwater recharging and rainwater harvesting. These structures will be maintained through women-led self-help groups. Social behaviour change communication is carried out to change water usage habits. Communities are not just beneficiaries for us but partners that play an active role in shaping the change they envision. We work along with governments to build sustainable ecosystems that alter traditional misconceptions around health, water, waste, sanitation, education and gender equality.

But for sustained change, these ideologies need to percolate up and down our value chain as well. We, therefore, consider our suppliers and waste buyers our partners and work with them to proactively create better eco-friendly products and package them while ensuring they maintain global standards concerning ESG parameters. We also ensure that our partners strictly adhere to Human Rights, Fair Labour practices and environmentally sound operations.

These are some of the commendable ways by which corporates operating in India can channelise their CSR activities and, thereby, contribute towards the betterment of our people and our planet. While achieving these objectives, corporate players operating in India can also contribute to building a self-reliant India. ■



## Harnessing Communities Towards Ecosystem Restoration

This year's theme, 'Ecosystem Restoration,' for World Environment Day, underscores the urgency facing this generation and the ones that come after. Restoring and reviving our waning environment and green spaces requires sustainable and conscious dedication. Above all, the scale of the environmental and water challenges facing us, whether on a local, national or global scale, demands a collaborative and multi-stakeholder approach.



**Shaina Ganapathy**

Catalysing true ecosystem restoration is beyond the scope of a single organisation. Embassy Group has long believed in the collective power of giving back, and it has reshaped the ways we undertake our Corporate Social Responsibility initiatives. During this past year, which was a challenging one, we witnessed the might of partnerships and how they have enabled us to reach

beyond what we can achieve ourselves. It has reaffirmed our belief that together we can achieve more.

We have been actively working in the Bettahalasuru Panchayat, which comprises ten villages in North Bangalore, since 2012. We began by providing a new government school building in the Tarahunise village, which continues to be adopted and maintained

by us. Five additional government schools in the Panchayat also benefit from our holistic health and hygiene initiatives, including the provision of



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The Bettahalasuru Panchayat, however, suffered from air, water and soil pollution, with garbage from approximately 2,500 waste generators (around 53-tonne kgs per month) being dumped and burned. There was a low level of involvement and understanding of sustainable living methods from the communities, an increasing loss of biodiversity and over-usage of natural resources. Due to the rapid expansion of the Bengaluru metropolitan area, Bettahalsuru Panchayat runs the risk of becoming an urban dumping ground like many other areas in the city

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health kits, awareness programmes, comprehensive health screenings and treatments. The Group has also supported Tarahunise village in developing the infrastructure, including building the main arterial road, restoring the ancient temple and constructing a community hall.

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Bettahalsuru Panchayat runs the risk of becoming an urban dumping ground like many other areas in the city.

“Today, Tarahunise village looks very clean with little to no garbage on the streets. Earlier, however, the situation was different. There used to be garbage everywhere – due to this, there was no systemic way to dispose of waste,” said Rajeswari, a resident of Tarahunise Village.

Myriam Shankar, the Managing Trustee of The Anonymous Indian Charitable Trust (TAICT), approached us with a solution – addressing the lack of accountability and ownership over our diminishing natural resources and distressingly high levels of pollution. Initiated in 2016, EcoGram is our

sustainable CSR project in partnership with TAICT. Together, we jointly aim to create an ecologically sound replicable model Gram Panchayat to propagate sustainable waste, water and soil management.

What began as a pilot project in Tarahunise now encompasses eight villages in the Bettahalasuru Panchayat, benefitting 1811 households and ten bulk generators. Myriam Shankar said, “To implement waste management in a locality, which never saw a dustbin, let alone 3-way segregation at source, is an incredible uphill task. It entails creating intensive awareness amongst all stakeholders, be it the local government representatives, villagers or commercial establishments. It requires setting up solid operations of men, machinery and

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The EcoGram project focused on bringing together members of the community, local governance and investors towards addressing the issues of irresponsible disposal of garbage and depletion of soil and water

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infrastructure. We have been able to deliver the EcoGram project, which encompasses end-to-end waste, including collection, transportation, secondary segregation and further processing. The positive environmental impact is huge, in addition to creating employment for marginalised communities.”

