

CSR TODAY

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CHILDREN OF INDIA'S BURNING COALFIELDS DREAM OF A **FIRE-FREE FUTURE**

Coal workers hope education can help the next generation win cleaner, healthier jobs in a region that has been wedded to dirty, dangerous mining for over a century.



CSR INTERVIEW

An Interaction with Prof. (Dr.) Ajay Rana on the impact of CSR on Education and how Amity University, Greater Noida Campus and the entire Amity Education Group is making its efforts to contribute to People, Planet & Society.



CSR TODAY

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Nations reach 'historic' deal to protect nature



Rajesh Tiwari
Publisher
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The Kunming-Montreal agreement is not legally binding but it will require signatories to report their progress towards meeting targets such as the protection of 30 per cent of Earth's surface by 2030 and the restoration of degraded habitats.

Nations have agreed to protect a third of the planet for nature by 2030 in a landmark deal aimed at safeguarding biodiversity.

There will also be targets for protecting vital ecosystems such as rainforests and wetlands and the rights of indigenous peoples.

The agreement at the COP15 UN biodiversity summit in Montreal, Canada recently - and this is a major step for future even as we enter 2023. The deal promises to live in harmony with nature by 2050.

The Kunming-Montreal agreement is not legally binding but it will require signatories to report their progress towards meeting targets such as the protection of 30 per cent of Earth's surface by 2030 and the restoration of degraded habitats.

Not everyone is happy with the settlement, or convinced enough has been promised to avert mass extinctions. Thankfully, research has revealed a lot about the best ways to revive and strengthen biodiversity - the variety of life forms, from microbes to whales, found on Earth.

UN Secretary General Antonio Guterres hailed the deal and said: "We are finally starting to forge a peace pact with nature."

The main points include:

- Maintaining, enhancing and restoring ecosystems, including halting

species extinction and maintaining genetic diversity

- "Sustainable use" of biodiversity - essentially ensuring that species and habitats can provide the services they provide for humanity, such as food and clean water
- Ensuring that the benefits of resources from nature, like medicines that come from plants, are shared fairly and equally and that indigenous peoples' rights are protected
- Paying for and putting resources into biodiversity: Ensuring that money and conservation efforts get to where they are needed.

"It is truly a moment that will mark history as Paris did for climate," Canada's Minister for the Environment and Climate Change Steven Guilbeault told reporters. The Paris climate deal saw nations agreeing in 2015 to keep world temperature rise below 2C.

The summit in Montreal had been regarded as a "last chance" to put nature on a path to recovery. Throughout the talks there was division over the strength of ambition and how to finance the plans.

One big sticking point was over how to fund conservation efforts in the parts of the globe that harbour some of the world's most outstanding biodiversity.

Biodiversity refers to all the Earth's living things and the way they are connected in a complex web of life that sustains the planet. 🌱

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TATA Projects, CSIR-IIP ink MoU for Clean Energy Solutions

TATA Projects Limited, one of the infrastructure companies inked a Memorandum of Understanding (MoU) with the Council of Scientific and Industrial Research – Indian Institute of Petroleum (CSIR – IIP) to collaborate and work together towards ensuring clean energy solutions.

As part of this endeavor, clean energy solutions such as room temperature bio-diesel produced from CSIR-IIP shall be used across some of Tata Projects' ongoing sites. Further, the partnership will also actively explore utilization of by-product Green Diesel from the existing DILSAAF™ (Drop-In Liquid Sustainable Aviation Fuel and Automotive fuel) Pilot Plant at CSIR-IIP's campus in Dehradun and proposed commercial scale demonstration unit in Tata Projects' fleet.

Construction and infrastructure remains one of the largest industry sectors in India. Thousands of light and heavy vehicles, including various types of construction equipment – both small and large – are utilized during project execution. If even a portion of these vehicles and equipment are migrated from diesel to a cleaner energy source, the shift will ensure lower emissions and a more sustainable future for the sector and the planet.

Mr Vinayak Pai, Managing Director – Tata Projects Ltd, said, "We are proud to partner with CSIR- Indian Institute of Petroleum, in taking their indigenous, sustainable, bio-based technologies to our

construction sites, in our efforts to decarbonize the hard to abate engineering and construction industry. As part of the Tata Group's commitment to the planet, our shift to cleaner alternate energy remains at our core, and we look at continuous collaboration between academia and industry, to find innovative pathways to that goal."



(L to R) Dr Anjan Ray, Director - CSIR-IIP and Mr Vinayak Pai, Managing Director - TATA Projects Ltd signing the MoU

Dr Anjan Ray, Director - CSIR-IIP, affirmed that "CSIR-IIP is excited to progress this partnership with Tata Projects Ltd as a specific thrust within the ambit of our initiatives with Tata Sustainability Group. The MoU aligns well with our mandate to reduce India's energy imports and enhance national self-reliance by repurposing waste and under-utilized local renewable carbon resources."

CSIR - Indian Institute of Petroleum is located at Dehradun and dedicated to R&D in the hydrocarbon sector. Its charter is to provide competitive and sustainable technologies and products to meet the requirements of the ever-growing energy sector and develop capacity and capability in new energy areas such as bio-, hydrogen and

solar energy and their innovative combinations.

The Tata Sustainability Group ("TSG") serves as a Centre of Excellence and nodal resource on sustainability for Tata group companies. It has, since its formation in 2014, been partnering with Tata group companies to embed sustain-

ability in their business strategies and transition them to a low carbon scenario. The Tata Group recently outlined a transformative vision on sustainability which envisages the Group becoming Net Zero by 2045. The Tata group has been ranked as the top Sustainability Leader in Asia Pacific and the only Asian company to appear among the top 15 corporates globally as per the GlobeScan Sustainability Leaders Survey, 2022.

SAGE Foundation adds UnLtd India's incubation program to its portfolio

The Shahani Academic and Global Empowerment Foundation (SAGE Foundation), the non-profit arm of The Shahani Group, has announced that effective January 2023, it will take over the brand and operations of UnLtd India, a leading Indian incubator for social enterprises, from Social Entrepreneurs Foundation India (SEFI). SAGE Foundation will now incubate social startups and NGOs in addition to the work it already does towards upskilling low-income youth for white-collar jobs. As part of their efforts to scale up the operations of UnLtd India, SAGE Foundation intends to incubate 1500 social entrepreneurs, Founders of NGOs/ Social Enterprises over the next 5 years.

UnLtd India was one of the first incubators to support early-stage social entrepreneurs and Founders of NGOs / Social Enterprises across India. Over the last 14 years, it has incubated 318 social entrepreneurial ventures, including Phool, Arpan, FUEL and many others. Its incubatees have impacted 19.5 million lives and raised more than Rs. 30 billion until now. UnLtd India supports young organisations across the spectrum, from livelihoods, climate change, education to gender, and inclusive development. These organisations are built on ideas that will lead to increase in income and or reduce the vulnerability of underserved communities and the environment as a whole.

SAGE Foundation has been working tirelessly to provide key in-demand industry skills to

under-privileged Indian youth, to make them job-ready and secure employment in the BFSI sector, with support from Thadomal Shahani Centre For Management. Till date, they have trained over 12,000 youth and have successfully placed over 90% of its graduates with leading Indian companies, such as Deloitte, Accenture, HDFC, Kotak & others

Combining these job skilling and incubation activities under one roof allows sharing of resources to reduce costs and enhance scalability. Transitioning the brand and operations of an incubator from one non-profit, Social Entrepreneurs Foundation India (SEFI), to another, SAGE Foundation, is the first such transaction of its kind in the Indian non-profit sector. It could serve as a model to other non-profits looking to consolidate their operations.

Commenting on the development, Dr. Akhil Shahani, MD, SAGE Foundation, The Shahani Group, TSCFM, and ask.CAREERS, said, "We are thrilled to bring UnLtd India into our fold, and become a part of their amazing journey. At SAGE Foundation, we have been tackling the pressing social issue of empowering under-resourced youth with the education and skills that will enable them to obtain sustainable livelihoods so that they may uplift their and their families lives through white collar employment, which offers job security and better incomes, as opposed to the daily wage jobs they would otherwise have to take.

By adding UnLtd India's brand and its operations, we have further deepened our commitment to

solving India's social problems – this is a natural extension of the work we have already been doing, and we now look forward to helping social entrepreneurs and NGO founders in realising their vision for the betterment of Indian society. UnLtd India and Anshu Bhartia have already done some really excellent work in the past decade and a half. We intend not only to continue these efforts but also to scale up the operations exponentially."

Discussing the announcement, Anshu Bhartia, CEO, UnLtd India, said, "UnLtd India has been committed to supporting passionate individuals who want to solve a pressing social need through entrepreneurship. Our commitment is to help an individual in their journey of becoming an entrepreneur and an idea to a sustainable high impact organisation. Scaling our work using technology, partnerships, eco system resources, at the most optimal cost were key considerations for our long term continued impact, meeting a deeply underserved need. Transitioning the brand and it's work to SAGE Foundation led by Dr. Shahani, a Founding and Governing Board Member of UnLtd India was a no brainer. The team of UnLtd India and I are very excited that the organisation will be scaling under the umbrella of The Shahani Group and with Akhil's leadership. This will ensure that UnLtd India's focus on supporting social entrepreneurship will not be diluted and that the organisation will be able to help many more social enterprise and NGO founders every year."

Dabur joins hands with CIFOR-ICRAF to promote agroforestry and trees outside forests in India

India's leading Science-based Ayurveda company Dabur India Limited joined hands with the Center for International Forestry Research (CIFOR) and World Agroforestry (ICRAF) to roll out a mega initiative aimed at improving trees, fruits, medicinal and aromatic plantation practices on farms, outside forests areas, using agroforestry across Uttar Pradesh, Haryana, Rajasthan, Odisha, Andhra Pradesh, Assam and Tamil Nadu.

The initiative, which will play a critical role in increasing the tree cover outside demarcated forest areas and on farmlands, will go a long way towards helping India to achieve climate mitigation targets in the forestry sector, while also supporting sustainable livelihoods for communities.

“At Dabur, Nature is the life-line of our business. With a range of products based on nature and natural ingredients, we depend on nature's bounty to deliver on our promise of delivering holistic health & well-being to every household. Managing natural resources sustainably comes naturally to us and we encourage the same across our value chain. Dabur is proud to be partnering with CIFOR-ICRAF on boosting agroforestry and trees outside forests. This is a step forward in our Environment Sustainability strategy of preserving ecosystems and halting land degradation the accelerated loss of biodiversity,” Dabur India Ltd Chief Executive Officer Mr. Mohit Malhotra said.

Under this project, Dabur will focus on the domestication of selected medicinal tree species and medicinal plants, besides establishing satellite nurseries in states to ensure the availability of quality



planting material for the selected plant species.

CIFOR-ICRAF is leading the implementation of the Trees Outside Forests in India (TOFI) Program, which is a five-year joint initiative of the United States Agency for International Development (USAID) and the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India under the bilateral agreement on Sustainable Forestry and Climate Adaptation. The main goal of the TOFI program is to significantly expand the area under trees outside forests thereby, enhancing livelihoods and ecosystem services in the seven participating states- Andhra Pradesh, Assam, Haryana, Odisha,

Rajasthan, Tamil Nadu, and Uttar Pradesh. The initial phase of the collaboration with Dabur will be initiated through the TOFI Program.

Dr Ravi Prabhu, Director General a.i., ICRAF said: “We are glad to collaborate with India's leading science-based Ayurveda company-Dabur India Limited. Through this partnership, we look forward to developing a partnership through which smallholders and tree growers in participating states are enabled to produce the kinds of tree-based raw materials required by Dabur. This will not only help in augmenting the livelihoods of the smallholders but will also promote sustainable production and harvesting of tree-based products of medicinal value while supporting India's larger development goals and NDC targets.”

Other priority activities under the agreement include developing a business model through which Dabur can buy back the final produce from the community; and developing optimum harvesting protocols for commercially important medicinal plants.

Sustainable Travel takes Center Stage during Amadeus Hackathon

Sustainability in travel was the focus of Amadeus' worldwide hackathon, which saw more than 2,500 student registrants. The hackathon offered students an opportunity to code on a cloud native platform and compete for prizes. These included internships with Amadeus and other industry partners.

