

# CSR TODAY

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# WHO: Nations step closer to global guides on pandemics, disease outbreak



**Rajesh Tiwari**  
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**Governments agreed on a way forward to update disease outbreak regulations ahead of meetings to draft new global guidelines for tackling pandemics, the World Health Organization (WHO) states**

**T**he two processes are complementary, guided by the imperative of making the world safer from communicable diseases and ensuring equitable responses to public health threats, said Ashley Bloomfield, former Director-General of Health of New Zealand, who co-chairs the working group on updating the 2005 WHO International Health Regulations, which concluded its latest round of discussions on Friday.

"The efforts to update the International Health Regulations and draft a pandemic accord share a number of common themes, including the importance of equity in access to health, collaboration and capacity building," he said. "It is important that there is consistency and alignment across the two processes."

## Facing COVID-19 challenges

A total of 307 amendments to the WHO International Health Regulations came in response to challenges posed by the COVID-19 pandemic. As of Tuesday, WHO reported a total of 757,264,511 confirmed cases, including 6,850,594 deaths, since the start of the pandemic in 2020.

"COVID-19 showed us that having a good, strong set of international health regulations is essential, and showed where the current regulations need to be improved," Dr. Bloomfield said.

During the week-long working group session, he said governments had focused on making their countries, and the international community, better prepared for future emergencies. They also stressed the importance of enhancing capacity building, especially in low-income countries; access to benefits arising from sharing pathogens; equitable access to medical countermeasures; and enhanced cooperation and information sharing.

## Making the world safer


"The ongoing pandemic has underscored the importance of countries working together collaboratively, and supporting WHO in its vital work, to make the world safer," he said. "The tone of the discussions and progress made during this week's meeting clearly show that countries understand the responsibility they have to ensure this process is successful."

Abdullah M. Assiri, Saudi Arabia's Deputy Minister of Health and working group co-chair, said the 194-nation WHO membership is "in the driving seat" of the process of strengthening the current regulations.

"During the pandemic, the world faced the urgent need for functioning international instruments, and placed increasing importance in international organizations, such as WHO," he said. "Updated regulations will enable the world to better detect outbreaks early and prevent them from developing into public health emergencies of international concern. This is about strengthening our collective ability to do that and to better protect everybody." The 2005 regulations had set out agreed approaches and obligations for countries to prepare for, and respond to, disease outbreaks and other acute public health risks. The working group is set to meet again in April to continue discussions.

## New 'pandemic accord'

On Monday, governments will begin negotiating the drafting of a WHO instrument on pandemic prevention, preparedness, and response. Referred to as a pandemic accord, the "zero draft" of the agreement will be the focus of discussions during the week-long session.

Calls for action to draft the accord came following the World Health Assembly's special session in December 2021, in recognition of the failure of the international community in showing solidarity and equity in response to the coronavirus pandemic. 

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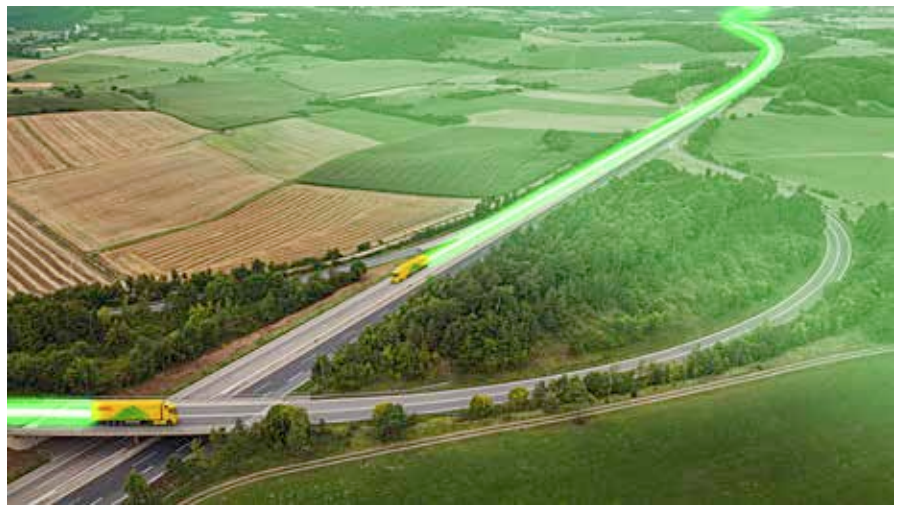


## DHL Express launches GoGreen Plus: First global express courier to give customers the opportunity to use Sustainable Aviation Fuel to reduce emissions

**D**HL Express announced the launch of GoGreen Plus, a new service that will allow customers to reduce ('inset') the carbon emissions associated with their shipments through the use of Sustainable Aviation Fuel (SAF). This is a first for global express carriers, and will initially launch in the UK, shortly followed by Italy, Denmark, Sweden, Canada, Australia, South Africa, and the United Arab Emirates. Starting this month, customers based in these countries will have the option to select GoGreen Plus when choosing their shipping service through MyDHL+, the company's online shipping and tracking platform. The service is designed to be fully flexible as it can be selected for individual shipments.

GoGreen Plus will become available to all DHL Express customers globally over the coming months, with customers being given the chance to tailor the CO<sub>2</sub>e reduction they want to achieve and the amount of SAF they use.

The new GoGreen Plus service is made possible following DHL's recent collaborations with bp and Neste to supply SAF to DHL Express hubs around the world. The renewable part of the innovative fuel is produced from waste oils. Such SAF from wastes and residues can provide greenhouse gas emission reductions of up to 80 percent over its lifecycle compared with the conventional jet fuel it replaces.



John Pearson, CEO DHL Express, says: "We know our customers are committed to reducing their environmental impact so it's important we're giving them the means to do so. I'm delighted that our investment in SAF can now be fully leveraged by customers to enable them to bring down the emissions of their shipments. SAF is currently the primary route to reducing carbon emissions in aviation, so this is the most effective way to help our customers make their own supply chains more sustainable."



Insetting through GoGreen Plus allows customers to bring down their Scope 3 emissions, the indirect greenhouse gas emissions that occur in a company's value chain, including downstream transportation and distribution. Unlike offsetting initiatives, GoGreen Plus (insetting) reduces emissions within the logistics sector and therewith can be used for DHL customers' own voluntary emission reporting and follows the Science Based Target Initiative (SBTi) philosophy.

The GoGreen Plus service is part of Deutsche Post DHL Group's sustainability goal of achieving net-zero emissions by 2050. It contributes to the interim target of using 30 percent SAF for all air transport by 2030. In line with its Sustainability Roadmap, Deutsche Post DHL Group aims to offer a green alternative for all products and services across all divisions.

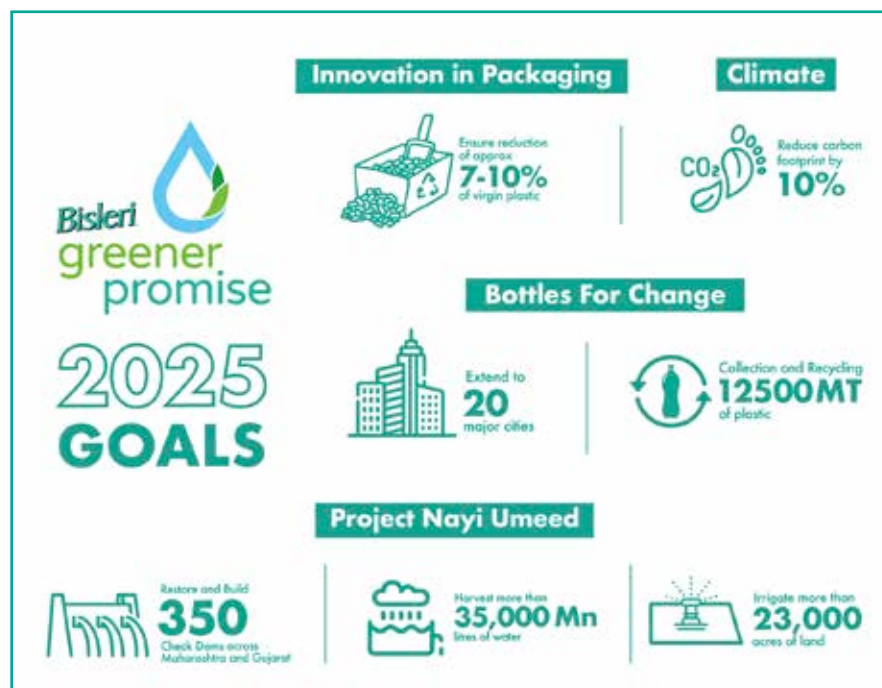
# Bisleri International unveils its 2025 sustainability goals for plastic recycling and water conservation with Bisleri Greener Promise

**B**isleri International Pvt Ltd, India's leading mineral water company, has strengthened its sustainability strategy by launching 'Bisleri Greener Promise.' The sustainability philosophy focuses on creating a greener future by reinforcing and implementing programs in recycling, water conservation and sustainability.

Under the aegis of this philosophy, Bisleri International has become one of the first consumer goods companies to be plastic-neutral and water positive. It further emphasizes its promise to the sustainable development of the country by announcing bold initiatives under plastic recycling and water conservation.

The company has outlined its vision to connect with 20 major cities to collect and recycle 12,500 tonnes of plastic by 2025 through its Bottles For Change initiative. Additionally, it has also announced restoration or building of 350 dams in Maharashtra and Gujarat to provide water security and enhance crop production. Under the initiative, Project Nayi Umeed, more than 35,000 million liters of water will be harvested, and it will help irrigate more than 23,000 acres of land. The company aims to reduce its carbon footprint by 10% and lower the use of virgin plastic by over 7%.

Furthermore, Bisleri International released its sustainability report defining its progress in environment, social, and governance (ESG) practices. The report has been developed by TERI School of Advanced Studies. It highlights Bisleri International's efforts in building a



## Aims to collect 12,500MT of plastic from 20 cities across India through Bottles For Change

## Restore and build 350 Check Dams, providing water security and supporting agriculture

## Reduce carbon footprint by 10%

circular economy, utilizing resources efficiently, reducing GHG emissions, replenishing water, and recollecting packaging material.

Speaking about the organization's commitment towards sustainability and Bisleri Greener Promise, Angelo George, CEO, Bisleri International Pvt Ltd, said, "At Bisleri International, we develop solutions that fuel business growth and, at the same time, address environmental challenges. We are in constant pursuit of creating a positive impact, and continue to integrate our business strategy with sustainability goals. Thus, ensuring that we operate purposefully and responsibly. Innovations in packaging will continue to be our focus for the next three years and we aim to be ready for the guidelines on reuse targets stipulated by the Government."

As part of its commitment to protect the environment and mitigate the effects of irresponsible disposal

of used plastic, Bisleri International's Bottle For Change initiative works towards bringing behavioural change and raising awareness about the importance of post-consumer plastic. Through the programme, Bisleri International has brought a behavioural change amongst 600,000 citizens by organizing sensitization workshops and collection drives. These workshops and drives were conducted at over 3500 housing societies, 680 educational institutions, 790 corporates, and 600 hotels & restaurants across seven cities. The efforts have resulted in collecting and recycling over 4000MT of used plastic. For Project Nayi Umeed,

Bisleri International focuses on building or restoring Check Dams, rainwater harvesting and empowering communities. It provides access to clean water, sanitation, and hygiene, benefiting farmers and their families. Through the programme, it has built or restored over 200 Check Dams in Gujarat and Maharashtra. These Check Dams have helped harvest approximately 22Bn litres of water, covering more than 124 villages and benefiting almost 40,000 family members of farmers. Over 13,000 acres of land have been irrigated through the project, turning barren lands into fertile farms. Also, for every litre of water drawn, eight

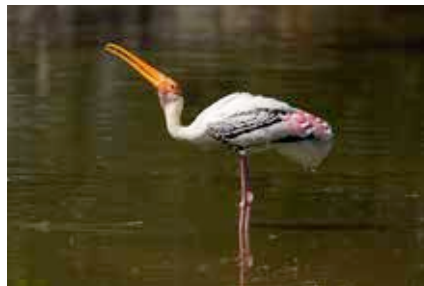
litres of water is replenished from the ground.

"We at TERI School of Advanced Studies believe that resource efficiency and waste management are the keys to smart, sustainable and inclusive development. We work together internally and externally to maximize shared knowledge and impact. Bisleri International Private Limited has been practicing triple bottom line as an approach. We are happy to partner with them to develop their first Sustainability report. Hope this aligns all their stakeholders to their work towards sustainable development," said Dr. Shruti Sharma, Assistant Professor, TERI, SAS

## Migratory Birds flock to TVSM factory in Hosur

**T**VS Motor Company, a reputed manufacturer of two-wheelers and three-wheelers in the world, has always promoted treasuring and protecting biodiversity conservation. This has been the vision of the Chairman Emeritus, Venu Srinivasan, and the company has always taken proactive steps to protect and conserve the natural biodiversity in and around its Hosur factory.

The 50-acre forest at TVS Motor's Hosur factory is a rich green bioscape housing thousands of trees, a Bird Sanctuary, Butterfly Garden, Botanical Park, Organic Compost Centre and 18 ponds. The sanctuary has been one of the largest breeding colonies of the Painted Stork in the area for the past 22 years where these birds nest, raise chicks and then migrate back to their various home areas. All this happens amidst the hectic manufacturing activity taking place in the factory.



During the recent bird census conducted by the Hosur Forest Division on behalf of the Tamil Nadu Forest Department in the Krishnagiri district of Tamil Nadu, more than 100 species of birds were identified in 15 water bodies



with the help of over 50 Volunteers from the Kenneth Anderson Nature Society (KANS). Over 100 species of birds were identified and recorded during this survey, wherein Painted Storks were seen nesting only in the TVS Motor company wetland. To promote interest and studies in nature, visits for school students are also conducted in the factory sanctuary.

The TVS Motor Company values having these avian visitors in their premises and are firm in their resolve to continue to provide sanctuary to these beautiful creatures.



# The/Nudge Prize | Ashirvad Water Challenge announces their Water-Tech Innovation Finalists

**T**he/Nudge Centre for Social Innovation (CSI) and Ashirvad Pipes, in partnership with the Office of the Principal Scientific Adviser to the Government of India, announced the seven finalists of the Ashirvad Water Challenge who were selected from among 25 water innovators. These were shortlisted out of 140 applicants in 2022, whose innovations included solutions to water leakage and distribution, wastewater treatment, water purification, atmospheric generation of water, and even enabling water ecosystems.

Several of these solutions use deep tech interventions such as Artificial Intelligence and Machine Learning and aim to be cost-effective and are potentially scalable to water-stressed households across the nation.

The finalists are Aumsat, i47 Labs, Ossus Bio, Smartterra, and Solinas.

The Ashirvad Water Challenge is a prize worth Rs 2.5 crores. Rs 75 lakhs in milestone grants will be awarded to five of the seven finalists at this stage. These Finalists will now compete for Rs 1.75 crores, awarded to the winning solution and runner-up.

"Inspired and overwhelmed by how the vast ecosystem in water has come to support an audacious idea from The/Nudge Institute, that aims to bring a spotlight and give wings to India's leading water-tech startups", says Kanishka Chatterjee, Director of The/Nudge Prize. "Our advisors and deep thinkers like Prof. Asit K Biswas (World leading Hydrologist, University of Glasgow), Madhavan VK (CEO, WaterAid); the jury members; Jal Jeevan Mission and various

**The/Nudge Institute and Ashirvad Pipes launched the Prize to improve Water Sustainability in India in February 2022 with over 140 applicants**

**The Challenge supports disruptive innovations in solving India's water security crisis, with a potential to scale to serve problems of 19 crore households**

**Selected finalists and semi-finalists ranged from Artificial Intelligence (AI) and Machine Learning (ML) solutions to mechanical and scientific products to community enablement through tech**

**This Prize is in partnership with the Office of the Principal Scientific Adviser to the Government of India, and 20+ allies across investors and academia**

other partners, have provided catalytic attention and efforts for these start-ups to scale their solutions and refine their approaches to solving for India."

"Water security is a major challenge for our country and Ashirvad Pipes is committed to finding sustainable solutions" said Deepak

Mehrotra, Managing Director of Ashirvad Pipes. "We are excited to announce the finalists of the Ashirvad Water Challenge and look forward to supporting their growth in solving India's water crisis. These startups are addressing pressing water challenges faced by the citizens of the country and will inspire several others to take on these issues."

Selection of the finalists from the pool of 25 semi-finalists was spread across two rounds. They were first evaluated by a team of independent evaluators from IIT Jodhpur, headed by Professor Pradip K Tewari, Professor Chair at the Jal Jeevan Mission.

The final selection was led by five jury members - Sunderrajan Krishnan (Executive Director, INREM Foundation), Dr. Sapna Poti (Director - Strategic Alliances, Office of the Principal Scientific Adviser) Mr Yogendra K Singh (Director, Jal Jeevan Mission, Department of Drinking Water and Sanitation), Mala Subramaniam (CEO, Arghyam) and Vishwanath S (Zenrainman; Advisor, Arghyam & Trustee, Biome Environmental Trust). The startups' scalability and replicability, economic feasibility, social outcomes, organizational readiness in terms of business plan and funding, environmental impact and sustainability, and the improvement in quality in the targeted water served as the selection criteria for the jury.