The project focused on bringing together members of the community, local governance and investors towards addressing the issues of irresponsible disposal of garbage and depletion of soil and water. TAICT had to first get a buy-in from the Panchayat leaders, in a series of meetings held in 2016. As a part of their first phase, they brought in multiple partners to set up a solid waste management system in Tarahunise. They then conducted a baseline survey to understand the demographic make-up and land-use patterns of the village.

The decentralised solid waste management allowed waste generators to sort waste into three categories at source using the 2bin1bag methodology. The collected organic waste is then converted into compost, and the recyclable waste is sorted at a Dry Waste Collection Center, all within the Gram Panchayat. There has been 93.2 per cent segregation at source achieved for village households, with



94.3 per cent achieved for bulk generators across eight villages in FY2020-21.

To complement the solid waste management infrastructural solutions provided in the Panchayat, a strong emphasis is also placed on community engagement and awareness initiatives curated through women and children in the communities.

Under the EcoGram Shakthi programme, women of the Gram Panchayat are empowered to take ownership of their villages in terms of environmental sustainability. The initiative serves as a

livelihood programme through the sale of local food and craft products as well. Increasing engagement and civic awareness, TAICT developed a set of educational materials called 'Trashonomics' targeted towards educating children on solid waste, its environmental, health and financial impacts, and liquid waste management, which concerns water consumption and management. Annually (other than 2020-21), children participate in EcoGames, an annual summer camp that encourages them to find creative ways to raise awareness amongst their communities.

These projects work towards producing a self-sufficient Panchayat with residents of all ages regularly participating in clean-up drives and awareness marches. Embassy and TAICT's partnership with the Panchayat demonstrates the importance of engaging residents and mid and high-level decision-makers in bringing about the desired behavioural change to improve the environment. The success of the pilot project encouraged participation from the communities in defining the issues, contributing to data collection and providing their time and resources towards EcoGram's activities.

“Our village never used to be clean with all kinds of garbage strewn around. Now, Embassy and TAICT have brought about







much improvement and spread awareness about cleanliness and the environment. Earlier, our Aganwadi used to be very dirty – few children would come. It used to be a very unhealthy environment. However, in the last two to three years, more children have been coming. We have made even them aware of the importance of cleanliness. Even small children are aware that they should not litter and the importance of getting rid of their waste properly,” said Prabhavati, an Aganwadi worker in Tarahunise.

EcoGram has seen 301 metric tons of dry waste collected and segregated with 323 metric tons of wet waste collected and segregated, 254 metric tons of dry waste recycled thus far. The partners have managed to save 3,127 cubic metres of landfill area.

In 2020, recognising the in-depth work carried out by us and TAICT over the years, the Panchayat signed a Memorandum of Understanding (MoU) with us, allocating two acres of land dedicated to collection and segregation of dry and wet waste. Further, the Panchayat requested our sister concern - Embassy Office Parks REIT - to build the Dry and Wet Waste Collection Centre,



with a greater capacity for gathering and sorting waste. This will enable the extension of waste collection from the present eight villages to eighteen villages, over the Bettahalasuru and neighbouring Meenakunte Panchayat.

Krishna Byre Gowda, MLA, Byatarayanapura, said, “The commitment demonstrated by Embassy Group towards creating a replicable waste model in North Bangalore has been truly commendable. Developing solutions to the enormous burden of waste and lack of infrastructure in villages is of utmost importance – the new Dry and Wet Waste Collection Centre built by Embassy REIT will go a long way in promoting a more sustainable way of managing waste and will benefit 18 villages in both the Bettahalasuru and Meenakunte Panchayats. We hope that this example can be repeated across Urban and Rural Bangalore, creating a brighter, cleaner

and more engaged city.”

Head of the Bettahalasuru Panchayat, Rajani Prakash added, “This project will make our Panchayat a model of collaboration and sustainability. We look forward to our continued partnership in striving to uplift our villages holistically.”

The Centre will be built at a cost of Rs 1 Crore with the Bettahalasuru Panchayat contributing Rs 9 Lakhs. We have appointed TAICT to oversee the development and operations of the Dry and Wet Waste Centre.