The virtual event, held over the course of October, saw over 100 university students advance to participate in the final challenges related to Sustainable Development Goals (SDGs), Emission Offsetting and Green Hotels, among others.

A member of the team that won the 'Sustainable Development Challenge' and recent computer science graduate from the Netherlands, Kimberly Dijkmans, said, "I really enjoyed participating in this hackathon and I discovered a lot about sustainability in travel. The topic is very important to me personally – so the lessons I gained from this hackathon will go a long way towards my future career decisions. I also had an opportunity to work with a diverse group of people from around the world and am happy to have made new friends who are passionate about the same subject. I also feel my coding skills improved: I learned Java at university – but through this hackathon – I developed new skills. I used Figma for the first time to create a prototype and React to create a web app. We also worked on GitHub as a team – which was new for me. The feeling of being part of a community was great. Amadeus did a lot to make us all feel involved – we had webinars, mentor sessions, and the Work Adventure platform created a sense of togetherness."

Dijkmans' team developed 'FlyLight', an app that rewards

travelers when the weight of their luggage remains below an airlines' luggage allowance. This helps airlines reduce the amount of fuel they need for certain flights.

During the two weeks, participants received insights and support from leaders of some of the biggest players in the travel and tech industries, including representatives from Air France-KLM, Etihad, Microsoft, Red Hat, MongoDB, CHOOOSE, Woosmap, Airbus, American Airlines, United Nations World Tourism Organization (UNWTO), Saving the Amazon and others. The students also enjoyed a fun coding platform, a virtual DJ, yoga sessions, and interactions with talented mentors.

Christophe Bousquet, Chief Technology Officer, Amadeus, said, "My congratulations to all of the student winners of our worldwide hackathon. The actions we take today to make travel more sustainable could have a profound impact on how the future looks. This hackathon was about empowering the next generation of coders to make a difference. We view sustainability and humanity's response to climate change as one of the greatest challenges of our lifetime. As such, this hackathon was a prime opportunity to reflect on the way travel and coding can deliver a positive environmental and social impact. The entire travel industry must put its best minds together to come up with the innovative solutions required to create a better future."

The event offered Amadeus the opportunity to engage with new talent who share an interest to make travel more sustainable.

As an important global player in the travel industry with the ability to drive sustainability through technology, Amadeus has both a responsibility

and an opportunity to be a catalyst for positive change. Against this background, the company's environmental sustainability strategy focuses especially on three main pillars: reducing Amadeus own impacts; supporting Amadeus customers by providing solutions that help mitigate their environmental impact and collaborate with key industry stakeholders to drive change collectively through a variety of initiatives.

- Inspiration phase challenge winner: PlanIT, an app to plan trips and minimize carbon footprint at every step along the way with eco-friendly suggestions
- Carbon offset challenge winner: Eco Motion, a mobile application used to compute multi-modal itineraries and compare them based on time, cost, and information like CO2 consumption
- Green hotel challenge winner: Sustainable Hotel Booking, provides a selection of hotels using metrics such as distance, transport type, type of area, cost, and space
- Sustainable development challenge winner: FlyLight, an app that rewards travelers when the weight of their luggage remains below an airlines' luggage allowance
- Open data challenge winner: Lug Lite by the sustainable developer, a mobile application to help reduce the amount of baggage checked in by passengers
- AF/KLM cargo/maintenance challenge winner: 5+2=5, a solution that reduces the time to compute the right location of pallets and containers
- Etihad green development challenge winner: Smart CPM Parser & Sustainable Message Processor, a smart parser app for Etihad cargo messages, allowing cargo flights to

be more accurately planned, and potentially more fuel-efficient

- Microsoft business travel challenge winner: B.R.A.S.R.-Bitmasking Recursive Scheduling and Routing, a customised approach for commercial vehicular route optimisation to reduce carbon emissions

Delighted with the outcome of the hackathon, Mani Ganeshan, APAC Engineering Head and Centre Head, Amadeus Labs said, "Building a sustainable path within the travel

industry can become a major challenge, with less to be achieved in isolation. 1Hack4Sustainability is an innovative approach that brings people and technology together to ensure that global travel can grow responsibly and create a positive community impact. We congratulate everyone who participated in the hackathon to build sustainable solutions that will enable businesses to meet their present requirements without jeopardizing the industry's long-term prosperity. The hackathon

also allowed us to draw attention to sustainable travel while encouraging future leaders and providing them with a direction to sustainable travel industry. Sustainability is a journey rather than a destination, and consistent improvement is essential for continuous progress on the industry's environmental goals. Through these initiatives, we continue to invest in the young minds of the country facilitating the opportunity to unitedly create a greener, more sustainable world."

TVS Motor Company awarded at FICCI CSR Summit for their initiatives in the fight against COVID-19

TVS Motor Company has won an award at the FICCI (Federation of Indian Chambers of Commerce & Industry) CSR Summit and Awards 2022, for their significant contribution towards the community through their CSR wing, Srinivasan Services Trust (SST), during the battle against the COVID-19 pandemic. Recognising TVS Motor Company's contribution and initiatives towards ensuring welfare and community strength, especially across rural India, the enterprise has been awarded under the category "Fight against COVID-19".

Attending the ceremony at the FICCI Federation House in New Delhi, Mr Swaran Singh IAS (R), Chairman, Srinivasan Services Trust, said, "We are humbled to be recognised by FICCI for our endeavours against the pandemic. COVID-19 brought unprecedented challenges for the communities, especially in rural and semi-urban India, where the awareness and preparedness to tackle the situation were comparatively lower. Our teams, across the rural areas, worked tirelessly to provide essential services along with the local government. Over Rs. 85 crores have been contributed by TVS Motor Company towards COVID relief. Procurement and distribution of essential medical



equipment and medicines, spraying of disinfectant in villages and cities, life-saving oxygen concentrators and High Flow Nasal Oxygen (HFNO) machines, lakhs of food packets and much more were provided to the rural hospitals and communities. SST provided assistance to 525 rural primary health centres and hospitals to ensure that far-flung rural communities have access to essential medical items on a priority. Apart from this, Rajiv Gandhi & Stanley Government Hospitals at Chennai were provided full support during the pandemic with

the aim to save thousands of lives. This award is a testament to the dedication and efforts of teams across TVS Motor Company, our partners, and government."

The FICCI CSR Awards recognise individuals and organisations that have made significant contributions to India's development and growth. TVS Motor Company is proud to be one of the winners of the 2022 prestigious awards and look forward to continuing its work towards community development and social welfare.

Flipkart becomes the first Indian e-commerce company / marketplace to commit to 100% Renewable Electricity by 2030

Flipkart, India's homegrown e-commerce marketplace, has become the first Indian e-commerce company to commit to sourcing 100% of its electricity needs from renewable sources for its entire operations by 2030. As a part of this pledge, Flipkart has taken Climate Group's RE100 commitment, a collaboration of the world's most influential businesses committed to 100% renewable electricity. In alignment with its Net Zero commitments of reducing the Scope 1 and 2 climate change impacts by 2030, this move from Flipkart builds on strong existing action, with the company already meeting 14% of its electricity requirements from renewable sources against the baseline consumption of CY 2021.

The Flipkart Group, through a focused approach and structured adoption of existing instruments like Rooftop Solar (RTS), Open Access, and evolving market instruments in coming times, has planned to achieve this ambitious target of sourcing 100% Renewable Energy by 2030. The Group is uniquely positioned to influence other businesses as well as promote the benefits of using renewable electricity among the public, driving a much-needed behavioral change for India's overall energy transition. The group is embarking on the RE100 journey with committed efforts to add RE portfolio from distributed as well as grid-scale projects. As it looks forward to achieving this target through collective responsibility and collaboration, Flipkart is also looking forward to

Pledges to source 100% of its electricity requirements from renewable sources by 2030 for all its group companies

Joins RE100, a global initiative led by Climate Group, to go 100% renewable

connecting with policymakers and various state governments.

Rajneesh Kumar, Chief Corporate Affairs Officer at Flipkart said, "For the Flipkart Group, it has been a concerted priority to integrate sustainable practices across its operations. In the past two years, we have made consistent efforts and have expressed our unwavering intent to tackle climate change with bold ambition and decisive action and we continue to do so. Being the first Indian e-commerce group to commit to 100% renewable electricity by 2030 and to join RE100, Flipkart looks forward to working in collaboration with this global cohort of influential companies, led by Climate Group. Our commitment to RE100 aligns with our Net-Zero target and our mission to drive positive climate action. With this step, we are further ready to learn and innovate climate solutions to accelerate action and also to support the ambition of the

Indian government to achieve 500 GW RE by 2030."

Atul Mudaliar, Head of Business Action, India at Climate Group, said, "We're delighted to welcome Flipkart to RE100. By leading the adoption of renewable electricity in the Indian e-commerce sector, Flipkart has set a powerful example for businesses to step up their ambition and action toward clean energy targets. RE100 has fostered a global ecosystem of some of the world's best-known and most ambitious companies, and we look forward to the pivotal role Flipkart will play in furthering innovation and driving early adoption of renewable electricity in India."

In recognition of Climate Change becoming the defining environmental issue of our generation and the role that businesses play to take action and lead by example, Flipkart has successfully adopted multiple sustainability initiatives across the Group and has already eliminated single use plastic from its own supply chain. Besides this, it is focused on resource efficiency, having introduced projects to increase its overall energy productivity. Apart from encouraging zero liquid discharge of wastewater in its warehouses and waste management practices, Flipkart's strategic facilities have received an ISO 14001 certification, along with its largest warehouse in Haringhata, West Bengal, being recently awarded IGBC's Green Building Platinum certification. Led by Climate Group and in partnership with CDP, RE100 aims to accelerate

change towards zero carbon grids at scale. Since launching in 2014, more than 370 major businesses across multiple sectors, from fashion and retail to cement and automobile manufacturing, have joined the initiative, doing pioneering work to transform the renewable electricity sector. With operations across

multiple countries around the world, RE100 member companies together drive enough renewable electricity demand to power a medium-sized country, thereby sending a powerful signal to markets and governments.

While companies joining RE100 have committed to sourcing 100% of their global electricity

from renewable sources by 2040, Flipkart's commitment to RE100 is especially significant as it seeks to reach its commitment a decade earlier. Flipkart is already a member of Climate Group's EV100 initiative, with a commitment to introduce 100% electric vehicles across its entire fleet by 2030.

Lions Clubs International deploys 300,000 Club Members to solve the challenges of e-waste in India

Lions Clubs International announced that it has deployed close to 10,000 Clubs in the country which will involve close to 300,000 volunteers/members to resolve challenges faced by e-waste in the country. Used phones, batteries, laptops and other electronic items lying in our homes are part of what constitutes e-waste and are harmful if not disposed of properly owing to their hazardous material content. This is an emerging global environmental and public health issue as it further depletes our natural resources, adding to land, air and water pollution. We are exposed to serious health problems from these e-wastes ranging from skin diseases to headaches, gastritis & ulcers. Children have the most harmful impacts their bodies are still developing and they are the most vulnerable population. According to a Central Pollution Control Board report, in the financial year 2019-2020, India generated 1.04 lakh tonnes of e-waste from 21 types of electronic and electric e-waste. Globally, the Lions Club International is deploying close to 1.4 million volunteers in more than 200 countries who are dedicated to working to dispose off e-waste.

A P Singh, International Third Vice President, Lions Clubs International, said, "What's concerning is that a majority of e-waste collection is done via the informal sector. While the government has certain checks and balances in place

in this sector, it's not their problem alone. It's time for every individual to step up and take responsibility. We have been working to put into action communities, both locally and globally to resolve this issue. Across the world, it has mobilised and rendered services where needed in response to emerging situations. "Today land, air, and water pollution are the biggest challenges facing humanity. And e-waste is a clear and present threat to life forms and if left unaddressed might eventually threaten the continued existence of life on this earth," A P Singh added.

Explains A P Singh, "Immediate action is the need of the hour. In developed nations e-waste management is considered the responsibility of every individual, and in India, too Lions Clubs are all set to create that awareness. Lions will also start to assist people with e-waste management and run a campaign in a couple of months. For this India to needs to take responsibility just as the swatch Bharat awareness campaign. The best way out is responsibly recycling or refurbishing this e-waste, and even donating these devices to underprivileged children. We sincerely believe in "Kindness matters". These

refurbished mobiles & laptops could be used to promote computer literacy and give almost free access to technology to those who need our support."