The finalists will now work towards proving their progress on parameters across water management and overall impact in the space. They will address the biggest challenges identified in their journey to scale, and address them



through a strategic plan or action on the ground.

Prior to the final selection, the 25 semi-finalists piloted their projects for six months, began user-testing, expanded their solution presence across various locations and understood the scalability potential and impact of their innovations.

They also had the opportunity to receive mentorship from IHE Delft and present their technologies to the innovation and program teams at WaterAid & INREM Foundation. Twelve of them met and received personal feedback from Yogendra Kumar Singh, Director, Jal Jeevan Mission-VI, Department of Drinking

Water and Sanitation. Many of them also received recognition, grants, and mentorship opportunities from investors and foundations alike. For example, one of the semi-finalists Solinas raised Rs 90 lakh on Shark Tank India and another Urdhvam was recognized as a TGS100 emerging startup by TiE Global.

## Columbia Pacific Communities Publishes “The Little Book of Greatness”: A Book Outlining the Six Pillars of “Positive Ageing”

Columbia Pacific Communities (CPC), India's largest and the most preferred operator of senior living communities, honours the spirit and principle of positive ageing, by launching a book titled ‘The Little Book of Greatness’. This unique book has been carefully curated to feature six senior citizens who have led and continue to lead extraordinary lives by embracing the six principles of ‘positive ageing,’ which is the core philosophy of CPC.

The purpose of the book is to popularise and increase awareness about the concept of positive ageing, which is a simple idea that enables seniors to age positively and assists them in leading longer, healthier, happier, more connected lives. Physical Fitness, Mental Wellbeing, Emotional Soundness, Nutritional Enhancement, Intellectual Prowess, and Spiritual Enlightenment are the six pillars of positive ageing that the book highlights. The book is divided into six sections, each of which represents a different pillar of positive ageing. Each section chronicles the life of a senior who is an emblem of the said pillar and describes how they lead an exemplary and spirited life. Ad Guru Prahlad Kakkar (72), Masterchef Tamil finalist Senguttuvan Subburathina (73), veteran journalist and author Bachi Karkaria (77), potli maker Latika Chakravorti (92), centenarian Sarathy (101), and spiritual devotee John Lazaro (75) are the six seniors who share their incredible life stories and philosophies in the book.

**The book's objective is to popularise and raise awareness about the concept of positive ageing**

**Six distinguished senior citizens embodying the six pillars of positive ageing illustrate the principles**

Speaking on the launch, Mohit Nirula, Chief Executive Officer, Columbia Pacific Communities said, “This book details the experiences of inspiring individuals who have managed to decipher what it means to lead a full, happy, and content life with countless opportunities at every turn. I'm thrilled to be launching this book that perfectly embodies what Columbia Pacific Communities (CPC) stands for, which is to inspire and empower people to live better lives by embracing positive ageing in their lifestyles, whether or not they are seniors. The fascinating true stories in this book provide some excellent life lessons, lessons that encourage one to live a more fulfilling life.”

Dr Karthiyayini Mahadevan, Head of Wellness and Wellbeing at Columbia Pacific Communities, said, “The six pillars of positive ageing, which have been defined from a medical perspective, are physical fitness, mental wellbeing, emotional soundness, nutritional

enhancement, intellectual prowess, and spiritual enlightenment. You can discover the inspiring lives of several notable seniors in the pages of this small book, including one of the most respected men in advertising in the nation who attributes his success to emotional intelligence, a veteran journalist and author with a keen intellect, a Master Chef who wants to change the way people eat, a centenarian who finds happiness and comfort in walking, a woman who reinvented herself in her 90s, and a devoutly spiritual golden ager who bravely fought life's most difficult battles. Each one is an intriguing story of ardour, commitment, tenacity, and delight.”

Speaking on the launch, Bachi Karkaria, Indian journalist and columnist said, “It is always a pleasure working for Columbia Pacific Communities if only in my limited capacity as a journalist. I would like to thank the team for making me a part of this so-needed project for seniors. I love their sensitivity and professionalism. I wish the project the very best.”

The book is accessible to prospects, residents, future residents of Columbia Pacific Communities, partners of the company and anybody else who would like to understand the principles of ageing positively better. The e-version of the book will be available on CPC's website and can be accessed through <https://www.columbiacommunities.in/little-book-of-greatness/>.

# Vidya Balan launches SEEDS, a unique Cancer prevention initiative, by Sir HN Reliance Foundation Hospital on World Cancer Day

*Dr Vijay Haribhakti, leading oncologists along with a panel of experts address the need and steps to curb cancer*

**S**ir HN Reliance Foundation Hospital (HN RFH) announced the launch of SEEDS, a unique initiative aimed at increasing awareness that helps prevent cancer and also encourages early diagnosis. Padma Shri Vidya Balan alongside leading international cancer expert and Director Onco-sciences, HN RFH, Dr Vijay Haribhakti, launched this initiative in the presence of the CEO of HN RFH, Dr Tarang Gianchandani and Mrs Priya Datt, Chairperson, Nargis Dutt Foundation. “SEEDS” is a mnemonic for Shun Tobacco, Eat Correctly, Exercise Regularly, Dump obesity and excess alcohol, and Stay vigilant about your family history aims at making more and more people aware about the tenets of cancer prevention.

To discuss the various challenges and solutions to curtail cancer, a distinguished panel including leading experts and stakeholders was conducted. Moderated by Dr Sewanti Limaye, Director, Medical & Precision Oncology and Oncology Research the panel included Mrs. Priya Dutt, Chairperson, Nargis Dutt Foundation, Dr. Jagmeet Madan, National President, Indian Dietetic Association, Dr. Aashish Contractor, Director Rehab, HN RFH, Dr. Avinash D’Souza, Consultant Psychiatrist, HN RFH, and Dr. Vijay Haribhakti. The panel discussion was centred



on ‘Prevent Cancer, Preserve Life’. Each expert shed light on different aspects of Cancer Prevention. It was an interactive and informative session that focused on solutions.

Speaking on the motivation behind this mission, Dr Vijay Haribhakti pointed out, “The current focus of most stakeholders remains on treatment of cancer. While precision oncology and advancement in treatment will continue to remain crucial, we can do much more by nipping the disease in the bud. Tobacco alone is responsible for 50% of cancer incidence. Similarly, there are other measures which can help prevent cancer. Also, awareness can help early diagnosis which can play a huge role in complete recovery of patients.”

Padma Shri Vidya Balan said, “Someone very close to me was recently diagnosed with cancer. I want to thank Sir HN Reliance Foundation

Hospital and the entire team of doctors who have been instrumental in helping us at a critical time like this. The doctor told us that cancer is preventable and I wish we all do tests from time to time to make sure we are keeping cancer at bay.”

Dr. Tarang Gianchandani, CEO, Sir HN Reliance Foundation Hospital said, “Cancers have a tip of the iceberg phenomenon, where most often, the symptoms of cancer may not be obvious or present until the disease has progressed, affecting the Quality of Life. While the focus worldwide is on treatment, ours is on prevention ahead of treatment. Therefore we at Sir HN Reliance are dedicated to offer means to prevent Cancer. We as an institution want to bridge the gap and follow the approach that meets the objective of early identification amongst ‘at risk’ individuals through preventive strategies.

## Apollo Foundation and AP Forest Department Join Forces to Plant 90,000 Trees on the Occasion of Dr. Prathap C. Reddy's 90th Birthday

The Apollo Hospitals Foundation and the Andhra Pradesh Forest Department have partnered to plant 90,000 trees across the state, as part of Founder Chairman Apollo Hospitals Group Dr Prathap C Reddy's 90th Birthday Celebrations. The initiative aims to reduce carbon emissions, preserve wildlife habitats, and improve air quality for local communities.

Dr. Prathap C. Reddy, Chairman of Apollo Hospitals Group, said, "This initiative is a step towards mitigating the impact of climate change and ensuring a sustainable future."

Upasana Kamineni Konidela, Vice Chairperson of Apollo Hospitals' CSR, added, "We are grateful for the opportunity to celebrate our Chairmans 90th Birthday with a meaningful contribution to a greener future." The Forest Department will provide saplings native to the region, and Apollo Foundation will manage plantation and maintenance.

The plantation drive will use Miyawaki forest models to bring back native trees of the region and monitor survival rates through geo-tagging of each plant. The initiative is expected to have a significant impact on the environment and aligns with the Foundation's commitment to environmental sustainability.

The 90,000 trees are being planted across Aragonda to offset the Apollo Hospitals Groups Carbon Footprint by 3800 Tonnes further strengthening their position as a futuristic leader in the healthcare industry. This project aligns with Apollo Foundations' long-standing commitment to environmental sustainability. The company remains dedicated to reducing its carbon footprint and promoting a greener future for a healthier tomorrow.



Upasana Kamineni Konidela with AP forest dept official

## Dia Mirza and Bhumi Pednekar Spread Awareness About Making Environmentally-Conscious Shopping Decisions on 'Flipkart Green'

Known for her contribution towards environmental sustainability and wildlife conservation, Dia Mirza has recently posted about the 'Flipkart Green' e-store on her Instagram, spreading awareness about the importance of making environmentally-conscious shopping decisions.

Bhumi Pednekar, who is also a strong advocate for action against climate change, has been spreading the word about 'Flipkart Green'.

Flipkart, India's homegrown e-commerce marketplace, introduced 'Flipkart Green', a dedicated virtual store on its app, bringing together lakhs of sustainable products to cater to customers looking to adopt a sustainable lifestyle. With over 40 brands and counting and more than 30,000 sustainable products, 'Flipkart Green' will be a dedicated section on the Flipkart platform, for globally certified sustainable products from categories such as beauty and makeup, grooming, healthcare, food, home decor, sports, fashion and more. Through this introduction, the platform aspires to bring about a positive impact and create a shared value for the community and the planet.

Bhumi Pednekar, who is also a strong advocate for action against climate change, has been spreading the word about 'Flipkart Green'.

Bhumi has worked with other climate change activists and constantly leverages her reach to build awareness around climate related issues, sensitizing people to switch to responsible lifestyle choices.



# MeitY & Kyndryl collaborate to launch cybersecurity training initiative for women empowerment

**C**ommon Services Centres (CSC), under the Ministry of Electronics & IT, and Kyndryl (NYSE: KD), the world's largest IT infrastructure services provider, have partnered to launch Cyber Rakshak, a cybersecurity training initiative to equip women in rural and remote areas with new technology skills and help them emerge as Cyber Security Ambassadors.

The initiative is part of Kyndryl's and CSC's commitment to invest in bold ideas that fuel prosperity and support equitable access to technology-enabled education. Over the course of three years, the program will train more than 100,000 women in rural and remote areas, driving cybersecurity education efforts and growing skillsets across Indian communities. The initiative aims to empower future leaders while extending economic opportunity to women in the world's fastest growing economy.

Training will be conducted across 500 districts in India through the last mile network of CSC, a flagship program under the Digital India Initiative which provides assisted access to government and public utility services in rural and semi urban areas.

The coursework, co-developed by Kyndryl and CSC, will enable participants to better address cybersecurity threats in their personal and professional work while spotlighting career opportunities in cybersecurity fields. Participants will gain fundamental cyber knowledge, enhance competencies in existing job roles and learn about security threats that may impact their livelihoods. A central feature of the program will



Sanjay Kumar Rakesh, MD, CSC SPV with Martin Schroeter, Chairman and CEO, Kyndryl at the inauguration of Cyber Rakshak program

be to train candidates to become Cybersecurity Ambassadors, individuals who upon program completion will achieve a joint certification from Kyndryl and the National Institute of Electronics and Information Technology (NIELIT) and can serve as guides to local Internet users as they navigate an increasingly complex threat landscape.

"Internet users in rural areas of India are increasing, which has the opportunity to bring positive outcomes and new opportunities. However, citizens with small businesses are at risk of suffering irrecoverable damage from data breaches if they don't have adequate cybersecurity knowledge," said Sanjay Kumar Rakesh, MD, CSC SPV. "This program with Kyndryl, which will establish local cybersecurity ambassadors who are continuously trained and supported, can be one of the most effective ways to address such challenges. It will create

awareness and empower rural people to address emerging cybersecurity challenges."

"The Cyber Rakshak initiative is part of Kyndryl's commitment to India's broader socioeconomic development, particularly for financial inclusion and building diversity in India's tech talent pool," said Lingraju Sawkar, President, Kyndryl India. "The cybersecurity landscape is more complicated by the day, and everyone needs the necessary tools and knowledge to better protect their data and improve their security posture. These are also important technical skills women professionals can bring to high-value career opportunities."

The Cyber Rakshak initiative promotes and supports the Indian government's efforts to expand financial inclusion for women of underbanked regions and recognize women as a major driver of India's economic growth.



# Infosys Foundation Collaborates with Health Department of Karnataka to Advance Maternal and Child Healthcare

**I**nfosys Foundation, the philanthropic and CSR arm of Infosys, announced the inauguration of a 100-bed maternity and child care hospital in Kanakapura Taluk, Ramanagara District of Karnataka in collaboration with the Directorate of Health and Family Welfare Services, Karnataka.

Through this collaboration, the erstwhile Government Maternity Hospital in Kanakapura Taluk has been rebuilt and the new hospital has facilities including oxygen and medical gas pipelines, a sophisticated fire protection alarm system, meticulously designed electrical and plumbing work, an HVAC system and underground water reservoir.

This initiative aims to provide quality maternity and childcare to help the underprivileged, advancing the Foundation's commitment towards rural development, and to provide better health infrastructure for the benefit of the society. Previously, Infosys Foundation launched the Shree Sharadadevi Mobile Eye Hospital, a first-of-its-kind fully equipped mobile eye hospital to serve people residing in remote villages in Karnataka. The initiative was aimed at providing quality eye care to over 5 lakh people, including children and students, in collaboration with Sri Ramakrishna Sevashrama. The Foundation also supported the development of a new 350-bed hospital block, 'Infosys Foundation Block', within the Jayadeva Hospital premises, in Bengaluru, to provide quality cardiac care for underprivileged patients.



"We acknowledge the support of Infosys Foundation in developing the overall healthcare infrastructure of Karnataka. This initiative will not only address the medical needs of new mothers and their children but will also provide continued support in ensuring that they have access to affordable, quality healthcare", said, Dr. K. Sudhakar, Health Minister, Government of Karnataka.

"Infosys Foundation's efforts towards rural development and healthcare infrastructure for the people of Karnataka is unparalleled. This new Maternity and Child Care Hospital for the people in Kanakapura, especially for underprivileged women, is a testament to the generosity of the organization. This hospital will be able to provide accessible and quality healthcare to

lakhs of people in need," said, D. K. Shivakumar, MLA, Kanakapura Constituency.

Sunil Kumar Dhareshwar, Trustee, Infosys Foundation, said, "Given the maternal health indicators in our country, Infosys Foundation has been working for years towards supporting the needs of the community and the state. To address the multi-fold increase in the number of women patients from the surrounding villages in the Kanakapura Taluk, we were able to establish this hospital in a timely manner through our valued association with the Health Department of Karnataka. We are grateful to be able to give back to the community and take another step forward towards improving healthcare in our country."

# Josh foundation shows a heartened approach toward hearing-impaired children

*The competition was judged by Actor, Darsheel Safary, Bollywood choreographers Kunjan Jani, Bhaumikk Shah, and Jainil Mehta*

Dance is a language that speaks directly to the soul, without even needing to utter a single word. Josh foundation being one of the leading NGOs working with hearing-impaired children had taken an initiative to uplift their morale by organizing a dance competition under the umbrella of the “Azadi Ki Amrit Mahotsav” mantra. This event is supported by Dynacons, event partners were AMC and Kshitij. Many children who are underprivileged and have already been a part of Josh Foundation's hearing-aid distribution participated in this competition to showcase their talent and the winners were awarded a cash prize to commemorate their victory.

Josh foundation has also supported over 1600+ hearing-impaired underprivileged children and is constantly coming up with new strategies to give these children the best technology and support so they can have a bright and successful future. The Chief Guest of the event was Jaaved Jaaferi, and during the prize distribution, he said, “It was a very humbling experience looking at how dance has united these kids. I’m really honored to have been getting this opportunity today to experience this in person. Thank you Josh foundation for organizing such a wonderful event.” When asked Actor and Judge Darsheel Safary about



Lighting of a lamp by Chief guests at Josh Foundation dance Competition



Jainil Mehta and Darsheel Safary with Hearing impaired children at Josh dance competition

his experience, he said “Dance has always been an integral part of my life, and looking at the passion and dedication these kids were dancing and doing aerobatic stunts, makes me quite hopeful that dance as a career has a great future through them. Josh Foundation has been doing impeccable work and I look forward to coming to more events and showing my support to the cause.”

When asked Founder-Turster, Dr. Jayant Gandhi to share a little about the work done by Josh Foundation, he mentioned, “Josh Foundation has

been working with under-privilege hearing impaired children and till date have donated more than 1600+ hearing aids with help of our donors and patrons. We are working towards a mission that is to eradicate hearing impairment and spread awareness of screening the child right when they are born.