As we move towards achieving ecosystem restoration, it is important to recognise the role that citizens and localised environmental movements can play. Involving local and key stakeholders greatly increase the effectiveness of engendering systemic change and increasing accountability. The key to effective change is to understand that environmental issues are best handled when all concerned citizens at every level participate. Harnessing the strength of our communities and partnerships towards change ensures that we are laying a firm ground for continued and future change.

There are many ways to empower communities and create a sense of belonging towards their community and environment – an effective path forward is providing locals with access to information that enables them to make informed and sustainable choices. Only then can our dream for a healthy ecosystem, coupled with economic development, come true. ■

**Shaina Ganapathy** is the Head of Community Outreach, Embassy Group

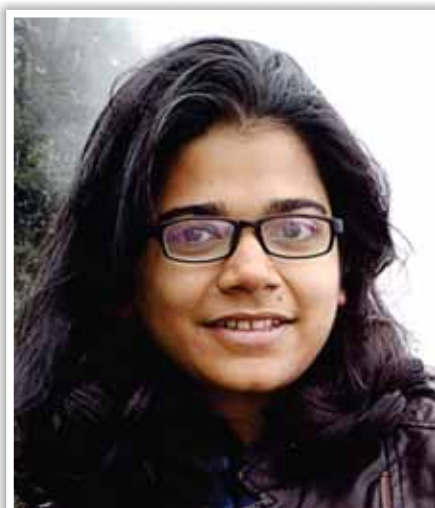




## Sustainable Habitat - Learnings from the 1990s

**A life of abundance, raining resources, an unobstructed flow of energy, and a living space bigger than ever is all we want to feel blissful, successful and bountiful. Not so long ago, in the '90s, we saw and experienced blissfulness and bountifulness in close quarters. A momentary flashback to the life before the millennium takes us back to the most joyous days of our lives - days when everything was not necessarily abundant, resources were not available at the click of a button, power cuts were common, and larger families lived in smaller houses.**

Our lifestyle has changed in a short span, and the quantum of resource requirement for the modern lifestyle has grown manifold. Broadly, these resources may be food, energy, land and water. Our modern lifestyle demands these resources in proportions higher than ever before. The risen and further rising demand for all such resources puts us face to face with a fundamental question. How long can we sustain a consumption-driven society?



**Priyamvada Bagaria**



“

India is committed to the United Nations' Sustainable Development Goals (SDGs) for 2030. The Government of India (GoI) promotes various flagship programmes towards the fulfilment of the SDGs. They include the Swachh Bharat Mission, Pradhan Mantri Awas Yojana, Smart Cities, among others. However, without a change in the consumeristic attitude and a shift to a mindful sustainable lifestyle among citizens, GoI schemes may not achieve their full potential

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The question of sustainability runs parallel with urbanisation. As our urban centres grow, they need to be constantly fed with resources. The global urban population outnumbers the global rural population, and by 2050, two-thirds of the world population would be living in its urban centres. India is one of the least urbanised nations, yet the urban population in India is the second-largest in the world. India's urban population will further grow with 250 million urbanites by 2030. India is committed to the United Nations' Sustainable Development Goals (SDGs) for 2030. The Government of India (GoI) promotes various flagship programmes towards the fulfilment of the SDGs. They include the Swachh Bharat Mission, Pradhan Mantri Awas Yojana, Smart Cities, among others. However, without a change in the consumeristic attitude and a shift to a mindful sustainable lifestyle among citizens, GoI schemes may not achieve their full potential.



Shifting the urban lifestyle to a sustainable one starts with first understanding its consumption and waste-producing trends. As urban dwellers, we are large scale consumers as well as waste producers. We need to tweak both ends together to ensure the sustainability of our habitats. Municipal waste from cities adds up into huge piles and ends up at large waste deposit sites in the suburbs of our cities. These waste

mounds not only occupy land area but also emit huge amounts of greenhouse gases. They are a threat to urban health and sanitation as well. The solution to this problem is waste segregation at its point of source, i.e., households. A simple, easy to adopt solution yet, hardly practised. Waste from the kitchen can be composted easily in bins at home. Of the total municipal waste generated in cities, more than 50 per cent is biodegradable,



“

Since most of us have witnessed the '90s and have seen how our parents sold all household non-biodegradable discards to the recyclers instead of adding them to municipal waste, it should not be hard for us to revert to the old system. Understandably, the recycler networks have eroded and need to be re-established. The Government must promote small scale entrepreneurs for such recycling businesses

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and 17 per cent is recyclable. This considerable proportion of waste can be avoided from taking up space in landfills and waste mounts if segregated and treated wisely. Municipal authorities operate solid waste management (SWM) plans, but they are not sufficient. SMW needs to be aided by the active participation of individual citizens through the golden 5R approach – reduce, reuse, recover, recycle and remanufacture.