Last year itself lions served more than 495 million people worldwide. Lions are also serving globally in helping prevent blindness, and aiding 23 million visually challenged persons; reducing the prevalence of diabetes & improving the quality of life of more than 27 million

people; providing grants to 11 million children affected by childhood cancer, and such humanitarian work.

Elaborating on Lion Club's India initiative, he said that the Lions Club have 150 eye hospitals where more than 500,000

surgeries are performed annually free of cost. Lions have also established 38 blood banks and 40 dialysis centres, 140 schools for children's education, vocational training centres and environmental projects in India. There are 80 lion districts at present in India and each district average spending of Rs 7-8 crores per annum for community and social development of the country. To mobilise these funds, Lions pay from their own pockets as well as raise funds from donors.



Vinod Gupta, a daily wage worker gets a new lease of life with the help of Religare Care Foundation and Sir Ganga Ram Hospital



Religare Care Foundation, a charitable organisation formed by Religare Enterprises Ltd (REL) along with Sir Ganga Ram Hospital (SGRH) has given a new lease of life to Vinod Gupta, a daily wage worker from Sultanpur who lost one of his arm and legs in a potentially life-threatening and incapacitating accident.

The foundation took full charge of rehabilitating Vinod and admitted him to Sir Ganga Ram Hospital. There he underwent multiple first of its kind surgeries to restore his mobility in the right arm, to repair his skull and to heal his amputated limbs that developed severe septicaemia. Now recovered, Religare Care Foundation organised a send-off ceremony for Vinod in the presence of Dr Murali Manohar Joshi, Indian Politician & Former National President Bhartiya Janta Party, Padma Shri Yogeshwar Dutt, Indian Wrestler and Olympian, Dr Ajay Swaroop, Chairman Board of Management, Sir Ganga Ram Hospital, Dr Rashmi Saluja, Executive Chairperson, Religare

Enterprises Ltd and Dr Mahesh Mangal, Senior Consultant, Plastic & Cosmetic Surgeon, at Sir Ganga Ram Hospital on 14th of December, 2022.

Speaking at the ceremony Dr Rashmi Saluja, Executive Chairperson, Religare Enterprises Ltd said “It is a momentous event for the Religare Care Foundation. It has supported the doctors at the hospital in achieving what seemed impossible till a few months ago. Vinod is now walking back home; a feat that was unthinkable when the Foundation admitted him here with severed limbs and a broken spirit. Seeing the smile on Vinod and his family members fills our heart with pride. We, at the Foundation, are determined to see Vinod back on his feet, taking care of his family, and become ‘aatmanirbhar’ to fulfil the dreams of his daughters. We also appreciate the untiring efforts of the doctors and the hospital’s support staff.”

According to Dr Ajay Swaroop, Chairman Board of Management, Sir Ganga Ram Hospital “Our hospital

has always been in the forefront for rehabilitation of weaker section of the society. Mr Vinod Gupta is another example of our hospital putting its best efforts for this noble cause. Besides Mr Gupta, our hospital has admitted 9760 patients from economically weaker section of the society and treated them free of cost. An approximate amount of Rs 50 crores has been spent in last one year on various charitable activities of our hospital. Motto of SGRH is to treat all with cutting edge expertise irrespective of cast creed or financial status.”

Dr Mahesh Mangal, Senior Plastic & Cosmetic surgeon, Sir Ganga Ram Hospital, who performed the surgery on Vinod, mentioned on the occasion, “It was a challenge to us firstly, in controlling the infections at various places and secondly the reconstruction of his right hand to make it a useful and functional hand. Despite the challenges, we achieved stable stumps and healthy wounds and successfully performed the microvascular surgery over right upper limb which lasted for

eight hours. Special credit to Dr Rashmi Saluja and The Religare Foundation, they whole-heartedly supported us in our endeavours. Dr Saluja personally took this upon her to ensure that Vinod's mobility is restored and place him in a position where he can lead a normal life. I Would also like to thank my team who have relentlessly worked towards rehabilitating Vinod".

Yogeshwar Dutt, the Padma Shri awarded ace wrestler and REL's brand ambassador, praised the Foundation's timely intervention, "Under Dr. Saluja's guidance, the Foundation has been consistently providing timely and life-saving

medical and financial interventions to help people in dire situations. I am proud to be associated with REL and wish the company more success in their endeavour to bring succour to the needy. "

The Religare Care Foundation further facilitated his post-surgical rehabilitation, which will continue after his discharge from the hospital. Vinod will start learning to walk with prosthetic legs and use a prosthetic arm.

Vinod was working as a daily wage worker in Sultanpur, while supporting his six-member family that included his elderly parents, wife, and two young daughters.

While working at a factory one day, he received severe burn injuries due to high-voltage electrocution. As a result, doctors had to amputate both his legs and one arm. The other arm was also badly injured and almost rendered non-functional as it was left with only two fingers and a thumb. A significant portion of his skull was also damaged. Following elementary care after the amputation, he was subsequently discharged from the hospital. However, this was just the beginning of his ordeal. Severe septicaemia developed in his amputated limbs, causing excruciating pain. It was a life-threatening condition.

RMZ Corp becomes signatory member of global decarbonization program 'First Movers Coalition' at COP27

The 65-member global coalition commits \$12 billion to commercialize zero-carbon technologies

RMZ Corp, one of Asia's largest privately owned real estate owners and developers, has become the first Indian real estate company to be one of the first signatories of the First Movers Coalition (FMC). FMC is a global decarbonization initiative launched by the World Economic Forum and the US government during COP26. At COP27 in Egypt, the 65-member coalition committed \$12 billion to commercialize zero-carbon technologies and cut emissions and focuses on cleaning up one of the world's most carbon-intensive industry sectors through purchasing commitments for low-carbon technology. RMZ Corp joined the coalition along with nine other companies at COP27. As an FMC company, it has committed to purchase at least 10 percent of

near-zero cement and concrete per year by 2030.

Cement & Concrete make up 7% of global emissions today. To decarbonize the cement sector, emerging technologies in carbon capture, use, and storage (CCUS) need to be scaled. RMZ Corp is the first and only real estate developer from India to be part of the Coalition and has signed up in the cement and concrete sector.

Commenting on the development, Jayakumar K Senior Managing Director & Member of Executive Board, RMZ Corp, said, "We are incredibly proud to be the first Indian real estate company to be one of the first signatories of the First Movers Coalition. We are excited to join the network that is committed to purchasing at least 10% near-zero cement and concrete per year by 2030. Purchase commitments will stimulate the clean technology market with more investments in decarbonizing technologies. Our goal has been to imagine, create, operate, and transform for a greener, more liveable planet. From a decarbonization standpoint, we would

like to lead and drive the shift to a net-zero economy. Joining the Coalition only reiterates our commitment to this."

RMZ is synonymous with industry-leading sustainability best practices and the building of efficient and resilient properties that are future-ready. As one of the country's largest developers and owners of real estate, RMZ follows high environmental sustainability standards consistent with the expectations of occupier clients and users. RMZ's sustainability framework covers renewable energy, green buildings, zero waste, water neutrality, Scope 3 emissions, digitization, the happiness index, health and wellness, social design, social experiences, and community programs.

According to a recent report by the International Energy Agency on the cement industry, 4.3 billion Mt of cement was produced in 2021, 55% by China and 8% by India. Production is expected to increase in India and other developing Asian and African countries in the long term. The direct CO2 intensity of cement production increased by about 1.5% annually during 2015-2021.

Dabur launches 'Fem Ultra Care Sanitary Napkins'

Announces project to support feminine hygiene for underprivileged girls

Dabur India Ltd. announced its entry into the women's personal hygiene space with the launch of 'Fem Ultra Care Sanitary Napkins'. This e-commerce exclusive launch, which further strengthens brand Fem's presence in the personal care market in India, is being launched on India's leading e-commerce platform Flipkart.

Dabur also announced the launch of a new social initiative to support women's health and further empowering adolescent girls from underprivileged sections of the society.

Announcing the launch, Dabur India Ltd Business Head-Ecommerce and Modern Trade, Smerth Khanna said: "The world around us is evolving at a fast pace. As a women-centric brand, Fem understands the specific needs of women, and has been constantly innovating and expanding our product range to meet the emerging and unmet needs of our consumers. With the launch of Fem Ultra Care Sanitary Napkins, we are addressing an unmet consumer need for a superior feminine hygiene product at a pocket-friendly price. These ultra-soft and super absorbent sanitary pads come with a unique proposition of 5-in-1 Total Period Care."

Fem Sanitary Napkin comes with Hyper absorbent core with up to 2X higher Absorption, has a

Specialized Anion Anti-bacterial strip for 99.99% germ protection, and provides 100% leak-lock for up to 12 hours. It also has a Super-soft cottony top cover for superior comfort and is dermatologically tested safe & non-irritant.

"In our journey to offer the best possible solution for an uncompromised product, we were assisted by the team of Flipkart with important dipstick surveys and data points to decode the current market and

Care Sanitary Napkins' on our platform. Flipkart's wide customer base can now enjoy the benefits of increased selection of personal care and hygiene with Dabur's offering." Flipkart Senior Director-Consumables (FMCG), General Merchandise and Home, Kanchan Mishra said.

Dabur also announced the launch of a new social initiative to support women's health and further empowering adolescent girls from

underprivileged sections of the society. Since stigma and ignorance related to menstrual hygiene can be a serious health hazard, this social initiative 'Swasthya Aur Suraksha' will not only seek to raise awareness about safe menstrual health practices, but also make hygiene prod-



ucts accessible to adolescent girls. Against each pack of Fem Ultra Care Sanitary Napkin sold, Dabur has committed to give one sanitary napkin free to underprivileged girls.

demand proposition. We are highly confident of the Fem Sanitary pads launch," Mr. Khanna added. Fem Ultra Care Sanitary Napkins will be available in 2 variants: FEM Ultracare XL comes in Pack of 20 (Rs.150) & Pack 40(Rs.299) & FEM Ultracare XL+ comes in Pack of 30 (Rs.330) & Pack of 50 (Rs.535).

Speaking on the occasion, Dabur India Ltd AGM-Consumer Marketing, Rajat Mathur said: "This launch demonstrates Dabur's continued commitment to providing innovative personal care products of the highest quality backed by extensive research and in-depth understanding of our consumer needs. We are confident that the new product will be immensely loved by our shoppers."

World Bank Signs Project to Scale up Innovative Renewable Energy Technologies in India

The Government of India, Solar Energy Corporation of India Limited (SECI), and the World Bank has signed agreements for a \$150 million IBRD loan, a \$28 million Clean Technology Fund (CTF) loan and a \$22 million CTF grant to help India increase its power generation capacity through cleaner, renewable energy sources. The agreement underscores the Government of India's commitment to achieve 500 giga-watts (GW) of renewable energy by 2030 in order to address the challenges of climate change.

The agreement was signed by Rajat Kumar Mishra, Additional Secretary, Department of Economic Affairs, Ministry of Finance on behalf of the Government of India; C. Kannan, Director Finance, on behalf of SECI; and Hideki Mori, Operations Manager & Acting Country Director, India, World Bank. "India's transition to renewable sources of energy is one of the most critical transitions for its future," said Hideki Mori. "The World Bank is committed to supporting India during this transition. This project will bring in international experience in deploying new technologies to the sector and support India's progress in adopting cleaner, renewable energy fuels."

The Project aims to address constraints in commercial investments in this sector through increasing the confidence of the various stakeholders. The Project will also help SECI increase market uptake by addressing the barriers to deploying new technologies at scale.

The first solar subproject is being constructed by Battery Energy Solar Systems (BESS) in Rajnandgaon district in the Indian state of Chhattisgarh. The second subproject which will have floating solar panels is ongoing at the

Getalsud reservoir in the state of Jharkhand.

India currently has an installed capacity of more than 409 GW, of which the renewable energy (non-hydro) share is almost 29 percent (119.5 GW). The project will accelerate India's progress towards sustainable universal electricity access, which is a key milestone for achieving inclusive economic development objectives.