When asked to share some light on how are the winners going to be awarded? Ms. Devangi Dalal, the Founder-Turster of the Josh Foundation says “The real motive behind organizing this dance





Dance Performance by Hearing aid Children at Josh Dance Competition



Dr. Devangi Dalal felicitating Actor, Chief Guest Jaaved Jaafri at Josh Dance Competition

competition was to help these children enroll in some creative activity and boost up their self-confidence. Our primary focus is always to support, encourage and empower these kids. Our kindness is only beautiful

when we make these specially abled children equally inclusive in our society". The competition was judged by Celebrity Actors, Jaaved Jaafari and Darsheel Safary, and Bollywood choreographers, Kunjan

Jani, Bhaumikk Shah, and Jainil Mehta. Winners of the event were honored with the trophy and Prizes respectively. Each participant was awarded a certificate and individual prizes.

## FORM IV

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I, Rajesh Tiwari, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Dated: March 1, 2023

Sd/-  
(Signature of publisher)

# IndiGo and British Council collaborate to support cultural tourism

IndiGo, India's leading domestic carrier, and British Council, the UK's international organisation for cultural relations and educational opportunities, launched a joint collaboration towards promoting cultural tourism to India's arts and culture festivals. The collaboration will support events and festivals that are a part of the ongoing India/UK Together, a Season of Culture and highlight festivals happening through the year across the country.

IndiGo leads by example when it comes to connecting people to places, facilitating travel and connection across 77 domestic and 26 international destinations, for over 16 years. With this collaboration, IndiGo aims to create a socio-cultural cohesion, while also reaching a new audience database, taking its own initiative of India by IndiGo – a campaign that highlights and promotes various cultures across India – to an extensive level.

The Season of Culture, curated by the British Council, is a landmark programme that celebrates the friendship between India and the UK. As part of the Season of Culture 1,400 artists from both countries are currently showcasing their co-created assets in the field of dance, music, theatre, photography and other art forms, across India.

The collaboration will connect a larger number of Indian audiences with these global arts showcases through digital cross promotion across 'Festivals from India', a unique UK-India initiative that showcases India's cultural festivals and connections with UK festivals and artists, and IndiGo's communication channels.

The two entities will collaborate with the innovative Festivals from India digital platform, developed

## Collaboration aims to promote and support cultural events and exchange between India and the UK with Festivals from India

### IndiGo joins the ongoing 'India/UK Together, Season of Culture'

by ArtBramha and made possible by the British Council, will power IndiGo's cultural festivals pages with specially curated content and editorial on the homepage of the website, alongside monthly features and highlights in the Hello 6E in-flight magazine for passengers on IndiGo's 1800+ daily flights across the world.

Arts and culture festivals have a unique way of taking over a city and bringing people together. From leading artists to culture 'vultures', across destinations in India and the UK – whether it's in the desert of Rajasthan, the mountainsides at Ziro, the city squares of Bangalore, or the sports stadiums in Delhi – festivals create a space of dynamism and inclusion through performance and participation. It is perhaps no wonder that such festivals are engrained into the DNA of India and are the lifeblood of its creative economy for cultural tourists who set their hearts on destinations across the country. This new collaboration between the British Council and IndiGo will take national and international visitors to new destination to discover India and UK collaborations and arts festivals across India

They also plan to build exclusive cultural programmes, and together, they hope to build new audiences for the arts and culture festival sector, both online and offline, by promoting cultural tourism.

Alison Barrett MBE, Director India, British Council, said, "India's art and culture offerings are globally loved by people across the world. The India/UK Together Season of Culture and its cultural showcases are attracting art lovers to all parts of the country. We are proud to partner with IndiGo and to be able to access their vast coverage of Indian cities to allow more and more Indians to visit the collaborations being put together by some of the most exciting emerging artists from India and the UK."

Neetan Chopra, Chief Digital & Information Officer, IndiGo, said, "This is a unique partnership that builds not just on the cultural richness of India; but also brings together people through a platform that can unite people across countries, through art, culture and festival. Through this collaboration, we aim to celebrate the power of culture and connection. We are delighted to partner with British Council in jointly celebrating India's unique heritage and talent."

Rashmi Dhanwani, Partner, ArtBrahma, said, "Festivals From India aims to be a window to India's dynamic cultural festival universe – arts lovers, festival goers and creative professionals can use the platform as one-stop shop to look for India's best cultural festivals. This partnership between British Council and IndiGo, of which [www.festivalsfromindia.com](http://www.festivalsfromindia.com) is a vital part, enables us to further bolster the opportunities for showcasing the cultural jewels of India."



## Regulator push sees 160% increase in ESG disclosures: CareEdge

CareEdge Research has come up with a new study which suggests that Environmental, Social, and Governance (ESG) reporting by Indian corporates has improved by 160%. The research is an analysis of reports from top 1,000 listed entities over the past three fiscal years. A stark improvement in the ESG disclosures by companies was noted based on their Integrated Reports, Sustainability Reports, and Business Responsibility and Sustainability Reports (BRSR). This further led to an upgrade in the ESG scores of these companies.

The improvement is a result of SEBI pushing for ESG disclosures, which has witnessed a number of companies putting up ESG data increase from a meagre 127 in fiscal 2020 to 330 in fiscal 2022. SEBI's circular makes it mandatory for target companies to disclose sustainability data for FY23 onwards. In fact, 18% of the target companies voluntarily disclosed the BRSR data in FY22.

The Energy and Utilities sector saw close to 50% companies reporting on ESG parameters. While Service sector entities have traditionally been robust in disclosing ESG data, the rising awareness among financial institutions in adopting ESG practices in their operations has further led to 41% of the companies in the last 3 fiscals reporting ESG data.

Even as the aggregate score for the top 1,000 listed companies still hovers in the "Average" grade category, companies who have been disclosing ESG data have seen their scores improve by almost 15% over the past three fiscal years.

Companies in the Materials sector have shown noteworthy improvement with the average ESG performance improving by ~ 20% in the last three fiscal years. This highlights how heavy emitting industries such as Steel, Cement, and Mining are gradually adopting green initiatives to align with their long-term ESG goals. The Utilities & Energy sector, too, has witnessed notable improvement, signalling the transition of the sector towards long term ESG commitments along with a visible shift towards green energy resources. This also aligns with the government's push on India's own commitment to achieve Net Zero emissions by 2070.

Mehul Pandya, MD & CEO, CareEdge said, "As reflected in CareEdge's latest study, there has been a substantial jump of 160% in ESG reporting from FY20 to FY22 by Indian corporates, which is quite encouraging. Not only does this align with the Indian government's focus on Green Growth emphasised in the latest Union Budget, but it also aids the country's commitment towards achieving Net Zero by 2070. With market regulator SEBI's circular on Business Responsibility and Sustainability Reports making ESG disclosures mandatory from FY23 for the top 1,000 listed entities, I believe there will be a further boost for Indian corporates to transition towards sustainable practices."

## Choice International launches CSR initiatives to provide free, high-quality education in vernacular language

Choice International Ltd, one of India's leading financial conglomerates, launches a CSR initiative program to provide high quality education free of cost.

As part of the initiative, the company has assembled over 4500+ top-notch videos on its educational YouTube channel, put together by a team of educational professionals from IITs and NITs.

This initiative caters to students from all over the country, enabling free, high-quality education in vernacular language and covering a wide range of age groups and significant competitive exams.

The initiative embodies Choice's commitment to offering a sincere contribution to society and bridging the gap between rural and urban in the areas of education, awareness, and skill development. The curriculum is offered in Hindi and English languages to make it easier for students across the nation to assimilate the course material. Topics range from the curriculum of higher secondary education to the major competitive examinations like NEET, NTSE, Olympiad, KVPY, and JEE. Other benefits of this effort may include lowering the rate of student migration to distant locations for quality education.

The Sunil Patodia Welfare Foundation is honored to be associated with this initiative and sees it as a major step forward in promoting access to education and building a better future for our children.

On the association, Kamal Poddar, Managing Director, CIL, stated, "Our commitment at Choice International Ltd. lies in creating value and financial independence for society. A strong foundation for this can be pillared only on quality education that is easily accessible. The thought process behind this platform is to build a solution that can help in strengthening students' foundation right from the beginning of their elementary education and in turn, help them in achieving success by securing deserving job opportunities"

## Tata Motors delivers 218 Winger veterinary vans to the Government of West Bengal

*The feature-rich, customised Winger will be used by the Department of Animal Resource Development, Government of West Bengal*

**T**ata Motors, India's leading commercial vehicle manufacturer, announced the delivery of 218 Winger veterinary vans to the Government of West Bengal. The vehicles were flagged off by the Chief

Minister of West Bengal, Mamata Banerjee, and Minister of Animal Resources Development, Swapan Deb Nath, along with delegates from the Government of West Bengal, Department of Animal Husbandry &

Veterinary Services and Tata Motors. The specially customised Tata Winger will be utilised by the Department of Animal Resource Development for animal and live-stock welfare. Tata Motors emerged as the top bidder, as per the terms and conditions of the Government body and delivered the fleet of fully-built Winger veterinary vans equipped with state-of-the-art features. The e-bidding process was carried out through the Government e-Marketplace.

Commenting on the occasion, Vinay Pathak, Vice President, Product Line – SCV, PU and Vans, Tata Motors, said, "With Tata Motors' firm commitment towards enabling improved animal health-care mobility, we are elated to deliver 218 Winger veterinary vans to the Government of West Bengal. We are happy to associate with the Government's vision of providing veterinary services across the state. Built on Tata Winger's versatile platform, the veterinary van is engineered to facilitate smooth operations in the state."

The Tata Winger is powered by the 2.2-litre engine with improved torque and better fuel economy. It also offers an ECO switch and Gear Shift Advisor that helps in increasing the fuel efficiency. Additionally, the Winger's independent front suspension with anti-roll bars and hydraulic shock absorbers assure a smooth ride, as does its mono-coque body design, which enables car-like driving dynamics and low levels of noise, vibration, and harshness (NVH).



# Fullerton India treats over 71,400+ cattle in their 5th edition of Pashu Vikas Day, the country's largest cattle care programme

**F**eatured in 2015 Limca Book of Records as Largest Single Day Cattle Care Camp in India, in 2018 as the World's Largest Single Day Cattle Care Camp by Best of India Records, and in 2019 as the Largest Camp of Cattle Care Camp by World Books of Records

One of India's leading NBFCs - Fullerton India organised one of the largest on-ground cattle care awareness drives through its annual Pashu Vikas Day (PVD) wherein the camps were simultaneously held at 374 locations, covering more than 500 villages in 15 states across India.

The 2023 drive positively impacted 71,400+ cattle and 20,400+ cattle owners across nationwide healthcare camps. Over the years, Fullerton India has helped provide cattle owners with the necessary cattle healthcare facilities and guidance so that they can improve the productivity of their cattle and enhance their household income. The Pashu Vikas Day till date has treated more than 2,71,000+ cattle, and more than 80,000 cattle owners have benefitted.

Highlighting the company's unique initiative, Shantanu Mitra, Chief Executive Officer and Managing Director, Fullerton India, said, "At Fullerton India we enable inclusive financial growth across the underserved communities and this philosophy brings us closer to our customers, assists them in fulfilling their financial needs and helps in the overall advancement of society. Our community development programs focus on improvement of livelihood among rural communities - to enhance their quality of life and boost their income streams. As cattle



Extreme Right-Swaminathan Subramanian, Chief People Officer, Fullerton India



Deepak Patkar- CEO, Fullerton India Home Finance Company



Ajay Pareek- Chief Business Officer, Fullerton India

is essential for those living in the hinterland, we conduct Pashu Vikas Day annually to focus on providing cattle healthcare facilities to not just our customers, but the farmer communities at large, enhancing social value. This effort has seen cattle-owners improve the productivity of their cattle and increase their household income, driving positive social impact."

The camp offered services like free cattle check-up by veterinary doctors, distribution of free medicine and vaccinations for cattle and advice on increasing the yield for milch animals. Fullerton India also organised free health check-up camps for the cattle owners across 245 locations from 4th to 11th Feb,

2023 benefiting the people from rural communities.

The company launched its first Pashu Vikas Day in 2014 as a single day cattle-care camp across various pan-India locations, wherein company employees connected with the rural community to help them take care of their cattle. Commenting on Pashu Vikas Day, Swaminathan Subramanian, Chief People Officer at Fullerton India, stated, "Many farmers in India's rural heartlands are dependent on cattle rearing for their income and through our annual Pashu Vikas Day programme, we aim to empower this community by providing them a networking platform along with access to quality cattle healthcare. This gave an opportunity for our employees to volunteer for a cause and give back to the society."

After its launch in 2014, Pashu Vikas Day was held in 2015, 2018, 2019 and 2023. Fullerton India was featured in the 2015 Limca Book of Records as the Largest Single Day Cattle Care Camp organised across India, in 2018 as the World's Largest Single Day Cattle Care Camp by Best of India Records, and in 2019 as the Largest Camp of Cattle Care Camp by World Books of Records.



# Birla Cellulose conducts 1500 seminars and engages with thousands of handloom artists to help revive the industry

*This pan-India initiative is focused on helping the Handloom Textile Value Chain*

To create awareness and to preserve a precious art like handloom weaving; the Aditya Birla Group - Birla Cellulose, in association with regional partners, has started a drive to create awareness about a natural, sustainable & durable alternative by introducing the weaver community to fibers like Viscose, Modal, and Excel, which are relatively price stable.

With its versatile R&D center continuously engaged in developing new yarns & fabrics with their regional partners, Birla Cellulose has helped commercial bulk fabric manufacturers develop new bases for printing with the latest, in-demand yarns or changing the weaving patterns. As a way to promote Vocal for Local, the Liva team has assisted printers in connecting with grey base manufacturers to avail quality fabric at the right price. Taking a step beyond pre-production, they also extend their support during the post-production requirements like tagging, online & offline market connect, roadshows and door-to-door promotions. Thus, helping businesses increase inquiry leads. Till date Birla Cellulose has trained 1500 artists, across 7 states and supplied 5.5 lakh of yarn annually.

Given that the cost of silk yarn is often exorbitant and out of



reach for the public market, Birla Cellulose has blended silk fabric manages to preserve the luxurious feel of pure silk while being competitively priced. Modal-made products have a lustrous shine, brilliant color, and luxuriously soft feel reminiscent of silk. Birla Cellulose's brand, Liva, nurtures the Indian textile value chain contributing to a more sustainably produced fiber that also resolves the breakage issue these weavers face with traditional threads.

Furthermore, with their robust supply chain supported by regional partners, Birla Cellulose ensures timely and consistent delivery of quality yarn that meets all of their customer's needs, helping boost the weaver's production capacity. As a part of this initiative, the Liva team also helps prepare the handloom

weaving community for the future by holding seminars and hub meetings that guide these weavers. This initiative would not only help revive this industry but also assist with its expansion leading to the realization of the Make in India vision for the handloom sector.

The Indian handloom textile industry has a very rich heritage dating back to many centuries. Today, the handloom textile industry plays an important role in many communities, providing employment and preserving cultural heritage. However, with the introduction of mechanized textile manufacturing during the British era, this once revered industry has been facing significant challenges. Some prominent ones being, competition from synthetic fibers, limitations of traditional fibers, lack of investment, large unorganized markets with dependency on middlemen, limited access to domestic and international markets for selling, and labor issues.

Priyanka Priyadarshini- Assistant Vice President, Business Development, Birla Cellulose, said, "This largely unorganized industry is seeing a decrease in the weaver community as the younger generation of weavers are migrating to other occupations due to lower income and instable work. The handloom industry also relies vastly on material that goes through a lot of price fluctuations. The Indian government has actively issued schemes and incentives with this initiative we plan on reviving the handloom industry to preserve India's cultural heritage and bring it to the 21st Century."



# Sachin Tendulkar and Schneider Electric India's nonprofit venture provides access to digital education to students in rural India

**W**ith an aim to empower young students, Spreading Happiness InDiya Foundation (SHIF), a non-profit collaboration between cricketing icon Sachin Ramesh Tendulkar and Schneider Electric India is on a mission to provide access to digital education in more than 150 Rural Indian schools by 2025 under the SMITA Program. Through this association, they also aim to introduce the concept of Digi Green wherein they will provide access to digital education infrastructure powered by solar energy and create awareness among the children of the country about the conservation of energy and the environment.

The world is at the cusp of unfathomable risk due to the effects of climate change. Thus, it is critical that sustainable solutions are adopted at every step of the way, be it at a corporate level or at an individual scale. This requires a shift in mindset and an acknowledgment of our current times that is massively impacted by the ongoing climate crisis. Addressing two issues with a single solution, Spreading Happiness InDiya Foundation has come up with an innovative concept of solar-powered "Digi Green" classrooms that use the latest technologies to conduct virtual training for students. Through this seamless combination of solar energy and technology, the "Digi Green" classrooms are eco-forward and help save money for schools in terms of running costs, while also providing virtual training modes to optimize learning outcomes. Since these classrooms are run completely on solar power, it has a 'net-zero' carbon footprint,

**The aim of this association is to set up Digi Green Classrooms powered by Clean Solar Energy**

**Creation of Change Agents for the future by making students 'Green Ambassadors'**

**Successfully provided access to digital education to more than 14,000 students across 81 Rural Schools so far**

further enabling the schools to earn carbon credits.

Sharing his thoughts on the Digi Green program, Sachin Tendulkar said, "Our goal through Spreading Happiness InDiya Foundation is to provide access to digital education to students in rural schools while creating awareness among them on the absolute need to build a 'sustainable future'. This initiative is our contribution towards helping create a better world through responsible, aware, and active citizens of the future. Through Digi Green, we are leveraging the power of digital technologies to bring parity amongst rural and urban students in terms of access to modern means of education."