The 5R approach, if adopted well, can also help in significantly reducing the demand for natural resource extraction, thereby reducing the adverse impacts on natural ecosystems. Before the 5R term was coined, Indians already had been beautifully using their network of kabadiwallas, essentially recyclers of all non-food discards. After the economic boom in the '90s, we have been spoilt with use and throw marketing gimmicks and a massive lineup of products.

A society that inherently uses more and recycles less turns into a consumeristic waste-producing society. A simple



example is the packaged drinking water in plastic bottles. They have entered our households and offices at such a massive scale that we have almost forgotten the good old humble earthen water pot. Since most of us have witnessed the '90s and have seen how our parents sold all household non-biodegradable discards to the recyclers instead of adding them to municipal waste, it should not be hard for us to revert to the old system. Understandably, the recycler networks have eroded and need to be re-established. The Government must promote small scale entrepreneurs for such recycling businesses.

As citizens, we must take small but steady steps towards switching from the 'use and throw' products to 'use, reuse, sustain' ones. Compost our kitchen waste and sell non-biodegradables to the

recyclers. It is encouraging to note that there are so many bloggers promoting sustainable ways.

A flashback to the '90s also reminds us of our roads, which were not as densely filled with carbon-emitting vehicles as they are today. A large section of the community commuted using bicycles, cycle-rickshaws and on foot. Depending upon affordability, most of us now commute via petroleum-fueled two-wheelers, four-wheelers and public transport. Vehicular emissions not only cause global warming but also degrade the air we breathe.

Switching to the humble bicycle is not the last stop solution for few practical reasons. Our roads do not have cycling lanes; bicycles may not cater to all age groups (depending upon fitness); they are weather-dependent for ease of use, and they may take a longer time. On the other hand, upon switching to the bicycle, we may save up on rising fuel costs, and even our gym membership fees. A more practical and long-term solution lies in electric vehicles, which is steadily making their way into the Indian market. This industry needs to evolve faster to cater to the urban commuter. The Government needs to enhance public transport facilities and promote their use via incentives as free passes and tokens.

Water. The '90s reminds us of how precious a resource it is. We were taught to use it wisely. Mere every day habits can help us conserve water. Though large







urban centres have well-connected water supply systems, smaller towns and rural area still have immense scope for water connectivity, but it may not be possible without reducing the consumption of household water in cities. Human habitats in urban and rural areas must adopt water conservation techniques like roof harvesting, greywater recycling, using recycled water for non-consumption purposes, pressure reducing valves, efficient taps and nozzles, leak-free pipes and metered water.

Among the various aspects of leading a sustainable life, water consumption demands the highest level of mindfulness and responsibility as it is a basic and sometimes free resource. Technological innovation around water conservation is very encouraging, but policy intervention to mandate using such technologies is required to steer the public mindset towards water as a precious commodity. As citizens, we may begin with small steps as closing the taps when not in use, installing systems to recycle water for use in gardens and washing, installing powerful nozzles, and tapping rainwater.

Talking of electricity, the energy that powers our urban habitats, without which our urban lives would come to a complete standstill, is the actual elephant we never really discuss. We tend to think of electricity as the greener alternative to petroleum and gas. It is because

electricity is that intangible entity produced in areas far away from urban habitats. We seldom ponder over the process of electricity production.

India generates over 60 per cent of its electric power in thermal plants which use fossil fuels and often flout emission norms. Before we think that we are making greener choices by switching to electric alternatives for cooking and

vehicles, we must bear in mind the scale of carbon emissions made for producing electricity. Switching to greener electricity, i.e., renewable energy at the household level, has already become commonplace, and wider adoption of it in the human habitat will take us closer to the SDGs.