Strengthening SECI's capacity is critical to achieving India's installed RE capacity by 2030 and net zero emission target by 2070. The project will support SECI with human resource and business planning, project monitoring, procurement, financial and contract management, environmental and social safeguards and financial management, among others.

"SECI, the Government of India's nodal agency, is pivotal to pushing the frontiers in mainstreaming renewable energy within the country to accelerate its energy transitions journey. This engagement attempts to introduce nascent technologies in the renewable energy sector at a relatively larger scale. The subprojects financed under this Project aim to displace fossil-fuel based generation by positioning renewable energy to meet peak power demand, establish ecosystem to attract private sector investments, and support institutional strengthening," said Surbhi Goyal, Senior Energy Specialist and World Bank's Task Team Leader for the project.

The \$150 million loan from the International Bank for Reconstruction and Development (IBRD), has a 5-year grace period, and a maturity of 25 years. The \$28 million loan from the Clean Technology Fund (CTF) has a 10-year grace period, and a maturity of 40 years. The \$22 million is an interest-free CTF grant.

Schneider Electric India wins FICCI CSR Award

Schneider Electric, the leader in the digital transformation of energy management and automation, has won the FICCI CSR Award for its 'Energy for Sustainable Livelihood' project under the Food Security and Agriculture category at the 20th FICCI CSR Award Ceremony. The winning project aims to transform lives of tribal women farmers in 10 economically backward districts (9 out of 10 are aspirational districts) in Bihar, Jharkhand and Odisha by providing assured irrigation through 428 solar powered irrigation system, supporting 8356 farmer families for their agricultural use resulting in income enhancement.

Speaking on this occasion, Venkat Garimella, Vice President- Strategy and Alliance & Sustainability & CSR Schneider Electric India said, "Schneider Electric endeavours to solve real-life problems in the most sustainable yet efficient way. The Energy for Sustainable Livelihood project aims to push the pedal on inclusive development for achieving the SDGs at the grassroots level. The selection of aspirational districts reflects our resolve to enable local communities to achieve Atmanirbharta. It is an honour for us to provide an enabling environment for promoting sustainable livelihood opportunities for farmers. We are grateful to FICCI and the jury for recognizing our efforts as we look forward to continuing the momentum for partnering in India's journey of Atmanirbharta (self-reliance)."

Infosys and UNLEASH organize Global Innovation Lab 2022 to advance youth-led solutions in alignment with UN Sustainable Development Goals

The event brings together over 1,000 young minds between 18 and 35 years of age to innovate and design sustainable solutions for the future.

Infosys, a global leader in next-generation digital services and consulting, today announced its collaboration with UNLEASH, a non-profit organization with a mission to get the youth to create innovative and scalable solutions to help reach the Sustainable Development Goals (SDGs). Together, Infosys and UNLEASH will advance youth-led solutions aligned with the UN SDGs, amplify ESG best practices and accelerate digital skilling, through the Global Innovation Lab 2022. Through interactive exercises and activities based on human-centered design thinking, participants at the Global Innovation Lab 2022 will develop

tech-savvy solutions for the SDGs, while pursuing their vision to provide quality education and learning opportunities for all.

The Global Innovation Lab 2022 will be hosted from December 3rd to 10th at Infosys' Mysuru Development Center, one of the world's largest corporate universities. The event brings together over 1,000 young minds between 18 and 35 years of age, from around the world, to innovate and design sustainable solutions for the future. "Infosys, since inception, has been steered by its purpose to amplify human potential and create opportunities for people, business, and communities. We are delighted to collaborate with UNLEASH and host the Global Innovation Lab 2022, a platform that mobilizes youth to co-create a sustainable future. Together, Infosys and UNLEASH will facilitate the exploration of digital solutions to address UN's SDGs and create digital solutions to improve education reforms globally," said, Nandan Nilekani, Chairman, Infosys.

"We are very pleased that Infosys will be hosting the UNLEASH Global Innovation Lab at their unique campus in Mysuru, and I can think of no better place for UNLEASH Talents to co-create solutions to some of our times most daunting, grand challenges. Infosys' innovative and disruptive technologies and their focus on ESG and education is the perfect environment for an Innovation Lab for the UN's 2030 Agenda," said, Professor Flemming Besenbacher, Chairman of UNLEASH.

Infosys, furthering its commitment to digitally skill over 10 million people by 2025 and bridge the digital divide, leverages its platform, Infosys Springboard, to democratize quality education and strengthen the next-generation workforce with digital and life skills. Having achieved carbon neutrality 30 years ahead of the timeline set by the Paris Agreement, Infosys aims to further the UN's SDG mandate through UNLEASH India. Responsibility is an opportunity unleashed with Infosys!

ONGC inks MoU with Shell for Carbon Capture, Utilization and Storage

Oil and Natural Gas Corporation Limited (ONGC) has signed a MoU with global petroleum giant Shell for cooperation in Carbon Capture, Utilization and Storage (CCUS) studies. The collaboration shall focus on joint CO₂ storage study and EOR screening assessment for key basins in India

including depleted oil and gas fields, saline aquifers. ONGC, a Maharatna Central Public Sector Company of India, and Shell, one of the most diversified international energy companies in India, signed this MoU in Delhi on 7 December 2022. The MoU was signed by ONGC CMD R K Srivastava and Shell India

CEO Nitin Prasad in the presence of senior executives of both the companies. The MoU is aimed at developing CCUS/CCS as an emissions mitigation tool for combating climate change and injecting carbon dioxide (CO₂) for geological storage as well as enhanced oil production from mature fields of ONGC.

Nairobi County Govt to implement mid-day meal program with Akshaya Patra support

Top level Kenyan delegation visits the central Akshaya Patra Kitchen as a first step towards implementation

The impact of Akshaya Patra Foundation which is the implementing partner of the Government of India's PM Poshan Program, is continuing cause of providing free classroom meals across India has touched African shores – the Nairobi City County Government, Kenya, which is all set to feed its disadvantaged school-going children with the learning extracted from the Indian not-for-profit organization.

As a first step towards implementing this program, a top-level delegation from Kenya visited The Akshaya Patra Foundation's kitchen in Ahmedabad at Gandhinagar, to understand the operations and the quality being maintained in producing over 1 lakh meals from this centralized mega-kitchen.

The delegation included James Njoroge Muchiri, Nairobi City County Government Deputy Governor, Ruth Owuor, Chief Officer Education, Gender, and Social Services, Nairobi, the Capital of Kenya, Joyce Kinyanjui, Director, Intergovernmental Relations, Charles Gathara, Deputy Director of Water, Sanitation & Energy, Hibrihaim Otieno, Deputy Director, Environment, Frankwel Wambugu, Personal Assistant to His Excellency and Ceverene Mureithi, Head of People & Strategy at Food for Education Foundation.

Speaking about his visit, Muchiri said, "Over 60% of the children in



Nairobi County are living in the informal settlement where their parents can barely afford one nutritious meal a day leading to a rise in stunting, wasting, and malnutrition among children. Towards this end, the National government and the Nairobi City County Government have both captured the school meal program as part of their manifesto taking cognizance of the fact that a nutritious school meal has several benefits both to the underprivileged children and their parents. Nairobi County Government is keen to provide a hot meal for its Early Childhood Development and Education (ECDE) and Primary School going children in order to mitigate the aforementioned issues, as well as increase the enrolment, retention, transition and performance in basic education. Hence, the need to act is urgent and this can't be done alone. We need support from foundations like The Akshaya Patra Foundation and the Kenya-based Food for Education, which have proven expertise in executing large-scale sustainable feeding programs. My visit here marks the first step towards this

collective fight against securing our children's future."

Echoing his views, Anant Arora, Chief Officer, Sustainability & Communication, The Akshaya Patra Foundation said, "We understand what it is like to fight socio-economic challenges at a scale with frugality and innovation. In a global world a challenge faced by one nation has ripple effects across continents. Which is why attaining the Sustainable Development Goals, like Zero Hunger, will need collective action. While multilateral organizations and governments are doing their best, launching grassroots Private-Public Partnerships can go a long way in addressing this problem. This exchange of information and learning, not only helps the Kenyan government but also helps us to accelerate our fight against classroom hunger. We are keen to assist more nations."

The knowledge exchange between the foundation and key decision makers from Kenya is a result of discussions, led by Food for Education, Kenya's renowned school-feeding social enterprise, founded by Ms. Wawira Njiru.

BPCL, HPCL and IOCL roll out #DriveFresh - Clean and Hygienic washrooms in Fuel Stations along tourist routes

Oil Marketing Companies, have announced the launch of #DriveFresh, which is an initiative to set up clean and hygienic toilets at their Fuel Stations along tourist routes - National Parks.

On the eve of World Toilet Day (November 19), the inauguration of #DriveFresh - clean and hygienic washrooms at 191 retail outlets enroute to prominent National Parks including Kanha,

Affairs, Shri Gangapuram Kishan Reddy, Hon'ble Minister for Culture, Tourism and Development of North Eastern Region and Shri Rameshwar Teli, Hon'ble Minister of State for Petroleum and Natural Gas & Labour & Employment Govt of India via a virtual conference.

This project has been initiated under the Azadi Ka Amrit Mahotsav campaign for the convenience of the tourists and travelers in order to provide enhanced customer experience.

The Fuel Stations of the OMC's IOCL, BPCL and HPCL are spread throughout the country including Maharashtra, Gujarat, Rajasthan, Karnataka and others.

Clean, Hygienic and up-graded washrooms in 16 OMC retail outlets in Vrindavan and 12 retail outlets in Goa have been rolled out earlier in order to offer best in class convenience benefitting tourists. These gents and ladies washrooms have prominent signages, well illuminated, availability of water, proper latching facility and are maintained in a clean and hygienic condition.

This #DriveFresh initiative has been taken up keeping in mind that National Parks and Wildlife Sanctuaries in

the country are very popular driving destinations and are frequented by both domestic and international tourists travelling in personal vehicles and in tourist buses, and are important halting points for refueling and for use of amenities.



Tadoba, Bandhavgarh, Pench, Sunderbans, Manas, Ranthambore and others by the three OMCs was formally launched in the presence of Shri Hardeep Singh Puri, Hon'ble Minister of Petroleum and Natural Gas & Housing and Urban

Motorcycles, Music & Madness! TVS MotoSoul – The Ultimate Biking Festival returns, to supercharge motorcycle enthusiasts

- The larger-than-life motorcycling extravaganza will host special attractions for biking and adventure aficionados
- Mega gala nights with international artists to celebrate the love for motorcycles

Riding high on its premiumisation journey, TVS Motor Company, a reputed manufacturer of two-wheelers and three-wheelers in the world has announced TVS MotoSoul – The Ultimate Biking Festival. The second edition of TVS MotoSoul will take place between March 3 & 4, 2023 at Hilltop Vagator, Goa.

This time around, the two-day motorcycle music festival will be grander in every aspect and will present a perfect amalgamation of motorcycles, music and rich racing legacy along with narrators from all walks of life coming together to make it a gathering of a lifetime. The unmatched vibe of the ultimate biking fest is further set to be accentuated by top Indian and international artists setting the vibe for the mega gala nights.

TVS MotoSoul – the flagship initiative from the house of TVS Motor Company brings a perfect blend of culture and lifestyle from across the globe. The idea extends beyond motorcycling as the event will unfold a wide range of world-class lifestyle products and there will be a lot more to explore for the aficionados who believe in celebrating not just motorcycles, but life as a whole.

Aster announces 1000 discounted surgeries in 7 countries as a part of Aster Volunteers' 'Kindness is a Habit' campaign

Launched on occasion of Aster DM Healthcare's 36th Foundation Day, the year-long campaign aims to instill Kindness as a Habit among people across the world

On occasion of its 36th Foundation Day, Aster DM Healthcare has unveiled its year-long 'Kindness is a Habit' campaign under its CSR arm - Aster Volunteers. Under this campaign, the group will encourage people across the world to adopt kindness and compassion as an everyday habit and encourage their friends, families and society to do the same. As a first step, the organisation has announced 1000 surgeries for underprivileged patients through its 26 Aster hospitals in 7 countries including India alongside multiple environmental initiatives. Out of these 25% or 250 surgeries will be offered free of cost and the rest will be offered at 50%+ discount.