To date, SHIF has supported 14,593 students from 81 schools across 6 districts in Uttarakhand, Gujarat, Tamil Nadu, Maharashtra, and Karnataka under the SMITA program. In FY 22-23, the foundation plans to implement this initiative and set up Digi Green classrooms in

35 Rural Government Schools across different states of India benefiting more than 8,000 students.

Access to quality education is the main driver for the development of society. Emphasizing the need to develop modern education infrastructure, Anil Chaudhry, Zone President, India and CEO & MD, Schneider Electric India Pvt. Ltd., said, "We believe that access to energy and digital is a basic human right. It is imperative for all of us to come together to create a meaningful impact on the lives of the children by creating awareness about the conservation of energy and the environment. Through our collaboration with Spreading Happiness, we have created equal opportunities for children, even in remote areas, by providing an advanced learning infrastructure through Digi Green, powered by clean solar energy. We are delighted to be a part of this initiative with Mr. Sachin Ramesh Tendulkar to prepare and sensitize our next generation on climate change and sustainability."

Under the Digi Green Program, students are also provided with an interactive learning program on Environment and Energy conservation wherein they are not only made aware of the judicious utilization of resources but are also made 'Green Ambassadors' to take the cause forward in society. Students and Teachers have been trained on various Environment & Energy Conservation topics through interactive sessions, ultimately making them Green Ambassadors. To further the cause of sustainability, more than 8000 saplings have been planted by the students.

## India Inc. needs 30 million digitally skilled professionals by 2026 – TeamLease

**As over 50% employees need to reskill themselves, a robust skill development strategy will be instrumental for India Inc.'s strong bottom line growth this fiscal**

**T**eamLease Degree Apprenticeship, India's fastest growing apprenticeship program, from the TeamLease Services group, has released a niche report for CHROs on 'Skills Strategies for a Strong, Sustainable and Balanced World of Work.' The report, which analyses the current market sentiment, highlights a varied range of effective skill strategies that can help organizations assess and augment their existing skill-development programmes to improve productivity, revenue and bottom line growth. According to the report, India will need 30 million digitally skilled professionals by 2026 and 50% of the current workforce would need to re-skill themselves in areas of emerging technologies.

Sharing her views on the need for conducive skill strategies, Rituparna Chakraborty, Co-Founder & Executive Director, TeamLease Services and Chief Executive Officer, TeamLease Digital, said, "Today India has about 500 million people of working age and despite that we continue to face a skill crisis. Industry data suggests that only 49%

of total youth (age group of 22-25 years) in the country is employable. In fact, our own surveyed have indicated that 75% of companies face skill gap in the industry. Even among people, who can stay in their current jobs, 40% of fundamental abilities are likely to change and thus re-aligning the skill strategy will be crucial for companies."

The report from TeamLease Degree Apprenticeship highlights a seven-step skills strategy for corporates, which can directly im-

having an effective outcome focused learning approach with structured impact evaluation metrics.

"Labour and skill shortages are among the second most important external factors disrupting business strategy. In fact, over 2 million jobs in AI, Cyber Security, and blockchain are expected to remain unfilled in 2023. Additionally, the workplace is evolving so rapidly that 76% of the global workforce is not equipped with the requisite skills to function in the new digitally



pact their workforce productivity, revenue and growth. From developing a skills matrix, conducting skill audit to targeting specific learning journeys and intermingling upskilling within the company culture; a comprehensive skill development strategy will lead to a more sustainable future of work. The proposed recommendation also includes

focused workplaces. As organizations across the globe adopt new pedagogies for skilling, it would serve them well to look upon skill development as an integral step to creating long-term value for the organization. Incidentally, degree apprenticeship programs can emerge as a tool for holistic skill development and long-term retention plans

for employees which also facilitate the creation of a talent pool for the future. The long-term goal of all skill development programs must focus on the creation of a future-ready and future-proof workforce for that is the only way we can tackle the fluctuations in the world of work and infuse a sense of greater stability. The adoption of sustainable skill development thereby creating a healthy talent pipeline in any country is the only way to address the vagaries of talent Inequity. In this regard, HR Leaders need to assess their Skilling Strategy and come up with a democratic, long term plan integral to creating sustained value for the organization. Our study is

an attempt to create that pathway for every HR Leader in India, which is co-created and co-opted with HR Leaders who are torch bearers in this discussion”, added Chakraborty. According to the World Economic Forum, investment in upskilling could potentially boost India's economy by \$570bn by adding 2.3 million jobs by 2030. According to TeamLease's CHRO focused report, comprehensive skill programs based on real-life practices will be the future of skilling. The report also highlights prominent brand case studies (Accenture and Henkel, Amazon, AT&T, Infosys, HSBC), outlining the impact of advanced integrated skilling methods.

Skills Strategies for a Strong, Sustainable and Balanced World of Work' is a comprehensive report, designed to be a source of market information that helps CHROs step up and fundamentally reexamine their skill development strategy as well as to assist in establishing a complete plan for the organization's future skill-development programme. In this regard, a detailed analysis of skill strategies initiated by the global companies for their core employees are listed in the report along with a detailed action oriented skill strategy for CHROs. Additionally, it includes self-assessment questionnaire which is designed to help organizations assess their skill strategies.

## GODREJ & BOYCE aims to train 1 lakh young people in next 10 years towards advanced skills

### The organization promotes skilling initiatives for GREEN JOBS for the youth

**T**he sharper focus on sustainability and environmental responsibility, both by businesses and the youth has set the stage for green jobs to be the drivers of the global economy. And, as India collectively works towards the ambitious goal of Net Zero by 2070, its imperative to develop skills which can match the requirements of these new job roles and maximize on our large youth dividend to achieve to meet our short-term goals. Godrej & Boyce, the flagship company of the Godrej Group, has been focusing on equipping youth to take on future jobs. Whether it is through encouraging employees to innovate for

green products, providing in-house training to upskill the current workforce, or investing in developing the skills of the nation's youth the company is committed to bridging the skill requirements for green jobs. In the last 5 years, the Company has skilled close to 2 lac youth.

Enhancing employability with respect to future skills has also been a part of the company's CSR strategy. The Digital Skills initiative under their flagship CSR skill development program – DISHA aims to equip youth from Tier 2 and 3 cities with future skills. Recognising the progressions in Industry 4.0 as the underlying factor for the creation of green jobs, the digital skills initiative focuses on developing skills in automation, robotics, artificial intelligence, and Internet of Things.

Sharing her thoughts on the significance of digital skills,

Ashwini Deodeshmukh, Head CSR & Sustainability at Godrej & Boyce, says, “Looking at the growing demand and requirement for digital skills in the recent times, across various industries, we have realized that a lack of exposure to evolving technology and its applications serve as barriers to youth securing employment in their desired fields. Through the Digital Skills Initiative under Project DISHA, we aim to bridge this gap and equip young graduates from Tier 2 and 3 cities in India with the know-how to adapt to emerging technologies. Our goal is to train 1 lakh young people in next 10 years towards advanced skills.”

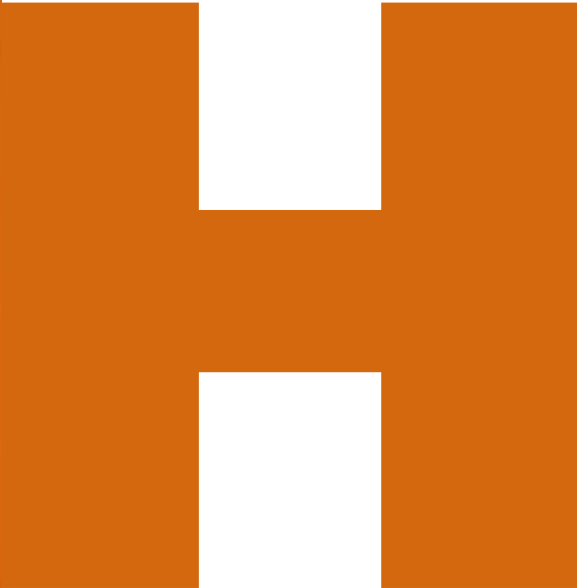
The Digital Skills initiative also features on-site training, which will give trainees a hands-on experience allowing them to witness how their skills translate to real-life applications.



# SOLAR POWER TO THE PEOPLE

China leads the world when it comes to renewables. It is not only the largest producer of solar energy, it also dominates solar panel manufacturing, producing more than 80 per cent of the global supply





Leading north from the town of Garissa in eastern Kenya, the dusty road forms a straight line a few hundred metres away from the bends of the Tana River. Nothing hints of the river's presence. All around is only desert and thorny shrub, with the occasional mosque and a scattering of tin-roofed homes.

Also hidden from the road is something that seems even more incongruous out here in one of Kenya's poorest counties. In the middle of the desert, 14 kilometres from the centre of Garissa, there's a vast sea of glimmering panels set out in uniform lines – the largest grid-connected solar power plant in East and Central Africa.

Mohammed Abdi, an elder from the nearby village of Raya, remembers when then President Uhuru Kenyatta opened the plant in December 2019.

"We were promised that every household would be provided with solar-powered electricity. But so far, this hasn't happened. It would help us a lot with our farming. It's costly to irrigate." Raya isn't connected to Kenya's national grid. To farm in this drought-ridden area, Abdi and his fellow villagers rely on an old diesel

pump, which sucks up groundwater to irrigate crops and grow fodder for their animals. "If this machine ran on electricity, it wouldn't cost as much," says Abdi. "And we're right next to the biggest solar power plant." The residents of Raya say they gave up more than 200 hectares of their land to make way for the power plant, but have so far seen few benefits in return.

So, who is benefitting? What's the bigger picture? These are the questions we will explore in this second instalment of our two-part series on just transitions, brought to you by Africa Climate Conversations in collaboration with China Dialogue.

### NEW KID ON THE BLOCK

Mother-of-five Ilgeymo Hassan is another resident of Raya. Just like Abdi, she sat on the committee formed to represent the community's interests

in negotiations with the company that built the power plant.

"We proposed a lot of projects such as bringing in teachers and nurses for our health centre, but none of this has happened. We [women] expected jobs such as cooking and cleaning, but nothing. We thought we would get this work to help support our families during this time of drought. I'm angry because we are not benefiting at all."

Although the community originally agreed to the plant and were paid for their land, Abdi says that without the other benefits they were promised, they now regret their decision. "I wish we'd been more enlightened as a community. We shouldn't have given up our land. We used to graze our livestock there, but the area isn't accessible any more."

Covering 85 hectares, the solar project was funded by a US\$136 mil-

lion loan from the Export-Import Bank of China. That is a relatively small amount compared to the US\$1.5 billion sprung by the bank for phase two of the standard gauge railway discussed in the first part of this series.

With a capacity of 54 MW, the plant is also relatively small, especially when compared to projects like the Lamu coal power plant, which had a planned capacity of over 1,000 MW. But Lamu and its polluting coal have now been shelved. And as Kenya's first and still only major solar power plant, Garissa stands in stark contrast as a noteworthy step towards the country's goal of 100 per cent renewable energy by 2030.

Kenya is already well on its way to this goal, in part thanks to supportive policies such as VAT exemptions on renewable energy products, and in part thanks to abundant supplies.

As of 2021, roughly 81 per cent of the country's installed power capacity came from renewable sources, predominantly geothermal, hydropower and wind. Thanks to the country's position on the Great Rift Valley, geothermal leads the way and will continue to do so, with a current installed capacity of over 850 MW, and various projects under-

**If somebody cannot afford a solar lantern today at 550 shillings (US\$4.40), the problem is not access. The problem is poverty.**

**ANDREW AMADI,  
CEO, Kenya Renewable  
Energy Association**

way that should realise a capacity of over 1,100 MW.

Next to geothermal, grid-connected solar is the new kid on the block, despite an estimated potential of 15,000 MW. At present, installed capacity is only a little over 170 MW, although there are more than six projects similar to Garissa currently underway. But this only accounts for a very small percentage of the total installed capacity of 2,990 MW (as of 2021), and Garissa's contribution accounts for only 2 per cent.

### **SOUTH-SOUTH COOPERATION**

The Garissa power plant was not

only fully financed by China, it was also built by a Chinese company: the Jiangxi Corporation for International Economic and Technical Cooperation.

This is far from surprising. China leads the world when it comes to renewables. It is not only the largest producer of solar energy, it also dominates solar panel manufacturing, producing more than 80 per cent of global supply – more than double its domestic demand, according to a recent IEA report. In addition, while the country has until quite

recently been concentrating on its own renewables market, there is now increased interest in investing overseas. This follows Chinese President Xi Jinping's pledge in 2021 to "step up support for other developing countries in developing green and low-carbon energy".

It all falls into what has already become a familiar pattern of overseas investment under China's global infrastructure development strategy, the Belt and Road Initiative.

From the Kenyan perspective, Garissa would have been impossible without overseas support. And China's cheap solar panels and world-leading expertise make it an obvious partner. The project is helping the country meet its commitment to reduce greenhouse gas emissions and meet its own development goals.

One of these goals is to supply all Kenyan households with electricity, part of the country's Vision 2030 programme to provide a "high quality of life to all its citizens" by the end of this decade. At least 75 per cent of the population are already connected, although this falls to 65 per cent in rural areas.

### **LOCAL SOLAR SOLUTIONS**

Although the community of Raya has so far missed out on electrification, it's a different story in Garissa.

**From the Kenyan perspective, Garissa would have been impossible without overseas support. And China's cheap solar panels and world-leading expertise make it an obvious partner. The project is helping the country meet its commitment to reduce greenhouse gas emissions and meet its own development goals.**

The county town was connected to the national grid in 2016, and its substation now receives and distributes all the new solar power plant's electricity. Roughly 5 MW is used locally, making a big difference for residents, who previously suffered from frequent blackouts.

Elizabeth Njoki owns an eatery and fresh food stall, and previously used a diesel-powered generator to reliably run her three refrigerators.

"Electricity is very important for us, especially in my business, because I have a lot of appliances such as warmers and refrigerators," she says. "When there's a blackout it affects us a lot. But we're no longer experiencing power outages like we did before – sometimes we'd be without electricity for three days in a week."

With a reliable supply of electricity from the grid, Njoki says her business has become more productive, and her losses from wasted food have decreased. The only downside is that now she's using more electricity from the grid, her bills have increased significantly.

"Although we have plenty of power now, my monthly bills have become very expensive, and I can't always afford to pay them. Sometimes my supply gets disconnected because of delayed payments," she says. One way Njoki has sought to cut these bills is by investing in her own solar-power system. "It's not enough to power all the appliances I need for my business. But if it can reduce my electricity bills, that would help a lot."

Small, home-based solar systems are used widely in Kenya. For Andrew Amadi, CEO of the Kenya Renewable Energy Association, one of the main reasons is that the equipment is increasingly affordable. "And then once you pay for it, that's it, you are not paying another cost again," he says.

"The biggest demand for solar electricity is not from people who

don't have electricity," says Amadi. "It is from people who are connected to electricity. That is who they are selling the most solar home systems to, it's to people who are connected to the grid already. It is inevitable that people will generate their own power. And what is making this self-generation possible is that it is now based on renewable energy, and it is cheaper. And this is directed to people who are using it for income generation."

Amadi sees great potential for solar power in Kenya. "People will discover that the cheapest energy for manufacturing is electricity in Africa," he says. "And we want to push for industries to move and take advantage of [the fact] that it is cheapest to use electricity in Africa."

**In a place like Garissa county, the climate crisis is undeniable. The rains have failed four years in a row here, leading to the worst drought for 40 years. The Kenyan government estimates about 4.5 million people in the northern and eastern regions of the country now face the threat of starvation and are in need of humanitarian support.**

So bring your production to Africa at the lowest cost."

## **'AFRICA IS HOLDING THE KEYS'**

For Amadi, solar and other renewables should be seen as Africa's way of addressing the climate crisis as well as issues of climate justice.

"If there are things that we can make here using solar, cheaper, we cut down emissions and we also improve the livelihood of our people," he says, adding that if the people of Africa were to pursue the same model of development seen in the west, "then nobody in this world stands a chance".

"Africa is holding the keys. So Africa also needs to benefit in a substantial way," he says.

In a place like Garissa county, the climate crisis is undeniable. The rains have failed four years in a row here, leading to the worst drought for 40 years. The Kenyan government estimates about 4.5 million people in the northern and eastern regions of the country now face the threat of starvation and are in need of humanitarian support.

Poverty increases the impact climate disasters like this can have. To make Kenyans more resilient, Amadi argues that reducing poverty should be a policy focus. And, like the government, he believes that access to electricity has a key role to play in this.

"Let us take productive use of renewable energy technologies to the most desperate people, where they are taking the food aid right now. Take productive use of renewable energy to that community and give them equity in a real business. Then you will have addressed the issue of access, because it's not just access to the technologies, it's also access to financial opportunities."

He adds that: "If somebody cannot afford a solar lantern today at 550 shillings (US\$4.40), the problem is not access. The problem is poverty."



## A 'TURNKEY PACKAGE'

It's clear that solar energy is closely tied to development in Kenya. But what role will the Garissa solar power plant play?

Ulrich Elmer Hansen from the Technical University of Denmark has studied the project as part of his research into the renewable energy transition in developing countries.