The Government must incentivise low consumption of electricity under a ceiling and penalise over a certain limit, as is done in some European nations. Installation of solar panels must be encouraged through government schemes. Needless to say, as consumers of electric power, we must practise mindfulness and wisdom in a typical '90s conduct.

Our Government is making efforts in meeting the SDGs through various programmes. But the last baton of this relay lies in our hands - the citizens. Taking small steps in our daily lives may help in making the human habitat more sustainable. ■

*Priyamvada Bagaria is a landscape ecologist. She is currently freelancing as a*





# Carlsberg: Together Towards 'ZERO' - Returning Glass Bottles for a Sustainable Future



India is overburdened by the daily disposal of untreated waste, leading to limited space in landfills. Around 31 million tons<sup>1</sup>, which is more than 70 per cent of India's annual collected garbage, remains untreated; making it a concerning statistic. Today, glass is one of the primary domestic and business waste streams in the country.

Glass is an inert material made from natural materials. If glass is not recycled, it can sit idle for years, taking up a lot of space in landfills. However, glass can be both recycled and reused repeatedly; and re-using it is one of the many ways we can help reduce pollution and minimise

waste. That is not all, as reckless dumping of broken glass pieces along with trash, not only poses a threat on sanitation workers but also reduces the chances of reusing the material.

Reusable packaging is a great alternative to significantly reduce environmental impacts. One of the factors that need attention currently is the use of glass in consumer packaging and its implications to the environment. It might not be known to many that Returnable Glass Bottles (RGB) is the most environment-friendly consumer packaging available due to its resource efficiency and low carbon footprint. All one needs to do is to

return the beer bottle in perfect condition to a bottle dealer or as per the regular waste disposal process. A circular loop exists, where the bottle is handed from the scrap dealer to various vendors and consolidators, and finally reaches the manufacturer. The bottle is then inspected at the breweries using advanced technology and cleaned under hygienic conditions to make it fit for reuse.

However, implementing sustainable measures not only benefit the environment at large but also support the community we live in by providing employment at various levels.

<sup>1</sup>Waste management crisis in India - RECYCLING magazine ([recycling-magazine.com](http://recycling-magazine.com))





In the alcobev industry, 'Re-using' is getting a gradual recognition in conversations with a focus on saving the environment, taking a step towards a more sustainable future. As a part of Carlsberg's ambitious sustainability programme 'Together Towards ZERO', initiatives promoting 'Zero Waste' are in focus.

Keeping in mind the large impacts of primary glass production on the environment, it is environmentally favourable if used multiple times. Carlsberg's focus on glass bottle reuse makes the beer bottles the lowest carbon impact packaging, which needs to be further improved by increasing the reuse. This can be simply done with each consumer taking ownership of returning a Carlsberg glass bottle, undamaged and intact.

Here is why we should focus on reusing glass bottles and their unmatched benefits – both for the environment and the community:

**It saves energy and our precious natural resources:** Producing new glass bottles is energy-intensive. With every reused bottle, the energy used to create a fresh bottle reduces by half as we can

save on energy needed to melt the glass. This also results in conserving natural resources such as sand, limestone, etc.

**Reduces greenhouse gas emissions:** Carbon emissions can be reduced significantly by facilitating the return of glass bottles to collection centres. It saves raw materials, lessens the demand for energy, and cuts CO<sub>2</sub> emissions. For