As another Act of Kindness towards our planet and environment, employees across hospitals of Aster DM Healthcare in India planted and distributed more than 1000 saplings alongside planting of saplings at Naseera Botanical Garden at Dr. Moopen's Medical College in Wayanad, Kerala. In GCC, employees planted 500 Ghaf & Cedar trees in the desert of UAE. In an effort to make its facilities energy efficient, solar panels covering the entire car park at Medcare Multispecialty Hospital in Dubai was launched.



Solar energy generated through the panels would directly be used to power the hospital.

Speaking on the occasion, Dr. Azad Moopen, Founder Chairman and Managing Director of Aster DM Healthcare said, "Since we started our journey in Dubai as a healthcare provider in 1987, giving back to the people in need has been ingrained in our DNA. As we expanded into a major corporate organization, through Aster Volunteers, we exponentially increased our compassionate activities, realizing that an act of kindness can have a tremendous impact on society, making the world a better place for all. With this thought, we are launching the "Kindness is a Habit" campaign under Aster Volunteers."

He further added, "The year-long campaign will provide free and subsidized treatment to over 1,000 needy patients. To be kind to Mother Nature, we are planting thousands of trees during the campaign. To



Dr. Azad Moopen Founder Chairman and MD Aster DM Healthcare

show our gratitude to over 28,000 Aster employees, we are providing each one of them with a free health checkup. During the campaign period, we will encourage others to join the cause and share their acts of kindness on social media using the hashtag #Kindnessisahabit to create a movement."

While starting with Aster's own employees, the year-long campaign would encourage other Corporates, Youngsters, Students, NGOs and People in general to join the cause. It can be through simple acts like helping a blind person cross the road or taking an old patient in need to the hospital, individuals or families or groups of people or communities can come together to adopt Kindness as a Habit. Those who would like to encourage others to join the cause can share their Acts of Kindness on social media and use the hashtag #Kindnessisahabit to create a movement. They can also tag @astervolunteers and @asterdmhealthcare. 📌

CSR INDIA UNITED

Iopex technologies to provide STEM education to 1,500 girl students



Under the CSR initiative, Iopex technologies has partnered with Bhumi NGO to provide skill-based education to students of government school from Ambattur, Chennai

In an effort to enhance the skills of students from rural communities, iOPEX Technologies has partnered with Bhumi, one of the largest independent youth volunteer non-profit organizations, to provide STEM (Science, Technology, Engineering and Mathematics) education to more than 1,500 students from Grade VII to IX of Perunthalaiva Kamarajar Government Girls Higher Secondary School, Ambattur, Chennai.

The program is designed to provide relevant education to the underprivileged children and engage them in subjects wherein they discover their true potential with the help of new learning methodologies such as fun-filled, interactive, and do-it-yourself activities.

Commenting on the launch of the program, Shiv Kumar, Chairman and Chief Mentor, iOPEX Technologies, said, "The initiative is focused at empowering the youth and make them future-ready by imparting meaningful skills in Science, Technology, Engineering, Mathematics and Environmental Studies. These disciplines will help in creating visionaries, innovative thinkers, dreamers, and problem solvers for future India," adding, "Climate change is one of the most urgent crises affecting the earth today, and its consequences are set to become irreversible by 2030. Our children aren't equipped with the right knowledge or skill to fight this alarming present and future. Climate action awareness sessions aim to empower children to lead change through contextual hands-on experiments."

Bikano celebrates undying spirit of specially abled artists at art exhibition in Delhi

Bikano distributes gifts to specially abled artists to encourage and support them

In an endeavor to recognize and support the art of specially-abled people, India's favorite snack and packaged food manufacturing company, Bikano was a part of the "Beyond Limits" exhibition at Arpana Art Gallery in New Delhi. The event, which was organised by Family of Disabled (FOD), an NGO committed to improving the quality of life of persons with disabilities and their families, was held on the occasion of International Day of Persons with Disabilities.

The NGO is carrying over a week-long event from December 2 to December 10 as part of the celebrations. Team from Bikano visited the art gallery in the national capital and distributed gifts to the members of the NGO and all the artists who presented their paintings and craft work.

"On this International Day of Persons with Disabilities, we decided to visit the 'Beyond Limits' program by FOD at Arpana art gallery. Our initiative was to celebrate with them, recognize them and morally boost them. We felt privileged to be a part of the event that FOD has been hosting for the past two decades to support people with disabilities and make them independent. We salute their undying spirit and the awesome creativity they exhibit at this event every year. The NGO is doing incredible work in supporting and uplifting this part of society which has great potential," said Manish Aggarwal, Director, Bikano, Bikanervala Foods Pvt Ltd.



"We are happy to be a part of the exhibition that witnessed impressive art pieces by specially-abled people. The visit was also aligned with our CSR initiative to contribute to society's betterment, upliftment, and overall progress. Beyond numbers and growth, our vision is also to give back to society, and supporting specially-abled people is our noble gesture in the same direction. We look forward to more such events so that we can contribute to the society and nation in whatever way we can," said Sanjeev Wadhwa, Head of Sales, Bikano, Bikanervala Foods Pvt.

FOD introduced "Beyond Limits" in 2001 and has benefited numerous specially abled artists in reaching out to people with their imagination and creativity. International Day of Persons with Disabilities (IDPD) was started by United Nations and is celebrated every year on 3 December. The day is about promoting the rights and well-being of persons with disabilities at every level of society and development and raising awareness of the situation of persons with disabilities in all aspects of political, social, economic, and cultural life.

Rushil plants 120 million agroforestry trees, create thousands of jobs, and rural uplift, to shape a Greener India

Rushil Decor, a global leader in smarter living solutions, transforming contemporary residential and commercial spaces, today announced that it has planted over 120 million agroforestry trees in Karnataka and Andhra Pradesh, since last four years and pledging to further strengthen its agroforestry capacity initiatives in an integrated manner with crops and livestock to improve productivity, employment, income and livelihoods of rural households, impacting smallholder farmers and offering 20,000 skilled and unskilled employment (farmers, agriculture labour and cutting labors).

This includes planting over 50 million trees in the Chikmagalur, Hassan, and Shimoga districts of Karnataka and 70 million trees in the Visakhapatnam, East Godawari, and Vizianagaram districts of Andhra Pradesh. The fast-growing, short rotational crops: Eucalyptus, Casuarina, Silver Oak & Acacia used as raw materials in the industry, offer direct income to farmers, agriculture labour, and women labor, around the plantation. Rushil's modern, future boards (MDF) plants in Karnataka and Andhra Pradesh procures agroforestry wood affecting the livelihood of millions of man-days annually and three rotation cycle in ten years of renewable resources to keep rolling the rural economy.

Assuring a consistent supply of raw material, Rushil Decor's team regularly engages with rural farmers to extend advanced technical support for agroforestry, offering seeds and seedlings of different agroforestry species through

nurseries, necessary subsidies, and transportation support, training and guidance at factory and district center, distribution of materials, price updates for harvesting along with market support.

Rushil Decor's modern facilities also help nurture local ancillary industries like furniture, panel, transport, and local artisans leading to significant employment opportunities. The plants are strategically located close to raw material sourcing agroforestry-plantations and hence, create sustainable livelihood, reduce transportation impact, and lower emissions, driven by smart manufacturing and automated robotic production. Rushil Decor partners with the Indian Plywood Industries Research & Training Institute (IPIRTI), Institute of Wood Science and Technology (IWST) & Association of Indian Panelboard Manufacturers (AIPM) to enhance its capabilities in agroforestry & strategic sourcing of raw materials from farmers, creating a mutually beneficial relationship.

Agroforestry is defined as a land use system that integrates trees and shrubs on farmlands and rural landscapes to enhance productivity, profitability, diversity, and ecosystem sustainability. It is a dynamic, ecologically based, natural resource management system that, through the integration of woody perennials on farms and in the agricultural landscape, diversifies and sustains production and builds social institutions.

Rushil K Thakkar, Director, Rushil Decor Ltd., India, says "Trees are one of our best investments against the climate crisis. As a responsible

organization, we at Rushil Decor are committed to promoting agroforestry to sequester carbon and broaden the social, economic, and environmental sustainability of rural development. The smart use of trees in agricultural land systems can also make substantial contributions to the conservation of biodiversity. Agroforestry can also help diversify and sustain (food) production and provide vital social, economic, and environmental benefits for land use at scale—shaping a greener planet and better future for all."

Rushil's agroforestry-based plants enhance marginal and small farmers with minimal land holding capacity of fewer than five acres. This initiative has been directed to generate economic momentum, sustainable livelihood, and job opportunities for thousands of skilled and unskilled people in Andhra Pradesh and Karnataka. What strengthens this is Rushil's association with local bodies like Agriculture Market Committee and Karnataka Forest Development Corporation (KFDC) by procuring locally grown agroforestry wood by farmers.

With the rise in living standards, the need for wood is encouraging agro farming which results "farm to furniture" vision of a successful layout for the industry. Trees provide a way forward for sustainable farming and the world must embrace innovative options to maximize agroforestry productivity for mitigating climate change leading to a sustainable ecosystem.

According to industry insights, empowering agroforestry at a national level can offer significant benefits to the economy, and composite

panel industries can create employment opportunities for 2 to 2.5 million people approximately. The full value chain from 110 - 115 million CBM timber (timber to furniture) can create value-added produce of \$150 billion. An important benefit is carbon sequestration: the increase in forest cover and that too of younger trees will have a 2 billion metric ton

carbon sequestration potential by 2050. Growing consumer awareness and a range of applications are driving increased consumption of MDF in India, as the industry is expected to grow at a CAGR of 15% - 20% from an estimated Rs. 3,000 crores in 2021 to Rs. 6,000 crores by 2026. India is a significant player in MDF, being used as a leading interior infrastructure

material. Discerning consumers and modern offices who look for responsible products that reduce carbon footprint, rapid urbanization, rebound in realty, and rising nuclear families will boost MDF growth. Unlike a 70 % market share in the developed nations, MDF has just a 30% market share in India reflecting the high potential for MDF.

Habitat for Humanity India launches 'Green Habitats' Campaign in collaboration with 30 schools pan India

Habitat for Humanity India, a leading non-profit housing organization, has launched its Green Habitats Campaign in collaboration with 30 schools across India. This campaign will encourage over 10,000 students to raise awareness about climate change and the urgent need to take climate action which will enable Habitat India to build energy efficient homes in support of low-income families and provide them with access to solar energy. The campaign was launched at The NEXT School, Mumbai, by Dr. Rajan Samuel, Managing Director, Habitat for Humanity India.

The launch at the school was followed by a fireside chat with Dr. Samuel, a quiz on climate change and a session by students wherein they shared their perspective on ways to protect our environment. Topmost IB schools across India such as Ascend International School, Mumbai; MIT Vishwashanti Gurukul, Pune; JBCN International School, Oshiwara; Jayshree Periwal International School, Jaipur and Strawberry Fields High School, Chandigarh will take part in the Green Habitats campaign.

Commenting on the impact of climate change, Dr. Rajan Samuel, Managing Director, Habitat for Humanity India said, "We believe that adequate and



Dr. Rajan Samuel, Managing Director, Habitat for Humanity India, launches the Green Habitats Campaign at the NEXT School, Mulund, Mumbai

affordable housing can be constructed sustainably and will contribute to the achievement of the Sustainable Development Goals adopted by the United Nations in 2015 as part of the 2030 Agenda for Sustainable Development. This also aligns with our honourable Prime Minister Narendra Modi's Mission Life Movement to protect the environment. Our 'Green Habitats' initiative will create young leaders as well as equip, empower and engage them to become 'Green Champions' for taking better care of our environment, communities and planet."

He further added, "Through environment friendly interventions such as the construction of energy efficient homes, setting up solar lighting systems in households, schools and communities,

Habitat India has served nearly 25,000 people living in underprivileged conditions. This campaign aims to promote awareness of the crucial role that housing eco-system can play in minimizing the effects of climate change."

Mrs. Supriya Kutty, CAS Coordinator, The NEXT School, Mumbai, said, "In India, climate change has far-reaching effects on individuals from all areas of life. Millions of families are vulnerable to the effects of climate change, which include more frequent and severe weather events such as cyclones, floods, and droughts. Through this campaign, our students will gain an in-depth understanding of the devastation that climate change can cause and the action they can take at this young age to build a livable planet."