He says Garissa is typical of China's method of investing in large infrastructure projects overseas, which usually follows a "tight model, where money, capital, technology, knowledge and [even] labour in some cases, are part of a turnkey package". A "turnkey package" is a project in which the contractor takes on everything from the design to the supply of materials and the construction. Chinese turnkey projects usually include the finance too.

capabilities were at the lower end of the continuum." The Kenyan government would argue against this. According to those involved in the project, 600 local people were employed in the construction process, and the Chinese company trained 50 Kenyan technicians.

## MAKE USE OF WHAT YOU'VE GOT

Hansen emphasises that it's not just Chinese investment that follows this "tight model". Western projects are often the same, he says.

But it doesn't always have to be this way. There are examples from other African countries, such as Benin, where governments have set down strict conditions for Chinese and other foreign investment, resulting in more local employment and better transfer of skills.

When it comes to the manufacturing, Hansen doesn't think it makes much sense for a country like Kenya to try to compete with China. But the skills already developed here – mostly thanks to the widespread use of smaller solar systems – could, with the stimulus provided by projects like Garissa, become their own driver of economic growth.

"Maybe the way to go for industrial policymaking in this area is to look more closely at these auxiliary service activities. It could be engineering, consulting, all kinds of repair, maintenance and service activities. So once a project is installed in Kenya, there would be an ecosystem of local companies specialised in different areas of services around those projects. And thereby these companies or local industries could actually capture a much larger share of the economic benefits that are around these projects."

So, there's a lot of potential and hope for Kenya. But this is sometimes hard to see in a place like Raya village. For the residents there, it's clear more needs to be done to make this transition Kenya's going through just and equitable.

Local farmer Harun Luhos Nunow looks out at the dry, dusty earth around his home. "With the drought we're virtually starving, and our livestock lack pasture. Yet all that land where our animals could once graze, and where we used to cut wood to make charcoal, is now under solar panels. The government needs to make sure that as a community we benefit from this solar plant with access to affordable electricity and jobs," he says.

"What's the point of living next to the largest solar project in East Africa when it's of so little benefit to us?"

**A "turnkey package" is a project in which the contractor takes on everything from the design to the supply of materials and the construction. Chinese turnkey projects usually include the finance too.**

For Hansen, the problem with this type of investment is that, while Kenya now has the hardware it wants, it hasn't gained much else out of the collaboration. "What else is there to it?" he asks. "To what extent did knowledge actually become exchanged? To what extent did local companies actually engage in this project?"

When it comes to Garissa, the conclusion he reaches is that "these elements were relatively modest, in the sense that the amount of local labour, the amount of local content, the amount of technology knowledge

Hansen also thinks there's a lot of potential for Kenya to benefit in a more rounded way from this kind of investment. "If you look at the broader picture, the solar sector in Kenya is well known. There are a lot of companies and businesses engaged in importing, selling, installing, servicing and maintaining solar systems. So I would say that there are a lot of competencies and a lot of knowledge of domestic or local businesses that are involved in this, and that are very capable of handling installation, servicing and so on."

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(SOURCE: <https://www.eco-business.com/news/solar-power-to-the-people/>)



Villagers examine a natural resources map of their region.

Image: WOTR

# Water budgeting is taking Indian farmers from scarcity to plenty

Farmers are using science and data to manage precious water resources cooperatively, improving yields, incomes and quality of life, writes **Manu Moudgil**

**B**hagavat Ghagare had witnessed much misery due to lack of water in his village of Kumbharwadi in Ahmednagar district, one of the most drought-prone regions of the Maharashtra state on India's western coast.

Supply from private tankers was never enough, women suffered from back and leg pains for carrying pitchers from far off, children dropped out of school to fetch water, and many families took up manual labour in neighbouring areas because their fields remained fallow for lack of water in the long summer months. "We would take our herds to go live on the floodplains that still had some grass and water left for the cattle," he recalled.

Today, the village has enough water to grow three crops. No private water tankers are needed, and only a few educated young men emigrate in search of white-collar jobs.

This transformation has taken 10 years, during which time the vil-

lagers learned about and adopted 'water budgeting', which rests on science and social cooperation to plan and manage water usage. Water budgeting, helped by non-governmental organisations and state government agencies, has also helped farmers in the region deal with increasingly erratic rains in recent years.

The residents have learned to read rain gauges, measure ground-water levels, and employ formulae to calculate how to best use the precious resource. Residents of each village come up with a plan by prioritising drinking water for humans and livestock and then deciding upon a list of crops that can be grown with the remaining water available until the next mon-

soon season replenishes the water sources. The crucial element, as with any plan for using shared resources, is consensus and cooperation.

By showing that this can be done, Maharashtra's water budgeting farmers hold up an example for farmers across India, which is projected to experience more frequent and intense heat waves, extreme rainfall events and erratic monsoon rains over the coming decades.

India uses 25 per cent of all groundwater extracted globally, ahead of the United States and China. Some 89 per cent of groundwater is extracted for irrigation and guzzlers such as paddy and sugarcane consume more than 60 per cent of irrigation water. The World Bank has predicted that 60 per cent of the India's aquifers will be in a critical condition by 2032.

## Water budgeting

India has implemented a slew of water conservation measures over several decades. Most of this conservation work involves tree plantation, digging of trenches to enhance water infiltration into the ground and prevent soil erosion, and construction of ponds to harvest rainwater. Success has been sporadic and inconsistent, and none of these is a complete solution in itself.

In Kumbharwadi, water conservation efforts first started during the 1998-2002 period, and bore fruit initially. "Noticing more water, we expanded the cultivated area, started growing sugarcane and other water-intensive crops, increased the number of livestock and ventured into the dairy business," said Ghagare. "But it lasted only seven years. That is when we realised that there is a limit to how much water we can use." Farmers in many parts of India are growing commercial crops, unsuitable to the hydrological profile of their regions by digging deeper into aquifers. Maharashtra state's sugarcane cultivation, for

instance, consumes 70 per cent of the total water used for irrigation. It takes 2,100 litres of water to produce a kilogram of sugar in Maharashtra against 822 litres in Bihar, an eastern state with wetter climate. Water budgeting helps highlight such follies.

The Watershed Organisation Trust (WOTR), a Pune-based non-profit organisation, helped Kumbharwadi residents change their approach – soil and water conservation work was supplemented with water budgeting.

A village-level committee was constituted and farmers were divided into three clusters to supervise each other's practices. Over numerous training sessions, experts helped the villagers understand the water

harwadi practices surface or flood irrigation, the conventional but inefficient method that involves flooding the field with water. "Drip and sprinkler systems have not only reduced water use but also cut input costs and increased crop yields," said Ghagare. The details about rainfall, availability of surface water and monthly groundwater measurements are displayed at the panchayat office. The list of crops to be sown is decided during a meeting of the village general assembly.

The farmers are also growing crops more suitable to the hydrological profile of their area. "Around 40 per cent of farmers in our area have shifted to sericulture from sugarcane. Silk fetches a good market



A training session for farmers to learn about water management and budgeting. IMAGE: WOTR

cycle, the geology of the region, the recharge areas, how much rainwater percolates into the ground, what is runoff, and so on. Further, the villagers learned how to measure the yield of a well, the water requirements of humans and animals, the irrigation requirements of each crop and the use of water-saving equipment such as sprinklers and drip irrigation systems, said Dr Eshwer Kale, thematic lead for water policy and governance at the WOTR Centre for Resilience Studies (W-CReS). Today, hardly anyone in Kumb-

rate, like sugarcane, but is not as water intensive," said Uma Aslekar, executive director with the Advanced Center for Water Resources Development and Management, a non-profit organisation which has guided over 111 villages in water budgeting. "We believe that people can decide the best for themselves when equipped with sound knowledge."

Similarly, farmers at Randullabad village of Satara district in Maharashtra used to grow only four to six types of crops. They were also supplying water-intensive potatoes to



manufacturers of potato chips. With water budgeting, up to 17 different types of crops flourish in the same fields depending on the season and water availability. Potatoes are still grown but only during the monsoon.

In India, groundwater is usually considered a private resource of the person on whose land a well or borewell is located. This gives rich farmers with vast land ownership and deep pockets to dig borewells a first-mover advantage in this race to the bottom of aquifers. Water budgeting, on the other hand, makes villagers aware that the underground aquifer is a common resource that everyone has an equal right over.

One key and fundamental regulations in the villages practicing water budgeting is related to new borewells. Some villages have banned the sinking of new borewells while others have restricted the depth of borewells to 100 feet. “We don’t allow any new borewell because even if one person starts mining more water, all of us suffer,” said Dr Prajakta Jagtap, a former sarpanch of Randullabad. “Anyone requiring additional water petitions the village committee, which can allocate the resource from the common well if it considers the need to be reasonable.”

The success of water budgeting has inspired many villages to adopt the concept. WOTR has expanded its work to around 270 villages in Maharashtra and the neighbouring states of Telangana and Madhya Pradesh. The Maharashtra state government has enacted water budgeting into a law, mandating the preparation of watershed or aquifer based groundwater use plans based on water budgets of an area. It also puts the onus on farmers to maintain the water budgets of their respective villages if they grow water-intensive crops. A national-level, World Bank-funded groundwater management project, launched in 2019, also includes a component on water budgeting at the village council level.



Villagers record water accounting and budgeting details. IMAGE: WOTR

## The challenges

The system does not operate smoothly at all times. For instance, one farmer installed a borewell on his farm in Randullabad while flouting all rules. “He did this in March-April, when the water shortage is most acute. This impacted the neighbouring farmers because the water in their dug-wells receded,” said Ganpat Jagtap, a member of the village development committee. A dug well is a traditional well that gets water from shallow aquifers compared to borewells that are drilled much deeper. “The owner’s own dug-well also showed reduction in water after the borewell became operational,” Jagtap said, adding, “A dug well gives consistent water supply for 2-3 hours while borewell in our area yields water only for 15-20 minutes at a time. This made the person realise his mistake and he agreed to not use the borewell.”

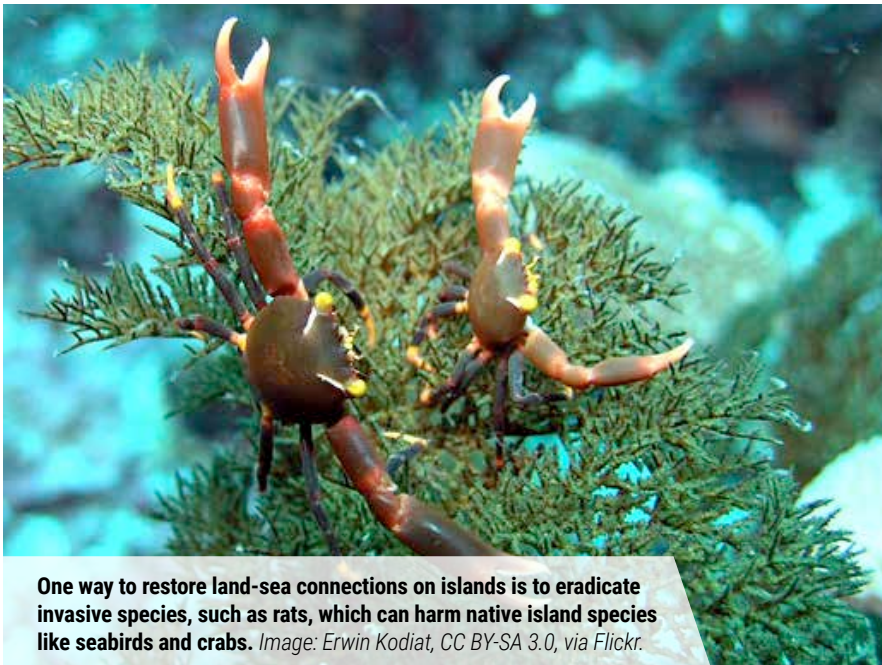
Problems also crop up at the village level, as not all villages respond enthusiastically to such interventions. Those located closer to cities, having weak social bonds or deep political fissures tend to perform poorly. For instance, a water budgeting project in the southern, peninsular state of Andhra Pradesh saw mixed results. Three years after funding for one such project ended, only 32.7 per cent of surveyed habitations continued to practice crop

water budgeting, found a study by the International Water Management Institute. At places where the system still worked, farmers had either organised themselves into cooperative credit societies or had continued commitment from civil society groups even after the project period.

“One thing we focus on during our work is training of local resource persons in the villages because even after we leave, there should be someone to keep the system working,” said Aslekar. “Today, around 25 of these resource persons are sarpanches of their villages and water budgeting has got embedded into their governance models.”

Another thing common among successful villages is the small size of landholdings. Farmers who own up to 2-3 acres and share dug-wells already have a system of cooperation. In Randullabad, most people belong to one caste and hence the society is homogeneous, but Kumbharwadi has a mix of caste groups besides Muslims and families belonging to indigenous tribes. “Eventually, villagers must realise that more than caste or religious groupings, it’s the dire need for sustainable sources of water that binds us,” said Ghagare, “Nothing else matters.”

(Source: <https://www.eco-business.com/news/water-budgeting-is-taking-indian-farmers-from-scarcity-to-plenty/>)



One way to restore land-sea connections on islands is to eradicate invasive species, such as rats, which can harm native island species like seabirds and crabs. Image: Erwin Kodiat, CC BY-SA 3.0, via Flickr.

# Island conservation should focus on links between land, sea life

Research has shown that terrestrial and marine ecosystems reap benefits when invasive species are eliminated from islands, writes **Elizabeth Claire Alberts**

**S**tuart Sandin's first impression of Palmyra Atoll, a remote island in the central Pacific Ocean, during a visit in 2004, was troubled. There were seabirds, but their presence was fragmented, likely because of the rats that had hitched a ride on board military ships and invaded the atoll during World War II. On walks through the forest, Sandin found

broken eggshells and bird skeletons: evidence of rat predation.

But when conservation experts worked to eradicate the rats from Palmyra Atoll in 2011, the island and surrounding sea started to change, Sandin said.

"Within a few years, the sound of the seabirds got a lot louder, and the coconut crabs, once seemingly uncommon, had made the [island's] field camp into a stomping ground," Sandin, a community ecologist at the Scripps Institution of Oceanography, said in a press conference.

According to Sandin, seabirds are "connector" species, feeding in the open ocean and depositing nutrients both on the island's terrain and in the coastal waters. In other words, seabirds create a vital link between land and sea, strengthening the overall island ecosystem.

In a new perspective piece in the Proceedings of the National Academy of Sciences (PNAS), Sandin and colleagues explore this reciprocity between land and sea on islands. Drawing on a vast body of existing research, they argue that island wildlife, ecosystems and even people can thrive when conservation efforts focus on restoring both land and sea together — an approach sometimes referred to as a "ridge to reef" model.

The removal of invasive species is one tool that can be used to reactivate land-sea connections; others include the restoration of native vegetation and the implementation of marine protected areas, the authors say. However, many current conservation efforts tend to focus on either land or sea, but not both. That needs to change, Sandin said.

"If we are only focused on the protections on land, we may end up with more seabirds on a particular island, which would be good for some of the terrestrial conservation goals," Sandin, the co-lead author of the paper, told Mongabay. "If we only focused on the sea, we may put a marine protected area ... but each of them is thinking about each ecosystem independently. If we think about them together, there may be some multiplied benefits."

Research has shown how the removal of invasive species not only improves the terrestrial ecosystem, but strengthens the surrounding sea. For instance, a recent study found that eradicating rats from New Zealand's Mercury Islands not only bolstered seabird populations, but that the seabirds helped fertilise the coastal waters, which enriched nearshore algal communities. Another study suggested that rat elimination enhanced coral reef productivity in the Chagos Archipelago in the Indian Ocean.

While there would be a relationship between land and sea in any coastal region in the world, the

connection is most prominent on islands, Sandin said.

“On islands, especially small islands, the ocean’s all around,” he said. Land-sea connections also tend to be more noticeable on islands since changes, both negative and positive, occur over a smaller area of land, he added.

The PNAS piece draws on a suite of studies, many of them published in the last 10-20 years, but also acknowledges that traditional ecological knowledge holders have long known about the interconnections between land and sea on islands and have used this knowledge to manage their environments.

“We really should be listening more carefully to the local island communities and their traditional knowledge that they’re bringing to the table,” co-lead author Penny Becker, vice president of conservation for the nonprofit Island Conservation, said during the press call. “And in this case, Indigenous island people have long recognised the interconnections between islands and oceans. They embrace holistic solutions that span land and sea and community, and it’s woven into the fabric of their culture. And they’ve known for centuries that what happens to land happens at sea, and Western conservation is really just catching up to this idea.”

The authors identify six characteristics that can help strengthen land-sea connectivity, and which can be used to guide conservation efforts: precipitation, elevation, vegetation cover, soil hydrology, oceanographic productivity, and wave energy.

Scott Fitzpatrick, an expert in the archaeology of islands and coastal regions at the University of Oregon,

who was not involved in the new paper, said the PNAS piece highlights “the importance of looking at islands and conservation from a ‘ridge to reef’ perspective,” particularly when it comes to the negative impacts of invasive species. However, he said the paper itself is “decoupled” from crucial anthropological, archaeological or paleoenvironmental perspectives, despite the authors acknowledging the importance of harnessing traditional ecological knowledge.