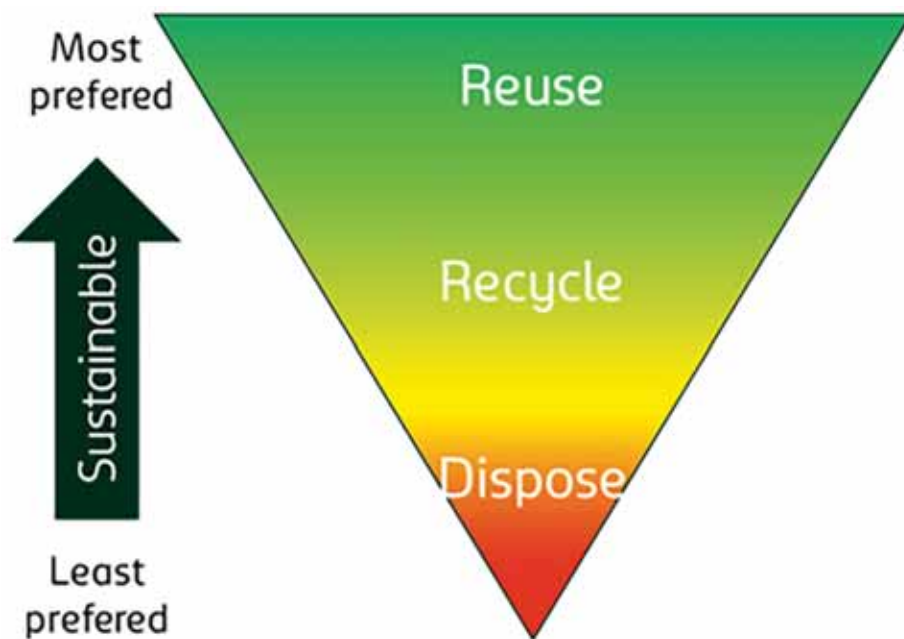
instance, when a Carlsberg bottle is reused five times instead of three on an average in India, it significantly reduces the carbon footprint to less than one-fourth of the impact of a single-use glass bottle.

**Less waste into landfills:** Reusing glass bottles can help bring the numbers down by preventing the amount of discarded waste.

**Creates an average of ten times more jobs:** When you return a bottle through the usual waste disposal process, it passes onto multiple vendors across states, cities and districts, supporting more than 5,000 livelihoods. For example, in Rajasthan, ground-level vendors are engaged to collect all kinds of scrap items like liquor, bottles washing, wastepaper, old plastic, metal, broken glass, among others, thus, employing more than 7,000 people in the region.

Changing consumer behaviour is one of the critical factors to ensure all glass bottles are well-preserved for reuse to save energy that could then be put to better use for a sustainable future.

Consumers are, therefore, encouraged to return each bottle in good condition to do their bit to reduce the climate impact. Every bottle counts. ■





## Study Reveals that India's Last Remaining Rainforest Fragments Harbour Crucial Ecological Interactions and are of High Conservation Value

Forest fragments protect key interactions between plants and fruit-eating birds, thus maintaining biodiversity in fragmented landscapes.

A recent study from the last remaining lowland tropical evergreen forest patches in North East India highlights the conservation value of forest fragments as they harbour an array of interactions between plants and fruit-eating (frugivorous) birds.

Published in *Biotropica*, this is among the first studies from the Asian tropics to study the impact of forest fragmentation on plants and frugivorous birds. This study was conducted between January and April 2019 by a team of scientists from the Wildlife Institute of India (WII, Dehradun) and the Nature Conservation Foundation (NCF, Bangalore).

“At the scale at which forests are shrinking, it is crucial to find out how ecological interactions like the ones between plants and seed-dispersing birds are altered because of fragmentation,”

says Abir Jain, the lead author of the study. “This study looked at the differences in the plant and frugivorous bird communities between forest fragments and contiguous forest and we found that fragments harbour diverse sets of interactions,” he adds. The authors collected field data by observing the

feeding activity of frugivorous birds inside the forests and documented the diversity of fruit species they fed upon. Sampling was conducted in two forest fragments experiencing degradation pressures - Doom Dooma Reserve Forest, Kakojan Reserve Forest (both ~25 km<sup>2</sup>) and a less disturbed, better



*Oriental Pied Hornbill feeding on Ficus altissima*





White-throated Bulbul feeding on *Poikilospermum suaveolens*



Asian Fairy Bluebird feeding on *Callicarpa* sp.

protected contiguous forest patch - Dehing Patkai National Park (>100 km<sup>2</sup>).

This study showcases that habitat fragmentation resulted in a reduction in the diversity of interactions between plants and frugivorous birds as well as changes in their composition. However, despite this, forest fragments continue to harbour distinct sets of interactions between plants and frugivorous birds. The authors documented 238 interactions between 63 fruiting plants and 44 frugivorous bird species across all sites. Forest fragments had a higher prevalence of species associated with open habitats and fewer large-seeded plant species, dependent on large birds for seed dispersal.