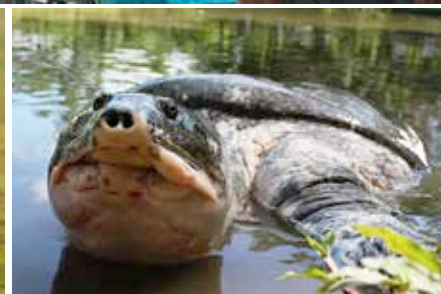
Disney grants to benefit communities and wildlife in 25 countries

India grants to protect the Indian Rhinoceros, Snow Leopard and Black Soft-Shell Turtles

Continuing its ongoing efforts to support a healthier planet for people and wildlife, The Walt Disney Company has announced the award of grants to 43 non-profit organizations working with communities across 25 countries to protect more than 60 animal species this year. In India, three non-profits – International Rhino Foundation, Panthera and Turtle Survival Alliance – are beneficiaries of the grants being extended.

The International Rhino Foundation, which creates Rhino habitats in India, will use its grant to protect the Indian rhinoceros by addressing threats of habitat loss and poaching by improving the range and effectiveness of anti-poaching patrols and increasing numbers through a conservation breeding and translocation programme.

Panthera's snow leopard conservation programme will deploy its grant towards educating villagers, children and religious figures about snow leopards and the threats they face in northern India. Building predator-proof corrals to protect livestock, supporting community income diversification and livestock insurance programmes as well as conducting ecological studies to understand the impact of climate change on habitat use of snow leopard prey species. The Turtle Survival Alliance, through its Indian



Turtle Conservation Programme, is focused on ensuring efficient and effective captive breeding of critically endangered black soft-shell turtles in temple bonds in Assam in north-east India, through breeding and expansion of the head-starting facility at Nagsankar Temple in Tezpur. The programme also seeks to engage local fishermen in the conservation programme apart from community education and awareness efforts and establishing a reintroduction protocol to aid in the recovery of the remaining populations of the turtle.

"As stewards of the environment, we have an obligation to future generations to pass on a cleaner and greener planet to them. Protecting

our wildlife and nature is at the heart of our various sustainability programmes and it's heartening to see the dedication of our NGO partners who are so deeply devoted to making a happier and healthier planet possible for all," said George Cherian, Head - Corporate Communications & Enterprise Social Responsibility, Disney Star.

Disney is committed to saving wildlife and building a global community inspired to protect the magic of nature together. Since 1995, Disney has directed more than USD120mn and the expertise of our dedicated teams to support organizations working with communities to save wildlife, inspire action and protect the planet.

Linde provides school bus for underprivileged kids at Mahesh Foundation, lays foundation stone of Skill Development Center



Linde is a leading global industrial gases and engineering company which is constantly striving to make our world more productive by providing high-quality solutions, technologies and services and helping to sustain and protect our planet.

Linde India Limited, a subsidiary of Linde Plc has, as part of its CSR initiative, donated a school bus to Mahesh Foundation for safe transportation of 100+ unprivileged children from the local community, who attend school at the foundation's Utkarsha Learning Center.

Linde has been sponsoring various initiatives of Mahesh Foundation for the past 8 years and has been a key partner in the foundation's growth journey.

Mahesh Foundation is also starting with an ambitious project of a new Skill Development Center at Kanabargi, Belagavi, Karnataka. This Skill Center will train underprivileged girls and women on basic computer usage, tailoring, art and craft, and communication and soft skills to help them become self-sustained in their life.



A team of volunteers from Linde visited Mahesh Foundation to flag off the commencement of the school bus service and laying of the foundation stone of the Skill Development Center.

On this occasion Bibhabasu Sengupta, Director – Marketing and Communications - South Asia, of Linde, said, “Our collaboration with Mahesh Foundation has helped us effectively reach out to medically challenged and underprivileged children from North Karnataka. Together, Linde and Mahesh Foundation have been able to provide shelter, nutrition, healthcare, and education to several medically challenged and underprivileged children, ensuring a better quality

of life for them. This is part of our objective to enhance lives and make a positive influence in the community around us, which complement our mission of making our world more productive.”

Mahesh Jadhav, Founder - Mahesh Foundation added that “We at Mahesh Foundation are proud to be associated with Linde across the years. The donation of the school bus would aid safe transportation of 100+ underprivileged from the local community who attend school at Utkarsha Learning Centre. We are always grateful to have received continued support from Linde and are looking forward to working together for the betterment of more children in the coming days.”



AN INTERACTION WITH DIRECTOR GENERAL, AMITY UNIVERSITY, GREATER NOIDA

An Interaction with **Prof. (Dr.) Ajay Rana** on the impact of CSR on Education and how Amity University, Greater Noida Campus and the entire Amity Education Group is making its efforts to contribute to People, Planet & Society.

What according to you is the Impact of CSR on Education?

Companies are increasingly aware of the importance of corporate social responsibility (CSR). We can see this in the increasing number of companies that implement sustainability strategies, reduce their carbon footprint, and divest from unethical business partners. These efforts often include addressing environmental, social, and governance (ESG) risks proactively through due diligence processes, engaging stakeholders in transparent dialogues, and implementing programs to improve employee well-being.

How Can CSR be presented in the Education Field?

Every year, millions of children are enrolled in government schools around the world. But only a small percentage of them complete their education successfully. The reason? The education provided in most government and government-aided schools is subpar. The primary reason for girls dropping out of school is that they are expected to work at home. Their families don't allow them to continue attending school because their productivity at home is higher. The other contributing factors are Poverty, Unem-

ployment, and Discrimination based on Caste, Gender, Race, and other social barriers.

Companies can bring about a lot of value to society by playing a leading role in social innovation. Social entrepreneurship initiatives require a lot of administrative and organizational knowledge, which corporations have a firm grasp over.

These companies know what it takes to make a project work from start to finish, and thus can innovatively apply their management expertise for the greater good. The education system in underprivileged areas is consistently underfunded.

This leads to a wide range of problems, from increased class sizes and lowered standards to low graduation rates and high failure rates. Financial support alone will not alleviate these problems — companies must work closely with educators and parents to ensure that their investment truly benefits the local community.

There's a lot to consider in the education sector. While it is important to provide students with an in-depth understanding of certain principles and concepts, it is equally vital to ensure that your business meets all the right criteria in delivering high-quality educational products and services — especially in terms of technology maintenance and service continuity.

Volunteering can be an excellent way to engage employees and build relationships with others in the community. Start by providing your team with a list of local charities and non-profits that align with your organization's values — you'll not only build stronger bonds within your company but also help out those in need. Philanthropy is a critical component of business that often goes overlooked.

While some companies choose to donate funds, others choose to take an active role in philanthropy by donating products and services,

volunteering their time, and more. This platform will allow for a unique opportunity for corporations to connect with schools and individuals who benefit from quality products and services, as well as the expertise that businesses have accumulated over the years.

What are the pitfalls of lack of Corporate Social Responsibility in Education

- **COSTS**

The first way that costs impact an organization that incorporates CSR into its operations is that those organizations frequently need to incur special costs to implement those changes. For example, if a company is usually unaccustomed to donating a portion of its profits to charity, it may need to hire additional employees to manage those donations and may need to take on additional warehouse space to store the additional inventory it donates. Those kinds of extra expenditures can negatively affect a business's bottom line.

- **CLASHING OF BUSINESS OBJECTIVES**

Businesses are driven by profits. Without them, there would be no growth or improvements in the business. And it's possible to grow your profits with targeted marketing that converts website visitors into leads and leads into sales.

A company's social responsibility endeavours are an opportunity to strengthen its brand. By partnering with charitable organizations and engaging in helpful community development, businesses can select projects that resonate with their mission and values. And consumers will respond to such good deeds with loyalty and support.

Is CSR applicable to educational institutions?

Yes. The CSR activities by higher educational institutions can not only solve the purpose of the universities reaching out to complete their responsibility of educating the society, it also contributes towards socio-environmental goals of the state & nation.

Why do companies prefer CSR in education?

The importance of sustainable development is a pressing issue that needs to be considered by every citizen. Businesses that consider CSR as a key component of their business plan help communities and the environment by sharing the benefits, both financial and sociological, with society.

How Amity Education Group is contributing to Society?

Amity Humanity Foundation (AHF), a registered NGO, was initiated under the benevolent vision of Dr. Ashok K. Chauhan, Founder of Amity Education Group and President & Chancellor, Dr. Atul K Chauhan, to do something meaningful for society. Since its inception has been on the core areas of development like education, health, governance and livelihood generation. Its mission is to work for equitable social commitments, by undertaking projects and programmes focusing on Women, Children, Adolescents and the deprived and marginalized sections of the Society.

What are the different projects undertaken by Amity Humanity Foundation in the field of Corporate Social Responsibility?

Over the years, the Amity Humanity Foundation has conceived and implemented impact-driven initiatives across sensitive and important issues such as Education of the Underprivileged Children, Empowerment of Women, Livelihood Genera-

tion and Community Development, Research and Impact Evaluation Studies, etc.

- A) Atulasha was established in the year 2011 to educate boys from the economically weaker sections of the society. Presently, it provides over 500 boys' schooling, uniform, books and stationery, nutrition and transport, right from Nursery to Class VIII. The schools strive to provide quality education to the students that come from the lower income group, such as daily wage earners and construction workers who are living in nearby.
- B) Amity Humanity Foundation's Women Empowerment and Livelihood Generation programme got a huge impetus with the support it received under CSR initiatives of Indraprastha Gas limited (IGL) since 2017. This program is designed to empower rural women by skilling them and, in turn, enabling them to earn livelihood through wage and self-employability. The trainees are mobilised from various villages of Greater Noida such as Surajpur, Kasna, Haldona, Gujarpur, Mubarikpur, Makoda, Tugalpur and Chhalera, Sadarpur, Raipur Asgharpur etc. near NOIDA.
- C) This is a three-year training program started in the 2016 in collaboration with Engineers India Limited at Bolangir District, Odisha. Subsequent to completion of its first year of the project on goat rearing and poultry, second year of the functional literacy is launched in May 2018 to provide functional literacy on mushroom cultivation and beekeeping to 120 tribal women.
- D) This year-long training program was launched at the Amity Greater Noida campus, in association with Indian Oil Corporation Limited (IOCL). The objective of the project is to empower rural women of Surajpur, Kasna,



There's a lot to consider in the education sector. While it is important to provide students with an in-depth understanding of certain principles and concepts, it is equally vital to ensure that your business meets all the right criteria in delivering high-quality educational products and services — especially in terms of technology maintenance and service continuity.

Tugalpur, and Asgarpur villages of Greater Noida region by skilling them in the field of data entry operation.

- E) Over 2500 rural Self Help Group women of Haryana were trained under the Swayamsiddha Scheme of Department of Women and Child Development Haryana, 2004-05. It was a two-day training programme to train the women in the areas of group dynamics and confidence building.

What are the different programs undertaken at Amity University, Greater Noida Campus under your leadership to contribute towards People, Planet & Society?