“While they recognise that ‘our understanding of land-sea connections across the globe spans mul-



**Islands are one of our last bastions of hope for preserving the biodiversity of the planet because there are so many of these unique species, and probably the most prominent ecological problems or management problems for islands is the preservation of the species.**

**STUART SANDIN,  
Community Ecologist,  
Scripps Institution of  
Oceanography**

tiple knowledge systems, including long-standing human knowledge from island communities through diverse perspectives,’ there really is no tacit acknowledgment of what these perspectives are, how they are known, and how any future analysis would need to incorporate coordination and cooperation within these communities,” Fitzpatrick said.

Despite this criticism, Fitzpatrick said the paper’s identification of six geographic properties of land-sea connections could be “interesting and useful” to island conservation efforts.

With invasive species being a primary issue for many islands, many conservation efforts have naturally focused on their eradication. For instance, experts recently eliminated rats from the Tetiaroa Atoll in French Polynesia, and have also attempted to rid the island of yellow crazy ants (*Anoplolepis gracilipes*), both of which wreaked havoc with the atoll’s native wildlife.

In April 2022, conservationists also launched the Island-Ocean Connection Challenge, a program focused on restoring and rewilding about 40 island ecosystems to benefit islands, their surrounding marine environments and local communities by 2030. Experts have

identified Floreana Island in Ecuador’s Galápagos Archipelago and Palau’s Sonorol Island as two places that could benefit from restored land-sea connections. Rats and other introduced species have invaded both islands.

“Islands are one of our last bastions of hope for preserving the biodiversity of the planet because there are so many of these unique species, and probably the most prominent ecological problems or management problems for islands is the preservation of the species, especially things like seabirds, or crabs or even iguanas,” Sandin said.

“In some cases, we’ve lost hope that we can protect things,” he added, “but we recognise that we do have agency and that we can increase or improve the livelihood of both our people and our ecosystems.”

*This story was published with permission from Mongabay.com.*

*(Source: <https://www.eco-business.com/news/island-conservation-should-focus-on-links-between-land-sea-life/>)*





# Making movies, not mess: Three sustainably produced films to watch

With the environmental impact of Amazon Studios' *The Rings of Power* having come under scrutiny, here are some sustainably produced films you could watch instead, writes **Choy Myn**

**W**ith nearly US\$465 million spent on the opening season alone, Amazon Studios' *The Lord of the Rings: The Rings of Power* may have been one of the most expensive television series ever produced. However, media reports suggest that the stunning set pieces may have come at great environmental cost.

In internal correspondence leaked to the press, the *Rings of Power*'s sustainability team said that the first season of the show generated 14,387 tonnes of carbon dioxide – or more than five times of what a big-budget “blockbuster” film would typically generate, based on estimates provided by the British Film Institute (BFI). Further emails from three waste disposal vendors revealed that the production sent

14,000 cubic metres of waste to the landfill – enough to fill six Olympic-size swimming pools.

There were some green initiatives – the crew recycled paper and batteries, installed electric vehicle charging stations and ate some vegetarian meals, as British newspaper *The Guardian* reported. However, these efforts seem dwarfed by the emissions and waste generated by the production process. Amazon said its filming met or exceeded industry standards.

In the spirit of sustainability, here are three sustainably produced films you can watch over the holidays instead:

## 1 The Amazing Spider-Man 2 (2014)

While Hollywood blockbusters usually entail huge emissions and waste footprints, their big budget also allows them to adopt more sustainable production practices, as in the case of Sony Pictures' *The Amazing Spider-Man 2*, which stars Andrew Garfield, Emma Stone and Jamie Foxx. The crew had a manager who oversaw, enforced and documented sustainable practices on set, which enabled them to save 193,000 disposable plastic water bottles, donate or reuse 49.7 tonnes of materials and divert more than 52 per cent of their waste from landfills. These efforts not only trimmed US\$400,000 from their production costs, but also won them the Environmental Media Association's Green Seal award in 2014.

*The Amazing Spider-Man 2* can be viewed on Netflix, DVD or Blu-ray.

## 2 Bait (2019)

Hailed by many film critics as a modern masterpiece, *Bait* explores the decline and gentrification of British seaside towns through the rising tensions between a struggling fishing community and tourists who increasingly threaten the town's authentic character and

**“The most sustainable film is one which has not been produced. But it's possible to produce films in a more eco-friendly way and sometimes low-budget productions have done it without even knowing it, like shooting in nearby locations, getting actors to put on their own clothes or using the available light [in the day].”**

traditional ways of life. Apart from its unusual subject matter, the film's aesthetic qualities also stand out. *Bait* was shot with a 16mm silent film camera in director Mark Jenkins' native Cornwall. Jenkins then developed the film himself at home and recorded the audio later, a process which gives the movie its otherworldly quality and emphasises the main character's increasing alienation from his town.

Though *Bait* has not been explicitly lauded for its sustainable production, it has followed a few key practices which sustainable film experts say greatly reduce the environmental footprint of filmmaking, such as keeping shoots local, simplifying filming setups and minimising cast and crew size.

In an interview with Eco-Business, Birgit Heidsiek, head of Germany-based sustainable media platform Green Film Shooting said, “The most sustainable film is one which has not been produced. But it's possible to produce films in a more eco-friendly way and sometimes low-budget productions have done it without even knowing it, like shooting in nearby locations, getting actors to put on their own clothes or using the available light [in the day].”

*Bait* is available on Apple TV, BFI Player, DVD and Blu-ray.

## 3 Chandigarh Kare Aashiqui or Romance in Chandigarh (2021)

Progressive and sustainable film production is not an exclusively Western development, with Bollywood sets making major strides in both areas as well. Directed by Abhishek Kapoor and produced by T-Series in conjunction with Guy in the Sky Pictures, *Chandigarh Kare Aashiqui* follows Manu (Ayushmann Khurrana), a bodybuilder, who struggles and eventually overcomes his gender biases to love Maanvi (Vaani Kapoor), his trans woman partner.

The film's sustainability effort was led by Skrap, an Indian environmental sustainability firm that managed to divert 17 tonnes (or 95 per cent) of the film's waste material from landfills by providing water dispensers and compostable plates, minimising food waste and donating leftover food to needy communities through organisations such as Feeding India and Robinhood Army.

In fact, feeding actors and production crew is one of the highest waste-producing areas in Bollywood filmmaking, according to Janjri Jasani, deputy director of the Mumbai-based non-profit Centre for Environmental Research and Education (CERE).

“I think catering has a huge impact [on the environment] because there's so much packaged food involved and so much food wastage. Apart from diesel generators, transportation and all the [costumes], catering services is probably where the biggest impact still is,” she explained in an interview with Eco-Business.

*Chandigarh Kare Aashiqui* is available on Netflix. 

(Source: [https://www.eco-business.com/news/making-movies-not-mess-three-sustainably-produced-films-to-watch/?sw\\_login=true](https://www.eco-business.com/news/making-movies-not-mess-three-sustainably-produced-films-to-watch/?sw_login=true))



# UN BACKS BIODIVERSITY CREDITS

Biodiversity offsetting has been highly controversial for its role in greenwashing but the United Nations believes that 'biocredits' can be different. Negotiators are still in talks at the COP15 conference on biodiversity this week, writes **Portia Tan**



**T**he United Nations is recommending biodiversity credits as a way to generate funding for conservation.

A joint report published last week by the UN Development Programme (UNDP) and UK-based think tank International Institute for Environment and Development (IIED) said that as biodiversity credits or “biocredits” are designed to be bought and sold, they can direct revenue “towards effective biodiversity conservation and directly support locally-led action to ensure indigenous peoples and local communities can fully participate in and realise the benefits”.

The report comes as the COP15 conference on biodiversity is underway in Montreal, Canada, which many hope will seal a bold new international deal with precise targets to commit countries to restoring nature while slowing species loss.

Marco Lambertini, director general of the World Wildlife Fund (WWF) International, said of the biodiversity agreement he hopes will be delivered at COP15: “To tackle the nature crisis, governments must agree on a nature-positive goal that unites the world in protecting more of the nature left on the planet while restoring as much as possible and transforming our productive sectors to work with nature, not against it”.

The UNDP, in the study, also attempts to differentiate the recommended mechanism with that of biodiversity offsets. The report states that both have the ability to increase funding for biodiversity conservation but offsets have sometimes been criticised for their ineffectiveness. They might not be strictly regulated and could provide a “license” for companies to degrade the environment, it said.

In the paper, the fundamental function of biocredits were defined

as that to quantify and track biodiversity conservation, as well as preservation efforts and outcomes. It said that the investment into biocredits can bring about “net gain” as the process refers closely to biodiversity indicators.

On the other hand, the report explained that biodiversity offsets operate under the assumption that harm done in one location can be made up for reparations elsewhere, and such a mechanism could mean risks of further harm inflicted on biodiversity and nature.

The report touches on the challenges of implementing biocredit schemes, which it says need to be clearly understood in order to avoid greenwashing. Firstly, it says that the complexity of measuring biodiversity makes it challenging to define and quantify what a unit of biodiversity exactly is. Furthermore, the biocredits have to be cost-effective in order to incentivise demand and supply.

Historically, high transaction costs and ingrained power imbalances have also kept indigenous and local communities from benefitting from market-based conservation schemes, the report said. To overcome these hurdles, schemes must be rooted in in-depth knowledge of local ecosystems to effectively decide which indicators and metrics would be best. It said that the need to work in tandem with locals is “key to ensuring that their needs and priorities are met and to increasing the effectiveness of biodiversity conservation”.

Other than the UN, the World Economic Forum (WEF) has also expressed support for biocredits. Both explained that biocredits can be financed by different stakeholders, including investors, private resellers and intermediaries, as well as companies with corporate social responsibility policies that require them to commit to nature-

positive measures. WEF called biocredits “an economic instrument that can be used to finance actions that result in measurable positive outcomes for biodiversity”.

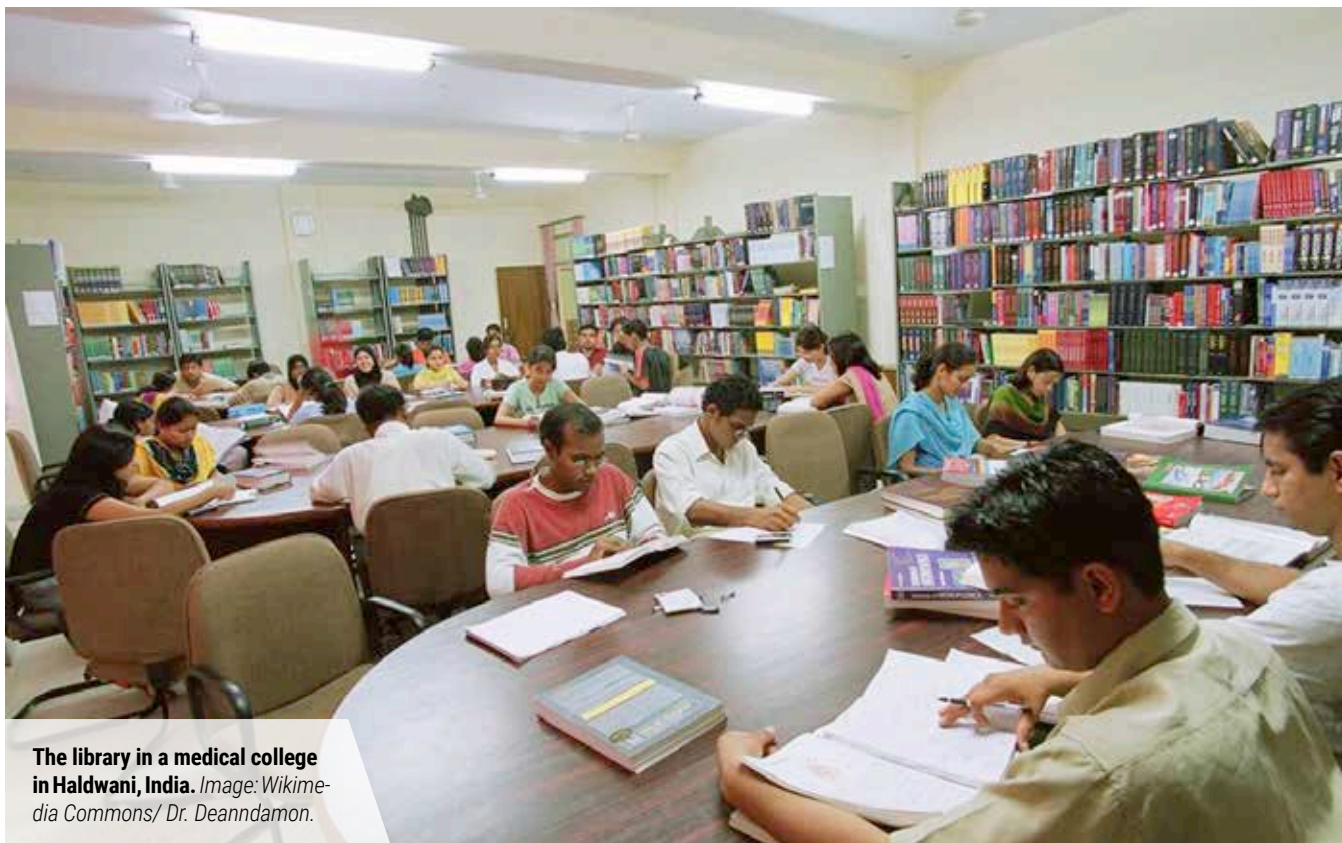
Both the report and WEF cite the Wallacea Trust methodology and Terrasos as examples of biocredits in action.

Under the Wallacea Trust’s biodiversity and climate research organisation, Operation Wallacea, the working group developed an open-source biocredit methodology that can be applied in all 1300 eco-regions and habitats worldwide. The trust has a collection of banks that have committed to buying 3 million biocredits from new projects being developed in Central and South America. Terrasos, a Colombian biodiversity conservation and habitat banking organisation issued its biocredits at the flat rate of \$30 each, to the Bosque de Niebla-El Globo Habitat Bank (also known as Spectacled Bear Habitat) in May this year to conserve the remaining native species in the High Andes.

The WWF’s Living Planet Report which studies global biodiversity trends found that monitored wildlife populations have dropped 69 per cent on average since 1970. Financial institution JPMorgan Chase, estimated that recent loss of ecosystem services amounted to US\$4-20 trillion per year.

A key talking point of COP15 this year is also the commodification of nature as a solution. Agnès Le Rouzic, a digital campaigner with Greenpeace Canada said, “All parties at COP15 - especially the rich countries from the Global North who have profited the most from commodifying nature - must come to the table with the funds needed to protect biodiversity”. 🌱

(Source: <https://www.eco-business.com/news/un-backs-biodiversity-credits/?sw-login=true>)



The library in a medical college in Haldwani, India. Image: Wikimedia Commons/ Dr. Deannadamon.

# India-wide subscription to research journals paves path for Global South

With rising fees for research journals, India is pressing ahead with a nation-wide subscription to allow more people to access science, writes **Nishant Chakravorty**

Imagine you start reading an important news article on a website, and a message flashes on your screen asking for a hefty fee to read the entire article. It would be irritating, to say the least.

This is the reality for most scientists. They are locked out of scholarly journals that carry the information

they need to progress their research unless they pay a fee to the publisher. And the charges have risen to levels several hundred times higher than inflation. As a University of Missouri librarian calculated in 2020, compared with 1983, charges are 113.78 times higher than inflation for famous scientific journals

such as Nature, 189.18 times for Science and 244.49 times for the New England Journal of Medicine. Put another way, NEJM price rises have outpaced inflation by 24,339 percent.

Indian researchers and research institutions collectively spend around 15 billion rupees (USD\$200 million) on journal subscriptions for scholarly literature every year — a huge cost for a growing economy and a problem not unique to India but similar for all countries of the Global South. Scientific publications are a multi-billion-dollar industry

dominated by a few big players. Academics are often government funded, do research often funded by taxpayers and then use taxpayer dollars to read about the research in privately owned journals.

It's a massive transfer of wealth from the taxpayer to private industry and there have been recent calls to overhaul the system. But to expect publishers to make the literature free for all is a utopian dream. Therefore, the scientific community has been trying to aim for more realistic goals and find mechanisms to make science more accessible to all.

India's "One Nation One Subscription" (ONOS) policy has garnered plenty of attention.

India's ONOS model, first called for in 2017 by the Indian Academy of Science and drafted into government policy three years later, calls for a centrally negotiated subscription deal with publishers, making scholarly articles free to read for all researchers, eliminating the need for individual and institutional subscriptions. The collective bargaining power of the entire nation is expected to allow greater value for money.

India's ONOS policy is intended to allow better access to scientific literature, increased scientific literacy and better use of research grant money. If the policy is successful, it will serve as a role model for other parts of the world and likely be replicated across the Global South.

India began the first phase of implementation of ONOS in November 2022, with 70 publishers' resources considered for access from April 2023. Negotiations for a central subscription for these publishers should commence soon.

But the path to implementation of One Nation One Subscription will inevitably have challenges.

Its success depends on well-negotiated deals between government and publishing houses. The government would need a team of

seasoned negotiators to ensure a good outcome. Another challenge is identifying which resources Indian researchers will need. A well-designed, methodical approach is crucial for success. This is where existing subscriptions lists from institutions and libraries will help. The scattered nature of those lists means a single access portal combined with a monitoring and audit system will be key to pinpointing which journals are most desirable.