Habitat degradation and associated gaps in the tree canopy in forest fragments could promote the fast growth of shrubs and climbers. Interestingly, fruits of certain climber species and fig trees were found to be important resources for frugivores, particularly in the fragments. “Different species and individuals of figs fruit at different times of the year and serve as a vital source of food all year round, including the lean season. This underscores the importance of figs and the need to conserve them,” explains co-author Dr Navendu Page, a Plant Ecologist from WII.

The study also reported that small-sized frugivorous birds (bulbuls and barbets) fed upon the highest number of fruit species at all sites, highlighting their crucial role in seed dispersal in contiguous and fragmented forests. Notably, the near-threatened, White-throated Brown Hornbills were found to be important seed-dispersers of large-seeded plants in the fragmented forests. Besides, the authors have also documented their breeding in these rainforest fragments. “This study highlights the value of the remnant forest patches even for large-sized birds, like the Brown Hornbill, that plays an important role in the dispersal of large seeds which not many other birds can disperse. The range of Brown Hornbill is shrinking in north-east India due to habitat loss and hunting, thus conserving these remnant forest patches for the conservation of these birds is vital,” says Dr Rohit Naniwadekar from NCF, the co-author of the paper.

The findings from this study highlight the conservation value of North East India’s last remaining lowland rainforest fragments and the diverse sets of plant-seed disperser interactions they harbour. Remnant fragments can act as stepping stones for preserving regional biodiversity and facilitate connectivity between fragments and contiguous forests for wide-ranging species to move across the fragmented landscape. While certain areas in the landscape are better protected, the future of many rainforest fragments in this region may be perilous. “Administering improved protection and active ecological restoration by planting native fruiting plants in degraded

fragments with the support of local communities must be carried out to preserve these fragments and the biodiversity they represent,” says co-author Dr G. S. Rawat, former Dean and Scientist from WII.

### Seed Dispersal by Frugivorous Birds and Fragmentation

Up to 90 per cent of plants in tropical forests could be dependent on animals for the dispersal of their seeds. For this reason, frugivorous birds are particularly referred to as the gardeners of the forests. While birds benefit from the nutrition they get from the fruit pulp, plants benefit as birds carry their seeds away from the mother plant before dispersing them. For some species, the treatment that seeds receive in the guts of animals enhances their ability to germinate. Escape of seeds away from the mother plant is important as otherwise, they are prone to attack by pathogens like fungi, insect larvae, and seed-eating mammals like rats. Such mutually benefiting interactions between plants and frugivorous birds facilitate the regeneration of plants, maintain biodiversity, and ensure good health of the forests.

Unfortunately, tropical forests of Asia experience among the highest rates of forest loss and habitat fragmentation in the world. The Upper Brahmaputra Valley in eastern Assam, North East India is characterised by a remarkable biodiversity and had contiguous tracts of lowland tropical evergreen forests. These forests harbour a rich diversity of mammals such as the Asian Elephant, Western Hoolock Gibbon (The Only Non-Human Ape Species In India), Capped Langur, Clouded Leopard, Indian Giant Squirrel, and Malayan Sun Bear to name a few. However, these forests have undergone severe fragmentation and conversion to tea plantations and agriculture coupled with the extraction of natural resources such as oil, coal, and timber over the past century. Consequently, the remnant forests occur as a mosaic of isolated fragments of varying sizes, protected as Reserve Forests and Wildlife Sanctuaries that continue to face anthropogenic threats and associated degradation. ■

*All photos copyright of Abir Jain*

# Accolades

NARA CHANDRABABU NAIDU



AMARAVATI



CHIEF MINISTER  
ANDHRA PRADESH

## MESSAGE

I am happy to acknowledge the receipt of a copy of your magazine, "CSR Mandate". I am very pleased to see the effort to summarise the different CSR activities undertaken by Corporate India.

I absolutely agree that Corporate Social Responsibility acts as a catalyst in bringing about a positive societal change. All companies must do their part in contributing to the various welfare programmes, launched by the government.

This is the right path of community building, encouraging empathy and ownership of the different problems in society that can lead to a holistic growth of society.

I wish your organization all the best, and hope to see more of such good work in documenting the impact of CSR activities.