Some of the programs that we have carried to bring focus in the field of CSR are as under:

- 1) Extension activity on International Women's Day 8th March, 2022 where participants were encouraged to discuss issues on women centric issues through debate, essay writing, community outreach and panel discussion.
- 2) Extension activity on Road Safety Awareness Campaign on 30th May 2022 in which Students were made aware of various important road safety tips.
- 3) Celebration of International Yoga Day on 21st June, 2022 as a commitment towards society and nation.
- 4) MOU Signing Ceremony and Skill Training Workshop (Chocolate & Candle Making) for Acid Attack Survivors on 23rd September, 2022 by Amity School of Fashion Technology, Amity University Greater Noida as a great move in opening career opportunities for Acid attack survivors with a new ray of hope for the victims.
- 5) Chhpaak Girls slaying in Designer outfits at AURA 2022 Fashion Show Extravaganza on 14th December at the Four acid-attack

- survivors walked the ramp as show-stoppers donning the outfits of budding Fashion Designers/Labels at “Down The Runway”- in which Four acid-attack survivors walked the ramp as show-stoppers donning the outfits of budding Fashion Designers/Labels at “Down The Runway”
- 7) Organic Farming at the Amity University, Greater Noida campus

- with a vision of ‘Green Planet’, the faculty, staff and students at the university have taken an initiative to grow vegetables using organic farming techniques and distribute the vegetables to the needy in the society.
- 8) Collaboration with Tehri Hydro Development Corporation (THDC), Khurja, UP Amity University, Greater Noida Campus has collab-

orated with THDC to implement program in 5 selected villages of Khurja block in Uttar Pradesh for creation of gainful employment opportunities by imparting training and skills up-gradation of the women and creating required support systems to ensure unemployed girls & women to take-up self-employment activities for their socioeconomic elevation. ■

Prof (Dr) Ajay Rana - Profile

Prof. Dr. Ajay Rana, the most dynamic results-driven, proactive academician, currently serving at Amity University, Greater Noida as the Director General. He had also been amongst the youngest Vice-Chancellors, and holds his M.Tech and Ph.D. in computer science and engineering from top prestigious institutions around the globe. He is well-regarded for his deep commitment, indestructible determination, humbleness, and passion for social upliftment. He is an educationalist, a teacher, an innovator, a strategist, and a committed philanthropist awarded with nearly 243 awards & recognition for his extraordinary work in the field of Education and Research and CSR. He has been conferred with honorary professorship from various universities and is associated with the largest educational groups and possesses a wide understanding of the acts, statutes, and ordinances of the university systems with good governance skills. Dr. Rana has Kindled the light in more than 1, 75,000 students by placing them in top-shot MNCs across the globe.

These undeniably exceptional qualities of Dr. Rana lead him to be amongst the most recognized faces at Amity today. He has held various positions in Amity Education Group for the past 2 decades:

- Director for Amity Institute of Information Technology
- Group Director for Amity School of Engineering- JEE
- Director for Amity Technical Placement Centre
- Dean, Sr. Vice President & Advisor to the Amity Education Group for multiple roles.

Prof. Dr. Ajay Rana is the Founding Chairman of AUN Research Labs, EC Member of the IEEE UP Section, Senior, and Member of IEEE and Life Member of the CSI and ISTE. He is well-read about the NEP and expert in curriculum development as per the NEP guidance editorial board and review, currently, he is also a Member of:

- Consultative Group NEP 2020 CBSE
- Ministry of Education

- Independent Director of Rajasthan Venture Capital Fund, (GOR)
- Rajasthan Trustee Company Private Limited, (GOR)
- Sehaj Synergy Technologies Private Limited, India.

He has 72 plus patents under his name in the field of IT, Networks, and Sensors. He has published more than 279 Research Papers in reputed Journals like ACM, Springer, Elsevier, Taylor and Francis, and others, and International and National Conferences, Co-authored 09 Books, and co-edited 36 Conference Proceedings.

Prof. Dr. Ajay Rana has worked closely with the examination system and carries experience in carrying out various rankings, accreditations, and affiliations such as UGC, NAAC, NIRF, QAA, QS, WASC, WSCUC, and IET and statutory Bodies like AICTE, NCT, and BCI. He has undertaken 45 Sponsored Research Projects and 18 major systems-based Management Consultancies in several reputed organizations both public and private, in India and abroad. 18 students have completed their Ph.D. under him. He has organized more than 504 conferences, workshops, faculty development programs, Seminars, and Talks sponsored by IEEE, Springer, CSI, and others.

Dr. Rana has excellent networking and social skills and a vision for enhancing professional connections with Top Academicians, Industrialists, and Bureaucrats at both national and international levels. Prof. Rana's areas of interest include Software Engineering, Soft Computing, Information Technology, Machine Learning, and Augmented Reality. With an intent to provide a robust learning environment to students and to strengthen the Indian Education System.

Prof. Dr. Ajay Rana has visited many top universities & colleges which have a legacy of more than 1200 years of producing leaders around the globe. He possesses deep organizational ethics, and equality, and believes in holding the hands of every individual who wishes to succeed in life.

CHILDREN OF INDIA'S BURNING COALFIELDS DREAM OF A **FIRE-FREE FUTURE**

Coal workers hope education can help the next generation win cleaner, healthier jobs in a region that has been wedded to dirty, dangerous mining for over a century.

At both the national and local levels, moving away from coal will mean tackling how to replace jobs in coal-reliant regions like Jharia, where the first literate generation has emerged and is seeking alternative work.
Image: Environmental Change and Security Program, CC BY-SA 3.0, via Flickr.



ideo blogger Lalji Kurmi is waiting to go viral. It's an unusual dream for a resident of India's oldest coalfield, Jharia, where fires rage underground, bare trees stand guard morosely around mines spewing dust and fumes - and where coal has provided work for at least four generations.

Kurmi, 32, was the first in his family to get an education: a diploma in mining. Now he and many other young people in the region want to leave their soot-blighted lives behind, even as coal production soars.

But they face an uphill struggle in an area where there is no other thriving industry.

Kurmi travels to nearby towns and makes videos showcasing visitor attractions such as markets, temples and fairs, which he uploads to his YouTube channel in the hope of winning more views and subscriptions to draw in advertising and generate revenue.

"My father operated wagons that carry coal. But I don't like this work. You inhale fumes all day and live in fear of fatal accidents," said Kurmi, sipping tea from a clay cup at a roadside eatery.

"I tried getting a job in railways, the army, but couldn't qualify. I have got some fame among locals from my videos and I like it," said Kurmi,

whose YouTube channel has 4,000 subscribers. "If one video goes viral, life will take off," he added optimistically. Jharia is synonymous with the coking coal used in steel-making, a valuable commodity in India which imports more than 57 million tonnes of it annually, spending upwards of 450 million rupees (\$5.53 million), government data shows.

Daily coal production in Jharia - where technical issues mean only about a third of its more than 100 mines are functional - this year jumped to 100,000 tonnes, up from an average of 80,000 tonnes until 2021, local mining officials said.

India is boosting coal production nationwide to cut import costs and meet rising energy demand.

Despite the upward trend, the eastern state of Jharkhand, where Jharia is located, launched an effort in November to study the impacts of expected future coal-mine closures on the local economy and its people. The announcement of a new

"Sustainable Just Transition Taskforce" pointed to India's commitments, made on the global stage, to cut climate-heating emissions to net zero by 2070 and reach 500 gigawatts of renewable energy capacity by 2030.

With 13 of Jharkhand's 24 districts rich in coal reserves, preparation for a future without the polluting fossil fuel must start now, said Ajay Kumar Rastogi, chair of the taskforce, which he said was the first such body in any Indian state.

"Jharia is one of the oldest coalfields and the entire economy revolves around coal. Once there is withdrawal, there will be an impact. The production peaks will be followed by decline," Rastogi predicted.

The taskforce wants to plan for change across the entire "coal ecosystem" to ensure no one is left out and even those who illegally scavenge coal - not just formal and informal workers - have livelihood opportunities after mining ends.

"It is the duty of the state government to take care of its every citizen," Rastogi said.

JUST SOCIAL TRANSITION

India is one of three new countries rich nations are talking with about forming a "Just Energy Transition Partnership", something already agreed for South Africa and Indonesia. Any deal ought to involve identifying and helping all those who now depend on the coal industry, not just its workers, experts said.

"The funding that comes should not just be for renewable (energy) projects but also in the form of grants for people who will be most impacted," said Deepthi Swamy, climate lead with think-tank WRI India. Such partnerships are "not just about transitioning to clean energy but also about how we ensure these financing mechanisms address social safety nets", she added.

Yet a future beyond coal appears a distant prospect in Jharia, where children walk to school through smouldering rocks and mothers scavenge coal to pay for their tuition. Posters in smoke-filled neighbourhoods offer courses in commerce and science, as dreams of a greener life begin to take root in the burning coalfield.

Aarti Paswan, 21, a postgraduate student at a university 25 kilometres (15.53 miles) from home, hopes to pass the exams to enter India's Border Security Force, inspired by a Bollywood film she saw as a child that showed soldiers braving bullets to save their country.

But, for now, she must figure out where to bathe after the canal she used before was cut off by hillocks of debris deposited from recent mine excavations.

"I pick coal as it funds my travel to the university," she said, standing near stoves belching out smoke in Jharia's Golakdhi settlement. "I don't want to do this. I want a job to serve my country."

“Other coal towns have thermal power plants, small industries and also open space. Here, there is no space between habitations and coalfields and there is nothing else but coal.”

D.D. RAMANANDAN,
General Secretary, All India Coal
Workers Federation

GETTING AHEAD

At both the national and local levels, moving away from coal will mean tackling how to replace jobs in coal-reliant regions like Jharia, where the first literate generation has emerged and is seeking alternative work, analysts said.

Parents who inhale toxic fumes, gather coal in baskets and are forced to buy drinking water on a daily basis do not want their children to inherit this kind of life.

They see coal not only as a polluting resource but one that stopped yielding decent jobs and money years ago.

Sanjay Kumar Pandit, 35, who picks coal illegally, said local people had tried to find jobs in mines but outsourcing companies were bringing in labour from other states.

Pandit, whose father was an informal mine worker but earned fixed weekly wages, said the future was even more bleak for the next generation, as Jharia's coal reserves will not last forever.

"All we will be left with is the debris of mines," he said. "Our lives are over, but the future of our children must be protected."

India this year announced its first plan for a socially fair shift

away from coal production in areas where mines have been shut, and the federal coal ministry refers to "just transition" in its action plan for 2022-23.

Although the government has announced an expansion of coal mines and new coal-fired power plants to ensure energy security in the next few years, it plans to reduce the share of coal in its overall energy mix by the end of this decade.

Coal accounts for nearly half of installed power capacity in India, while renewable energy sources including solar and wind provide about 30 per cent. The country aims to meet 50 per cent of its energy requirements from renewables by 2030.

Santosh Patnaik, who manages fair transition programmes at campaign group Climate Action Network South Asia, said young people in coal communities want to break out of the grinding cycle of poverty their families were trapped in for decades. "This is a generation ready to move away from coal, which is encouraging. A just transition plan needn't wait for mines to close - it is needed now. Jharkhand could set an example for other states," said Patnaik.

EARTH ON FIRE

For now, a layer of dust, smoke and soot hangs over Jharia, its coalfield dotted by multiple fires - 595 of them, according to the official count. In some places, huge flames leap out of coal pits, while smaller fires burn in other areas, like decorative torches in a seaside resort.

The fires, some of which have burned for a century, were caused by opencast mining, a method that has largely replaced underground mining in the past two decades, exposing large volumes of coal to the air.

The type of coal found here is quicker to ignite, said researchers at the Indian Institute of Technology -

India School of Mining (IIT-ISM) in Dhanbad district, where Jharia is located.

The fires have hollowed out parts of the earth, causing concrete roads and homes to cave in over the past 20 years and resulting in deaths.

The numbers vary, with one local activist putting the death toll at 45 in Jharia while officials estimate it at fewer than 20.

Official surveys show that the fire area, which once spread over 8 sq km or nearly 2,000 acres - the size of about 1,000 Olympic-size soccer fields - has shrunk to 1.8 sq km.

Several fire areas have been excavated and the debris piled up into hillocks, known as overburdens, where researchers say fires continue to burn.

Some 55,000 families - or at least 200,000 people - have been impacted by the fires, according to a 2004 estimate that is still considered to be the official count of the number of people who need to be relocated.

Of these, only 4,000 families have so far moved to a colony built two decades ago, about 8 kilometres from the mining area.

Even though their neighbourhoods resemble a war zone, people resist moving to the colony, citing a lack of facilities such as drinking water and proper drains.

But their main concern is that relocating will disconnect them from the mining area that provides their only income.

NOTHING BUT COAL

The district administration, responsible for the upkeep of the existing colony, plans to create a municipal body to manage its maintenance, officials said.

It has also engaged global consultancy firm Ernst & Young to design a skills development plan to help Jharia locals find new jobs.

As part of this, their employment interests are being mapped, and the administration is working on skills

training for young people, as well as moving families out of high-risk fire areas, said Sandeep Singh, Dhanbad district's administrative head.

But quick and easy solutions are elusive because of a lack of any significant industry other than coal.