A country of India's breadth has many institutions of different sizes and access to funds. The ONOS policy is expected to reduce the burden on small institutions and bring systemic change in access to scholarly articles. The hope is it will create a strong research ecosystem that promotes research for its own sake, as well as more applied and commercial research.

Many institutions worldwide have been pushing towards a "transformative agreement", as the publishers call them, gradually moving from individual subscriptions to nation-wide free-to-read arrangements. These agreements enable all of society to have free access to scientific literature.


The catch is such agreements put in place an up-front fee to scientists who want to publish their research findings. It shifts the burden of fees from readers to authors, which in turn is passed on to funding bodies or the taxpayer. The fee to publish for the most reputed journals are often exorbitant and, despite occasional fee waivers, researchers from the Global South many times cannot afford the "pay-to-publish" models.

The ONOS policy serves as a formidable alternative to transformative agreements for the Global South. This model will enable countries to stand on stronger negotiating positions through purchase of greater bulk of content and provide people with full access to a large number of journal titles. Although

it is not yet clear whether scientists will need to pay up-front fees to publish, a mature ONOS policy is also expected to support access to journals in the Global South, especially for young researchers, by having separate provision for funding free-to-read publications or a one-time licensing agreement to journals with up-front publishing fees. Experts on ONOS policy have recommended a similar plan to promote and support accessibility for India.

Some see the ONOS model as a "win-win" for nations and publishers, where all researchers would have full access to scholarly writing and publishers could continue to make a profit.

Another winner would be science. Since researchers will not be required to spend their research funds on publication charges, they will be able to use their grants on experimental expenditures and thus generate better findings. More readers would mean more scientific exposure and improved research outcomes and development in the long term.

The Global South is under pressure to implement transformative agreements by institutions and consortiums of the Global North presently. A successful ONOS model might be an appropriate alternative to this approach. India's move to the ONOS policy thus serves as an important transition that the Global South is looking towards. 

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*(Source: <https://www.eco-business.com/opinion/india-wide-subscription-to-research-journals-paves-path-for-global-south/>)*



## 5,500 kms, 50 cities, 1 million+ people reached: Edelweiss Tokio Life's Zindagi Express concludes journey in Bhopal

**T**racing a heart on the map of India, Edelweiss Tokio Life Insurance's Zindagi Express has pulled into its final destination Bhopal after journeying 5,500 kms through 50 cities and reaching over 1 million people to spread awareness regarding the need for organ donation in India.

Vishvas Sarang, Minister of Medical Education, and Bhopal Gas Tragedy Relief & Rehabilitation, Madhya Pradesh Government represented Bhopal, the heart of India, in receiving the baton from Zindagi Express.

Over the last 20 days, the life insurer has been undertaking an awareness tour called #PassItOn to educate and mobilise people towards the organ donation cause. Today, the life insurer conducted the finale to this journey, wherein nearly 900 people participated in a marathon with the presence of Smt. Malti Rai, Mayor of Bhopal and Shri Avinash Lavania, Collector and District Magistrate, Bhopal.

Sumit Rai, MD & CEO, Edelweiss Tokio Life Insurance said, "Today's conclusion is an important milestone in our Organ Donation journey. We are heartened to see that people turned out in big numbers not only today in Bhopal, but also throughout the journey, wherever we made a pitstop. This gives us immense confidence to expand our efforts towards this cause in the years to come."

For a 4th year in a row, MOHAN Foundation partnered with the life insurer as a Knowledge Partner and has been instrumental in bringing the subject matter expertise throughout the 20-day journey.



Dr Sunil Shroff, Managing Trustee & Co-Founder, MOHAN Foundation said "India has a long way to go for both creating awareness and setting up processes to help make organ donation a usual everyday event rather than being an unusual one currently. This requires all the stakeholders be it government, private and non-profits to work together. The commitment of entities like Edelweiss Tokio Life will help inspire more such groups to help this noble cause and help in changing this status-quo."

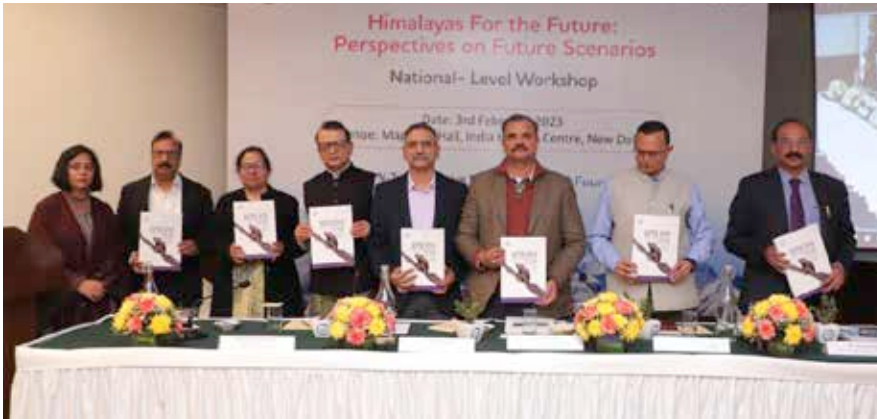
After kicking off its initiative in Hyderabad on January 5, the Zindagi Express has been conducting heavy engagement at 10 pitstops – Mumbai, Nashik, Vadodara, Ahmedabad, Jaipur, and Gwalior on the Western belt and Raipur, Ranchi, Patna, and Lucknow on the Eastern belt. Today, both the Zindagi Express canters converged in Bhopal. The life insurer will additionally be visiting two more cities – Jamshedpur and Gurugram – in the days to come to conduct awareness sessions. These

on-ground efforts have been supported by robust digital, PR, and employee outreach.

Dr. Fr. John P J, Principal, Bhopal School of Social Sciences said "We have a track record of supporting causes of social importance. As an educational institution, we believe it is pertinent for our students, alumni, and the larger community to educate themselves regarding the societal needs and contribute constructively to aide certain causes. Our partnership with Edelweiss Tokio Life is a continuation of that belief."

The life insurer embraced Organ Donation as its flagship social cause in 2019. In the first year alone, it was able to galvanize 1,13,000 organ donation pledges in a single month. In fact, it created a new GUINNESS WORLD RECORDS title for highest number of pledges collected by an organ donation campaign in a single day (54,626 pledges).

Cumulatively, over the last 4 years, the life insurer has been able to reach 70 million+ people through a robust digital and media outreach. 📺



## TATA Group and IUCN are working together for a sustainable future for Himalaya and its communities through the “Himalayas for the Future” initiative supported by TCS Foundation

**T**he recent Joshimath disaster in the sensitive and fragile Himalayas resonated at a national-level workshop on ‘Himalayas for the Future’ (HFF), an International Union for Conservation (IUCN) – Tata initiative supported by TCS Foundation. The panelists including policymakers, scientists, and experts, discussed ways towards securing a sustainable, climate resilient future for Himalaya and its communities.

Held at India Habitat Centre, Delhi, the workshop saw the dissemination of learnings and different knowledge products from the development phase of the HFF initiative aimed towards harnessing the knowledge from experts, policymakers, and practitioners to develop a roadmap for action in the Himalayan region through partnership building. Panel discussions on future perspectives ranged from identifying areas for research, innovation, technology, addressing challenges of land use changes, impacts on biodiversity, climate resilient livelihood options, building capacities for disaster risk reduction and financial innovations for nature positive development in Himalayan region.

The Himalaya for the Future calls for strategies and actions that restore the integrity of Himalayan landscapes, maintain their ecological health, compensate the Himalayan communities through payment for ecosystem services, innovative financial models to sustainably meet the downstream services and resource demand, develop solutions for resilient Himalayan communities to face the impending climate change mediated impacts and align the policies/programmes across sectors ensuring human wellbeing.

HFF, an IUCN - TATA initiative supported by TCS Foundation, aims to work in a phased manner, with the initial development phase focusing on reviewing existing initiatives, research, and literature, mapping, and consulting with stakeholders, developing a tool for quantitative and qualitative modeling of future scenarios to identify possible solutions/interventions. This is the fourth such workshop under this initiative.

The high-profile event saw the esteemed presence of several institutions, practitioners media persons, and experts from across the Himalaya, G B Pant National Institute of Himalayan

Environment, NEHU, WII, NESAC ZSI, DST, TRAFFIC, World Bank, IIM Ranchi, TERI, ATREE, Aaranyak, Balipara Foundation, LeDeG, LEHO, CHIRAG, Centre For Indigenous Culture and Environmental Studies from Nagaland among others. Dr. Rajiv Bhartari, Principal Chief Conservator of Forest & Chairman of Uttarakhand State Biodiversity Board, graced the occasion as the Chief Guest.

Dr. Akhilesh Gupta, Senior Advisor & Head, Policy Coordination & Programme Management Division, Ministry of Science and Technology, in his message for the workshop said “Climate change will have a disproportionate impact on India, especially in the Himalayan region, due to its fragile ecosystem, persistent poverty, increased frequency and intensity of extreme events, loss of biodiversity, and dwindling natural resources.” “We must work together to protect the Himalayan ecosystem. R&D can help assess the impact of climate change on the Himalayan ecosystem as we suggest policymakers initiate necessary adaptive action,” he added.

On this occasion, a short documentary, ‘Himalayan Future: Voices from the ground’ directed by award-winning film-maker Mr. Krishnendu Bose was screened. The film has been shot across different Himalayan states and locations, including Ladakh, Uttarakhand, Sikkim, and Arunachal Pradesh, to capture stories, learning, and issues faced by the communities and the solutions they are innovating. The event also saw the launch of a project publication, “Himalaya For the Future: An Action Plan for Sustainability of Landscape and People.”

“The rate of changes in the IHR is unprecedented in recent decades due to a combination of socioeconomic and geo-political changes. There is an urgent need to consolidate knowledge from academic research, technology and traditional knowledge to strengthen integrated conservation and sustainable development in the fragile region. The HFF is a step in this direction” said Yash Veer Bhatnagar, Country Representative of IUCN India. 📍



Pune, the second largest city in Maharashtra, hosts many industries, including steel, fertilisers and pharmaceutical industries. Image: Katell Ar Gow, CC BY-SA 3.0, via Flickr.

# India is all set for first waste-to-hydrogen project

Hydrogen generated at a facility in Pune will be utilised locally to help the city lower its emissions, manage waste optimally, writes Dimple Behal, Down to Earth

India assumed the Presidency of the Group of 20 this December. The world's third largest emitter is moving beyond a transition strategy based squarely on solar development by branching out into emerging fields such as hydrogen.

India is one of the few countries that has kept to its Paris Agree-

ment (21st Conference of Parties or COP21 to the United Nations Framework Convention on Climate Change) commitments, with an exponential increase in renewable energy capacity.

It is anticipated that by 2050, 80-85 per cent of India's overall power capacity will come from

renewables by achieving the nationally determined contributions commitments. India had committed to increasing the share of non-fossil fuels to 40 per cent of the total electricity generation capacity by 2030.

In the recent COP27, India committed to focusing on the rational utilisation of national resources with regard to energy security. India consumes about six million tonnes of hydrogen annually to produce ammonia and methanol in industrial sectors, including fertilisers and refineries.



This could increase to 28 million tonnes by 2050, principally due to the rising demand from the industry.

Ever since the Union Ministry of New and Renewable Energy (MNRE) shared that it is time for green hydrogen, private players have been looking for new technologies to generate it.

With the challenges of electrolyser capacity for generating green hydrogen globally, finding alternatives to foster green hydrogen in the country is essential.

The central government, the prime facilitator of such projects, has been coming up with new initiatives, policies and schemes to unleash the potential of green hydrogen generation and boost its demand.

The long-term low-emission development strategy of the country submitted to UNFCCC at COP27 focused on the rational utilisation of national resources for energy security in a just, smooth and sustainable manner.

### Pune shows the way

What could be a better resource than the waste being generated in India today? Pune Municipal Corporation (PMC) has taken an innovative step forward to eliminate the waste generated in the city.

PMC has partnered with business enterprise The Green Billions (TGBL) to manage its waste and generate it into useable green hydrogen. TGBL's special purpose vehicle or subsidiary, Variate Pune Waste to Energy Private Ltd, will be undertaking the work.

The new facility for generating hydrogen from waste will solve two major problems: Inefficient waste management and carbon emissions. Waste management is one of the prime issues in the country, which is blamed for generating pollution in the surroundings.

Now it can show the path for generating green hydrogen.

Pune, the second largest city in Maharashtra, hosts many industries, including steel, fertilisers and pharmaceutical industries. The emissions in the city increased by 12 per cent to 1.64-tonne carbon dioxide equivalent (tCO<sub>2</sub>Eq) per capita in 2017 from 1.46 tonne tCO<sub>2</sub>Eq per capita in 2012.

The numbers were noted by the Pune Resilience Strategy report by the UN project 100 Resilient cities. PMC's step shows a holistic approach to reducing its emissions and managing waste.

Variate Pune Waste to Energy Private Ltd will be managing and utilising the municipal waste of 350 tonnes per day (TPD) for generating hydrogen for 30 years. This waste will comprise biodegradable, non-biodegradable and domestic hazardous waste.

This waste would be segregated at the facility by TGBL in Pune using optical sensor technology.

The Refuse-Derived Fuel (RDF) from the waste would later be utilised to generate hydrogen using plasma gasification technology. The technology has been developed while closely working with the Bhabha Atomic Research Institute (BARC) and the Indian Institute of Science, Bengaluru.

It is estimated that 150TPD RDF and 9MT tonnes of H<sub>2</sub> would be generated out of 350 TPD waste.

The hydrogen generated at the facility will be utilised locally to help the city lower its emissions. As the Centre is focusing on industrial decarbonisation and facing the challenges of just transition, the project can prove to be a game-changer in helping industries reduce carbon emissions.

"With this project, Pune city can reduce up to 2.5 million tonnes carbon dioxide equivalent, over 3.8 million tonnes waste would be diverted from the landfill/dumping site and more than 180,000 estimated households will be served

directly," according to a TGBL statement. The municipal solid waste dumped in low-lying urban areas can be diverted, which needs 689.5 cubic metres of space every day and 25.16-hectare metres of precious land per year, TGBL added.

Waste-to-Energy plants are viable only when the plant can process at least 300 TPD, according to the task force report on Waste to Energy, 2014, by the erstwhile-Planning Commission, now known as NITI Aayog. Therefore, WTE plants should be set up in large cities with a population above 2 million, it said. Based on this, the project will manage 350TPD waste for Pune, which has a population of more than 7 million.

In India, where the hydrogen industry is nascent, it is imperative to keep the cost of hydrogen competitive to expand its usage in various sectors. TGBL will work on the same by making hydrogen affordable and easier to switch in the just-transition.

Mahatma Phule Renewable Energy & Infrastructure Technology (MAHAPREIT), a Maharashtra government undertaking, has proposed to offtake the hydrogen generated at the facility and develop logistical infrastructure for hydrogen transportation to industries for this.

For the first phase of the project, MAHAPREIT proposes blending in the city gas distribution network in Pune by partnering with Maharashtra Natural Gas Ltd (a joint venture of GAIL (India) Ltd and Bharat Petroleum Corporation Ltd (BPCL).

GAIL has already pioneered hydrogen blending projects with the natural gas supplier in Indore, Aavantika Gas Ltd, and has the technological and operational expertise to implement such projects. ■

*This story was originally published on Down to Earth.*

(Source: <https://www.eco-business.com/news/india-is-all-set-for-first-waste-to-hydrogen-project-2/>)



In 2021, more than three quarters of malaria cases in WHO's Southeast Asia region were concentrated in India with case increases also seen in Bangladesh, the Democratic People's Republic of Korea and Indonesia. Image: SETAF-Africa, CC BY-SA 3.0, via Flickr.

# Smartphone operated tool uses light beam to detect malaria

A smartphone-operated spectrometer has been developed to detect changes in blood caused by malaria.

**A** quick, affordable, non-invasive detection tool could help accelerate progress in meeting the UN Sustainable Development Goals' target to eliminate malaria, say researchers who developed it.

The WHO's global technical strategy for malaria 2016–2030 aims to reduce malaria incidence and mortality rates by at least 75 per

cent by 2025 and at least 90 per cent by 2030 against a 2015 baseline.

But by 2021, malaria case incidence and deaths are both off track by 48 per cent. Based on the current trajectories, the world will be off track in reaching the malaria targets by 88 per cent, according to Abdisalan Noor, head of the Strategic Information for Response Unit, WHO Global Malaria Programme. To help get back on track, researchers from

Australia and Brazil have come up with a handheld, smartphone-operated, near-infrared spectrometer that shines infrared light for about five seconds on a person's ears, arms, or fingers to detect changes in the blood caused by malaria.

They hope it could be used for the WHO-proposed universal screening that is a part of current malaria elimination strategies.

"If we can detect a large proportion of asymptomatic patients, they can receive treatment and prevent transmission to others, particularly children under the age of five years," says Maggy Lord, lead author of the research, published 7 December in PNAS Nexus.

"By shining light on a body part, an infrared signature is detected through a phone or a computer," Lord, a researcher at the University of Queensland's School of Biological Sciences, tells SciDev.Net. "This infrared signature is a reflection of what is present in the bloodstream of a person. [As] malaria infects red blood cells causing both structural and chemical changes — these changes are what is observed in the reflected signature."