(NARA CHANDRABABU NAIDU)

DOC RESEARCH  
INSTITUTE

July 13, 2017



Dear Atula,

I have been following the evolution of CSR Mandate and find it into a fully developed and well referenced sectoral magazine in a relatively shorter period of time in its class. Its reportage especially on corporate social responsibility (CSR) and sustainability issues is most updated, latest and informative. The magazine also devotes its efforts in gathering data and analytics on businesses and provides a good approach on future pathways. Detailed and well rounded opinion that the magazine offers on key issues is too valued to be missed.

I personally leverage and benefit from the magazine to keep myself acquainted on the latest on CSR, sustainability and community engagement issues taking place in India, so necessary to shape new approaches and fresh thinking.

**Pooran Chandra Pandey**  
Chief Executive Officer  
Dialogue of Civilisations Research Institute  
Berlin, Germany

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CONSUL GENERAL OF THE REPUBLIC OF INDONESIA  
MUMBAI

No. 81/96/Men/VIII/2017

Mumbai, 31<sup>st</sup> August 2017

**Mr. Atula Imchen,**  
Executive Editor,  
New Media Communication Pvt. Ltd.,  
New Media House, 1 Akbar Villa,  
Mansarovar Road, Mansarovar,  
Andheri East,  
Mumbai 400 025



Dear Mr. Atula Imchen,

This is to acknowledge the receipt of the CSR Mandate, a magazine published by New Media Communication Pvt. Ltd., to highlight the successful CSR activities undertaken by Corporate India.

I just go through it and find it very interesting and it is really a nice reading experience.

I take this opportunity to thank you for sending the magazine to me.

With warm regards,

Yours sincerely,  
Consul General  
General Consular

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Ref: TMAR/17/001/0000

Date: 07<sup>th</sup> March 2017

To:  
Atula Imchen  
CSR Mandate



Feedback on CSR Mandate Magazine

It was a refreshing experience to read the articles in CSR Mandate magazine. All the articles are clearly written, well researched and so resource rich. Topics covered by this magazine are very relevant to the development sector, agencies and workers. I found a lot from a single issue of this magazine. Presentation and printing of your magazine is also very good.

My best wishes to all team members of CSR Mandate magazine.

This is for your information and necessary action.

Respectfully,

Dr. Pratik Mehta  
Founder For You  
TMAR Software  
Phone: +91 22 22211111  
Email: info@doctorsforu.org



Atula Imchen



Dear Atula Imchen,  
Please refer to your communication dated July 11, 2014 on CSR Mandate, enclosing the issue in which has been published my interview. It was only natural for me to touch specially upon the theme of sanitation because I have been doing work in this field for more than 40 years now. I feel greatly encouraged that my efforts have borne fruit in the sense that the subject of sanitation, even a discussion of which earlier was a taboo, now occupies at times a central stage of social discourse dealing with health, environment and other subjects which are matters of great concern to us. I feel like redoubling my efforts in the context of the Prime Minister saying that construction of toilet should have precedence over that of temple. I now propose associating with a number of business houses which have a thrust on sanitation in their activities undertaken under the programme of discharging Corporate Social Responsibility. I am glad to inform you that there has been an awakening towards this and business houses and leaders of industry are now coming forward to implement schemes under the said programme. I am sure CSR Mandate will help us in this.

With highest regards,

Yours sincerely,

**Dr. Bireswar Pathak**  
Ph.D., D.Litt.  
Action Sociologist and Social Reformer  
International Expert on Cost-Effective Sanitation,  
Biogas and Rural Development  
Founder - SULABH INTERNATIONAL SOCIAL SERVICE ORGANISATION

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June 19<sup>th</sup> 2017



**Mr. Atula Imchen**  
Executive Editor  
CSR Mandate  
New Media Communication Pvt. Ltd.  
Mansarovar Road  
Andheri (E) - Mumbai

Dear Atula,

Thank you very much for the amazing interview and article published in CSR Mandate magazine on Mumbai Smiles work. Our entire team loved it!

Congratulations for the good work you do through CSR magazine in highlighting the work of organisations like us.

Please keep on bringing information about our common work towards a better world. You play a very important role in this peaceful fight against poverty.

Warm Regards,

Anura Singhania  
Founder and General Director

www.mumbaismiles.org