Computer algorithms are then used to develop predictive algorithms that can differentiate malaria-infected people from the uninfected, giving results in real-time, she explains.

"These off-the-shelf spectrometers cost roughly US\$2,500, but do not require sample processing procedures nor reagents to operate and therefore could easily be scaled up



**Sensitive diagnostics will play a key role in surveillance and early detection of outbreaks as malaria control efforts intensify and countries progress to elimination phases.**

— JANE ACHAN

Senior research adviser,  
Malaria Consortium

to scan an estimated 1,000 people per day per device," adds Lord.


The tool is the outcome of a research collaboration between Australia's University of Queensland and Brazil's Instituto Oswaldo Cruz.

The technology could also help tackle other vector-borne diseases, such as Zika and dengue in asymptomatic people, who act as a reservoir for transmission by mosquitoes, says Lord. "This was just proof of concept and with further funding, we will expand the study to other malaria endemic areas before we can recommend these devices for clinical use. We are extending our work with partners in Kenya and Tanzania," she adds.

The WHO's 2022 World Malaria Report stresses the need for investment in new tools, along with strengthening health systems and increasing funding. There were an estimated 619,000 deaths and 247 million cases of malaria globally in 2021. While African countries accounted for about 95 per cent of cases and 96 per cent of deaths, nine malaria-endemic countries in the South-East Asia region contributed to about two per cent of the malaria burden last year.

In 2021, more than three quarters of malaria cases in WHO's South-East Asia region were concentrated in India with case increases also seen in Bangladesh, the Democratic People's Republic of Korea and Indonesia. In WHO's Western Pacific region, Papua New Guinea accounted for 87 per cent of all cases in 2021, followed by the Solomon Islands, Cambodia and the Philippines.

Malaria Consortium's Senior Research Adviser Jane Achan says, "Sensitive diagnostics will play a key role in surveillance and early detection of outbreaks as malaria control efforts intensify and countries progress to elimination phases. As such, new and innovative diagnostic tools are urgently needed, especially in light of emerging threats to the effectiveness of some of the tools currently available."

"Non-invasive malaria diagnostic tools are attractive as a rapid, reagent-free and affordable approach, but their sensitivity and specificity need to be confirmed in endemic settings and evidence gathered on how they can be integrated into healthcare practice universally," Achan, who is not connected with the study, tells SciDev.Net. 

*This article was originally published on SciDev.Net. Read the original article.*

(Source: <https://www.eco-business.com/news/smartphone-operated-tool-uses-light-beam-to-detect-malaria/>)

**In 2021, more than three quarters of malaria cases in WHO's South-East Asia region were concentrated in India with case increases also seen in Bangladesh, the Democratic People's Republic of Korea and Indonesia.**





# Climate-focused development banks neglect nature ahead of COP15

Development banks are paying far more attention to climate than nature, analysts say, calling for a sea-change at the COP15 biodiversity summit in Montreal.

**T**he world's development banks could play a major role in protecting nature, but are largely ignoring biodiversity in a climate-led financing push, environmentalists warn, calling for action to fix the imbalance at this month's COP15 UN summit.

About 195 nations are tasked with finalising a new accord to halt and

reverse damage to plants, animals and ecosystems at the Dec. 7-19 conference in Montreal, Canada.

The need for more financing for poorer nations, to help them meet new targets likely to be set at COP15, has long been a sticking point in the talks to hammer out a biodiversity pact, already hit by Covid-19 delays.

Multilateral development banks (MDBs) could do more in brokering

an ambitious agreement on a new global biodiversity framework and implementing it, green groups said.

"MDBs are not where they should be. Their biodiversity portfolio is lagging behind their climate one," said Li Shuo, a policy advisor at Greenpeace China.

"Whether more MDBs can commit to allocate more resources to the nature protection agenda will be a key test of the success of COP15," he said in an interview.

Boosting conservation and management of natural areas, such as parks, oceans, forests and wildernesses, is seen as crucial to safeguarding the ecosystems on which humans depend and to limiting global warming to internationally agreed targets.

But forests are still being cut down - often to produce commodities such as palm oil, soybeans and beef - destroying biodiversity and threatening climate goals, as trees absorb about a third of planet-warming emissions produced worldwide.

Investments in protecting and better managing the world's ecosystems must reach \$384 billion a year by 2025, more than double their current levels, a UN Environment Programme report said this week.

MDBs must prioritise green finance and incentivise private investment, especially in sustainable supply chains, it added.

## Momentum growing

Public development banks are owned by governments at international, regional and national levels, and their assets combined make up about 10 per cent of global investment.

Most lend to nature-sensitive sectors - notably agriculture, mining and infrastructure - whose activities are often carried out in environments rich in biodiversity.

Researchers warned last year that lending by public development

banks could destroy nature worth \$800 billion annually, and urged greater transparency to reduce the risks.

European Investment Bank (EIB) President Werner Hoyer said last month he hoped the upcoming biodiversity summit would help MDBs accelerate their nature efforts.

An EIB spokesperson said the bank is committed “to protecting nature, forests and oceans”, citing its support for the Althelia Climate Fund which invests in sustainable land use.

The Asian Development Bank, which will participate in COP15, has “long supported environmental sustainability”, a spokesperson said, adding the bank had raised its climate finance goal for 2019-2030 from \$80 billion to \$100 billion - and expects a significant share to go toward nature investments.

Examples of MDB nature finance include a hydropower project in the Solomon Islands with a biodiversity protection plan, backed by the World Bank and others, and a World Bank project in Sumatra, Indonesia, to curb emissions from forests and peatland by promoting sustainable fishing and alternative livelihoods.

Earlier this year, the Climate Investment Funds, one of the world's largest climate finance instruments working with six major MDBs, launched a fund aiming to invest at least \$500 million in protecting nature in developing countries.

Toerris Jaeger, head of the Rainforest Foundation Norway, said extensive funding was needed to protect remaining biodiversity hotspots - and MDBs have “a huge role” to play here, while ensuring their investments do not harm nature.

Very few development banks have policies that are in line with government commitments on biodiversity, he noted.

A year ago at the COP26 climate summit in Glasgow, a group of MDBs



**There is good momentum that needs to be paired with action to meet the moment. This issue should be much higher on the agenda for all public development banks.**

**—MARGARET KUHLOW**  
Finance Lead, WWF International

issued a statement recognising the importance of nature and pledged to co-operate on bolstering biodiversity protection.

Development banks, meanwhile, increased their climate-related financing by about a quarter to \$82 billion in 2021, an October report by the lenders showed.

Margaret Kuhlow, finance lead at WWF International, urged MDBs to commit to step up their nature funding too, and align their investment approach with biodiversity protection, as they have promised to do with the Paris Agreement's climate goals.

“There is good momentum that needs to be paired with action to meet the moment,” she added.

“This issue should be much higher on the agenda for all public development banks.”

### Turning big ships

Traditionally for MDBs, biodiversity has always been a backwater issue, said Rod Taylor, global director for forests at the World Resources Institute, a US-based think-tank.

It is one factor behind the push at COP15 to set conservation targets

that are as clear as the Paris pact goals for climate, he added.

“The MDBs ultimately get their marching orders from big things like that, that set the direction for them,” Taylor said.

Efforts by business to push leaders to force large companies to assess and disclose their impact on nature by 2030 will also boost transparency on where investments are made, he noted.


“Things like that can turn these big ships around because you are pricing the impacts on nature into those investments,” Taylor said.

Brian O'Donnell, director of the US-based Campaign for Nature, said until recently, multilateral banks had been a “no show” when it comes to financing biodiversity and instead focused heavily on climate after waking up to its importance.

For every dollar of climate financing they provide, MDBs put up only one to two cents for biodiversity, which adds up to no more than \$1 billion a year for nature protection in low and middle-income countries, he noted.

He urged the banks to start reporting on their biodiversity funding as they do for climate finance, while dramatically raising it to a similar level.

They can also catalyse other sources of finance by leading reforms in lending and investment practices to benefit nature, he said.

“Biodiversity has not been the priority that it needs to be for multilateral banks,” O'Donnell emphasised. 

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*(Source: <https://www.eco-business.com/news/climate-focused-development-banks-neglect-nature-ahead-of-cop15/>)*



A bio-CNG plant in the southern state of Tamil Nadu. Image: R. Vishnunath.

# India wants to use bio-CNG to manage farm waste and reduce fossil fuel imports

Compressed biogas, or bio-CNG, is likely to play a crucial role in India's energy transition. But entrepreneurs say the business environment is dispiriting and approvals must be fast-tracked.

**W**hen India's agrarian state of Punjab inaugurated a compressed biogas plant in October 2022, it sought to address one of the state's biggest environmental problems: the nefarious practice of setting afire rice residue after harvest, which smothers northern India in smog during the winter months.

About 20 million tonnes of paddy straw is generated annually in Punjab, India's third-biggest rice producing state, and much of it is set

aflame because farmers have a very short window to clear the fields for sowing wheat crop for the winter. The state registered 16,004 counts of farm fire in October 2022.

The compressed biogas (CBG), or bio-CNG, plant would utilise rice stubble in a productive way, curbing farm fires and carbon dioxide emissions. India imports about 50 per cent of its compressed natural gas (CNG) needs, and the government wants to use bio-CNG to realise numerous benefits: reduce imports, utilise most of the biomass waste generated in the country, reduce carbon dioxide

emissions as bio-CNG engines' carbon emissions are 40 per cent lower than those of natural gas, provide a buffer against energy security concerns caused by global gas price fluctuations, and help India achieve its climate goals.

However, entrepreneurs from other states warn, the government must remove major roadblocks for this aspiration to be realised.

## Biomass waste conundrum

With a large farming population, India generates about 350 million tonnes of agricultural waste every year. While paddy stubble management is a problem in northern India, in the western coastal state of Maharashtra, managing sugarcane residue is a major challenge. India is the world's largest producer of sugar. In sugar-making, 100 tonnes



of sugarcane produce about four tonnes of residue called press mud. In 2022, India produced sugar from 357 million tonnes of sugarcane, generating 14 million tonnes of press mud. These millions of tonnes of farm waste – and similar organic waste from hotels and dairy farms – can be used as raw material to produce biogas.

The purified and compressed form of this biogas is known as bio-CNG, because it compares with the composition and energy potential of CNG, a fossil fuel primarily composed of methane. As a cleaner alternative to CNG – since it comes from waste, reduces net methane emissions from naturally decomposing farm waste, replaces the use of fossil fuels, and produces lesser particulate emissions on burning – it provides a cost-effective alternative to CNG that can be used in transport and industry.

### Indian government's bio-CNG initiative

The government's Sustainable Alternative Towards Affordable Transportation (SATAT), launched in 2018, aims to help entrepreneurs set up plants to produce bio-CNG and supply it to oil marketing companies (OMCs), the large, conventional fuel suppliers. These OMCs will sell bio-CNG as an automotive and industrial fuel.

The initiative hasn't taken off: against a total of 3,694 plants that were approved, only 38 have been commissioned so far. The targeted production and sale of 15 million tonnes of bio-CNG by 2023 has been overwhelmingly underachieved – only 9,019 tonnes have been sold.

### High cost and lack of finance

The capital cost of setting up a bio-CNG plant varies with the raw material (called feedstock), technology and other factors.

A 100-tonne-per-day (TPD) plant using paddy straw as feedstock would cost Rs 70 to 80 crore (an Indian measurement of 10 million)



Some villagers opposed the bio-CNG plant's construction and operation, mistaking its dome for that of a nuclear reactor. Image: R. Vishnunath.

(US\$8.5-9.7 million); using cow dung or chicken litter would cost Rs 31 crore (US\$3.8 million). The minimum 2-TPD capacity that SATAT allows also entails an investment of several crores.

In September 2020, the Reserve Bank of India (RBI), India's central bank and banking regulator, mandated that banks would set aside funds to provide loans to bio-CNG plants by according them priority sector lending status. Yet, entrepreneurs find loans hard to come by.

"Banks are asking for 100 per cent collateral security, even though the RBI has directed them to give loans without collateral," said S. Chinnappan of SLR Energy in the southern peninsular state of Tamil Nadu.

Chinnappan's proposed feedstock was press mud and sugar mills gave written assurance of a steady supply of press mud. But a government-owned bank rejected his loan application, saying some other sugar mills had shut down operations and press mud supply would dwindle.

Chinnappan got a private bank to lend him 50 per cent of the project cost of Rs 12 crore (US\$1.5 million), but only after pledging property worth Rs 7 crore (US\$0.9 million; 58 per cent of the project cost) as col-

lateral. He wasn't able to avail of the RBI-notified 2 per cent interest subvention (discount) either, he said.

### Subsidy and pricing

Given the high capital and operating costs, the Ministry of New and Renewable Energy (MNRE) offered a waste-to-energy subsidy until March 2021. Chinnappan had applied for the subsidy in 2019, but it didn't come through. After a break, the subsidy was restarted in November 2022 and he expects to receive it in early 2023.

CBG prices have also been fixed much lower than fossil fuels', said Sameer Rege of Mailhem Environment Pvt Ltd, a waste management company based in Pune in the western coastal state of Maharashtra, even though the calorific value of a kilogram (kg) of bio-CNG is almost equal to that of a litre of petrol. "Petrol costs Rs 110 (US\$1.34) per litre. But bio-CNG costs Rs 54 per kg (US\$0.66) as per SATAT policy," he said. "Government should instead pay a premium on bio-CNG as it is renewable source unlike petrol."

LPG (liquefied petroleum gas), a fossil fuel, sells for Rs 115 per kg, whereas bio-CNG supplied to restaurants fetches Rs 80 (US\$0.97) per kg, said D. Hari Babu of Haritham Innovative Technologies, a consul-

tancy based in the southern state of Andhra Pradesh.

### Lack of awareness

From local administrations to the public, lack of awareness about bio-CNG creates further problems for entrepreneurs.

Vishnunath of Maha Shank Energy LLP, which has a plant in Tamil Nadu, said he had to educate local villagers. “They had complained to the local administration mistakenly thinking that the plant’s dome was a nuclear reactor!” he said.

The Tamil Nadu State Pollution Control Board, the state’s pollution regulator, couldn’t decide whether the plant should be put in the green or orange category of polluters. As per the board’s pollution index, plants are categorised as red, orange, green or white, where red indicates the most polluting and white the least.

Eventually, in September 2021, the Central Pollution Control Board – whose regulations apply across the country – put bio-CNG plants in the white category.

Although SATAT envisages a single-window approval for bio-CNG projects, Vishnunath found it hard to get approvals because officials didn’t understand the process. “We applied for a no-objection certificate through the single-window system. Since ours was the first plant in the south [of India], the officials were unsure about the process. So I went to each department for respective approvals,” he told Eco-Business. In the end, the approvals took more than eight months and multiple visits to 17 different departments.

A parliamentary review of SATAT in December 2022 took a grim view of these delays and recommended a blanket approval, among various other recommendations.

### Logistics and sales

After starting operations in 2021, Vishnunath supplied bio-CNG to local industries for heating for a year.

But storing and transporting the 5.5-tonne cascades – large racks of cylinders in which the gas is stored – posed practical difficulties.

Rege of Mailhem says injecting directly into the national gas grid is most cost-effective, as it avoids the expense and equipment for compressing gas, filling it into cascades and transporting them.

Mailhem has its own bio-CNG dispensing pump, much like a petrol or diesel station. It sells the surplus to OMCs. From one of Mailhem’s plants, gas is injected into the national gas grid that supplies gas for automotive, domestic cooking and commercial uses.

Due to lack of awareness and the logistical problems, offtake of

Vishnunath, “If they did, it would be easier for us.”

As a result, some plants sell the gas to restaurants instead of waiting for OMCs to procure.

But the biggest problem is selling the manure, the residue from bio-CNG making, said Chinnappan.

“We get 30-40 kg of purified gas and 950 kg of manure from one tonne of raw material. Rich in nutrients, this manure can improve soil and plant fertility,” said Chinnappan. Although the government has mandated fertiliser manufacturing companies to buy this organic manure from bio-CNG plants, this mandate is not being implemented yet, he said.

Vishnunath told Eco-Business that when he used the manure on his own




Bio-CNG is supplied in 5.5-tonne cascades - large racks of cylinders - whose weight and dimensions create practical difficulties for small industries to use the bio-CNG. Image: R. Vishnunath.

bio-CNG has been slow. Chinnappan’s plant had to partially flare the gas produced from June 2021 to April 2022, leading to unnecessary wastage and costing dearly in terms of lost sales.

“Whether there is demand or not, the plant has to produce gas. We have to constantly feed live bacteria or cow dung to prevent decay of the waste. So, we can’t shut down or pause production,” explained Chinnappan. “Flaring was the only option.” Six months ago, oil marketing companies started buying the gas, much to the entrepreneurs’ relief. “But OMCs have no mandate to take a minimum quantity,” said

farm and saw increased yields, some organic farmers started to purchase manure from his plant.

But such purchases have been piecemeal, and the quantity of manure produced is large. The producers say the government must buy in bulk and sell it to farmers at a subsidy. 

*This story has been produced as part of Earth Journalism Network’s Renewable Energy Story Grant 2022.*

(SOURCE: <https://www.eco-business.com/news/india-wants-to-use-bio-cng-to-manage-farm-waste-and-reduce-fossil-fuel-imports/?sw-login=true>)

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