In addition, Jharia falls inside the Dhanbad municipal limits and so is not designated as a rural area, meaning residents are excluded from the state-run rural jobs scheme that offers 100 days of paid labour every year.

D.D. Ramanandan, general secretary of the All India Coal Workers Federation, said Jharia faced a complex problem in creating new sources of income.

Past efforts to douse the flames have included sealing fire sites with soil and pouring liquid nitrogen and water on them - but those methods have proved either ineffective, costly or dangerous.

IIT-ISM professor Ram Madhab Bhattacharjee said the fires not only put nearby residents at risk but are causing India to lose precious coking coal.

IIT-ISM researchers have proposed producing liquid nitrogen locally to save on the cost of ferrying it in by tanker.

But effectively eliminating the fires would also require evacuating residents from the affected area, many of whom are reluctant to

Some 55,000 families – or at least 200,000 people – have been impacted by the fires, according to a 2004 estimate that is still considered to be the official count of the number of people who need to be relocated.

“Other coal towns have thermal power plants, small industries and also open space. Here, there is no space between habitations and coal-fields and there is nothing else ... but coal,” he explained.

Fires and mines can be seen from Jharia's roadsides, some less than a mile from busy markets, and narrow lanes lined with smoke-belching coal stoves snake through homes leading to the burning pits.

Shiv Balak Paswan, vice president of nonprofit group Jharia Coalfield Bachao (Save Jharia Coalfield), said opencast mining had helped locals, despite exacerbating fires, as it opened up more reserves, making coal more accessible to those who gather it illegally because they have no other option to earn a living.

move. “Attempts to do so can cause unrest. This is a big social challenge,” said Bhattacharjee.

SCAVENGING TO SURVIVE

Mining in Jharia began about a century ago and the area was flush with coal jobs until the early 1990s, drawing workers from neighbouring states to help operate and manage its mines.

The workers' neighbourhoods that sit next to the mines sprang up four to five decades ago, around the same time private mines were taken over by the government.

Families have stayed there even as jobs have dried up with the mechanisation of mines and outsourcing to private labour agencies who source workers from other states

to keep costs low. Local activists estimate that nearly 100,000 people scavenge coal due to a lack of other jobs, and even those who do tough work like loading coal onto rail wagons miss the earlier days and lament the dearth of alternative options as education levels have improved.

"I wanted to join the police but there are no vacancies," said Govind Bavri, 30, the son of a coal loader who studied up to 12th grade and now works as an attendance clerk with a construction company for a monthly salary of 8,000 rupees (\$97).

Jharkhand, one of India's most impoverished states, has launched several plans to improve living conditions and job opportunities, but they have not succeeded, locals said.

taskforce aims to study work opportunities in sectors like agriculture, forestry and renewable energy, as well as financing models to help small and medium-sized businesses set up shop.

Taskforce head Rastogi said mine closures would escalate hunger and fuel social unrest - but once coal production is phased down, the land could be put to better use to generate jobs for young people.

The taskforce will look at introducing biofuel plants, solar energy projects and mining tourism that could help restore the scarred environment, while creating work for locals. "This generation is more aware of what is happening across the world. They have access to the

and hopes to find a job at a beauty parlour one day.

"I want to go beyond coal, develop a personality," she said.

Suman Kumari, 21, one of an earlier batch of students, was placed at a beauty parlour in Patna in neighbouring Bihar state, but did not take up the post as it was too far from home and she would have had to spend all her wages on rent and food.

She now picks coal but has formed a girls' dance group, and films and uploads their performances to YouTube.

She is also waiting to be noticed - like video blogger Kurmi - and hopes a television dance reality show will discover her talent.

Their parents, meanwhile, are seeking more concrete action from the government to improve their coal-dependent lives, to train their offspring and to build cleaner industries that can create more job opportunities.

Anita Devi, a 32-year-old mother of four, illegally gathers coal for nearly 12 hours a day near the Gesadi mine, selling it in sacks for 100 rupees each. As she works amid burning seams of coal, her nails, face and feet are black with ash - but she sees the relentless work as the only way to secure a better future for her children.

"I don't want them to have my life. I will turn black like coal, but I suffer every day so my children don't," she said. "I will do anything to ensure they study." 📺

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(Source: <https://www.eco-business.com/news/children-of-indias-burning-coalfields-dream-of-a-fire-free-future/>)

The taskforce will look at introducing biofuel plants, solar energy projects and mining tourism that could help restore the scarred environment, while creating work for locals. This generation is more aware of what is happening across the world. They have access to the internet and realise the potential outside coal. The biggest challenge would be to find alternatives for them.

Activist Balak has sought cash compensation from the state and federal governments of up to 2 million rupees for each family relocated from the fire area, to make up for their lost livelihoods, but is still awaiting a response.

Meanwhile, the expanding mines are swallowing more homes, and their inhabitants are also being asked to move, swelling the number of families that need to be relocated, Balak said.

PARENTAL SACRIFICE

In the next two years, the region's newly-launched just transition

internet and realise the potential outside coal. The biggest challenge would be to find alternatives for them," said Rastogi.

Some young men have migrated to cities to work on construction sites, but the high cost of rental accommodation and food deters many from leaving.

A few miles from the burning coalfields, at a busy junction in the town of Dhanbad, a state-run institute runs free courses on fashion design and beauty care. A few of those enrolled are from Jharia.

Anu Kumari, 17, is learning to thread eyebrows and do facials,

Fisherfolk are key supporters for conservation of the endangered Guitarfish in Goa

WWF-India, in partnership with Sony India, is working closely with the fisher community along Goa's coastline to conserve the Guitarfish

WWF-India in partnership with Sony India, conducted the third session of the Fishermen Awareness Programme, to educate fishermen about protecting Guitarfish, a critically endangered species. Around 30 artisanal/traditional fishers of the Siridao Traditional Fishermen Association, from the village located in North Goa attended the session. The objective of this programme was to sensitise the fishing community about the importance of Guitarfish in the marine ecosystem and the need to conserve it.

Guitarfish, which are closely related to sharks and rays, are known to be found along the coast of Goa but little is known about their distribution and ecology. Guitarfish are important components of coastal socio-ecological systems. Seven species have been believed to be present in Goa's coastal waters. There is also a concern that most of these species are either threatened due to habitat loss or are nearing extinction due to unintentional catch or bycatch.

WWF-India and Sony India are working together to study and conserve the guitarfish population along

Goa's coastline. The project focuses on the interaction of the guitarfish with artisanal fishing gear. This includes traditional shore seine (Rampon) and gill nets deployed by fishers using small vessels with outboard motors.

Speaking about the initiative, Sanjay Bhatnagar, Director, Corporate Human Resources and CSR at Sony India, said, "We are glad to have partnered with WWF India as this initiative has provided us with a chance to contribute towards helping conserve endangered marine life, like the Guitarfish and making our best effort to save them from going extinct. While we bring the best-in-technology to the market, our aim is to make a positive difference in the lives and survival of these species and the community at large."

The fishers were made aware of the ecology and morphology of guitarfish and how they can support improving the near-shore habitat of the guitarfish by managing discarded nets and other fishing gear. They also learnt about small efforts which would make a large impact on guitarfish conservation, like release of live individuals caught in their nets as bycatch. In the long term, the plan is to inculcate the idea of community-based coastal habitat conservation with the involvement of the fishing community.

While speaking to the fishermen, Aditya Kakodkar, Senior Coordinator, Marine Conservation WWF-India's Goa office, said that "Fish are a staple diet of Goa's population and meso-predators such as the

Guitarfish play important role in maintaining a healthy ecosystem in the intertidal zone, which are also our fish nurseries. The long-term objective of the partnership is not only to conserve guitarfish to bring focus to the larger aspect of coastal biodiversity conservation through community participation."

The fishermen awareness sessions have disseminated useful information about Guitarfish conservation to the local small-scale fishers. Sony and WWF-India intend to continue to study different aspects of guitarfish ecology and its conservation. These efforts will contribute towards boosting our understanding of the guitarfish population and our coastal environment. WWF India also aims to work closely with the local fishing community towards the conservation of endangered species. WWF-India and Sony India believe that meaningful conservation can only occur with the support and involvement of the local communities.

The conservation initiative with WWF is part of Sony India's broader CSR schemes. The programme kick-started in April 2021, with three objectives - to map the habitat and distribution of guitarfish along the coast of Goa, improve knowledge and raise awareness about their conservation amongst the fishermen communities, thereby reducing the threats due to fisheries. 📍

(Source: https://www.wwfindia.org/news_facts/pres/?21262/Fisherfolk-are-key-supporters-for-conservation-of-the-endangered-Guitarfish-in-Goa)

THE STATE IS TAKING BACK ENERGY

But many of the policy measures introduced over the past year are piecemeal responses to the fundamental challenges of energy insecurity and climate change, according to

Nick Butler



A lignite power plant in Germany. Carbon capture and storage is designed to strip out carbon dioxide from the exhaust gases of industrial processes like gas and coal-fired electricity generating plants. Image: r.classen, CC BY-NC-ND 2.0

Although uncertainty prevails in today's global energy market, one thing has become clear: governments are reasserting their central role.

The motive is pragmatic rather than ideological, and the details vary from one country to another, but the trend is unmistakable. Governments of all political hues are taking back control of a market that had largely been left to private firms with only limited regulation. In many Western economies, this arguably represents the largest shift in the balance of public and private economic power since World War II.

The state's newfound assertiveness stems partly from huge price increases that threaten large-scale energy poverty and the collapse of some energy-intensive businesses. After years of underinvestment in the sector, the surge in energy demand in the wake of the Covid-19 pandemic, especially in Asia, inevitably caused prices to jump. The cost of natural gas to consumers in the European Union rose by 12 per cent in the second half of 2021.

But this was merely a prelude to the current price spikes resulting from Russia's invasion of Ukraine. The EU's plan to cut its imports of Russian natural gas by two-thirds

by 2023, together with Russia's reduction of supplies to countries including Germany and Finland, caused the European benchmark price to increase fivefold over the 12 months to June of this year. On one estimate, average consumer energy bills in Britain – which imports little Russian gas but relies on the global market for 50 per cent of its daily needs – were predicted to be four times their 2021 level by early next year.

A second powerful factor compelling government intervention is climate change. The surge in energy demand over the past year has been led by coal, which remains the

dominant source of power in Asia, causing greenhouse gas emissions to return to their pre-pandemic level. Despite strong growth in renewables such as wind and solar, the world's continued reliance on hydrocarbons means that, absent further government intervention, emissions will continue increasing for several years to come.

None of these challenges can be addressed by market forces alone. Without a carbon price or other regulatory measures that only governments can put in place, people will continue to use gasoline-fuelled cars. Market forces can do little to help families facing a sudden rise in the cost of an essential commodity. Nor can markets redistribute the windfall gains made by companies such as Saudi Aramco, which reported a record profit of \$48.4 billion in the second quarter of this year, to the many smaller businesses for which energy is a crucial input.

State intervention in the energy market is taking many and varied forms. The German government has announced plans for 2 per cent of the country's land area to be used for the production of wind power, and is devising emergency rationing schemes to manage anticipated winter energy shortages following Russia's cutoff of gas supplies.

All British households initially received a £400 (\$450) handout, to help them cope with rising energy bills, partly funded by a windfall tax on oil and gas producers. But that proved insufficient and upon becoming Britain's new prime minister, Liz Truss capped household energy bills for two years and offered short-term support for business users. To increase domestic energy supplies, she granted new North Sea oil and gas licenses and lifted the moratorium on fracking. The United Kingdom's green agenda nominally remains in place with no new gasoline- or diesel-powered cars to be licensed from 2030, but, for

the moment, government intervention is focused on price controls and increased hydrocarbon production.

Across the Atlantic, United States president Joe Biden's recently enacted Inflation Reduction Act provides \$27 billion to help low- and middle-income American households convert to cleaner energy, as well as funding to maintain the country's loss-making nuclear-power sector. In France, President Emmanuel Macron is in the process of fully nationalising the power utility EDF, a former flagship of French industrial strength that has suffered two decades of managerial and technical failure. And energy-price controls have been tightened there and across much of continental Europe.

Unfortunately, these and many other recent government initiatives are piecemeal responses to the fundamental challenges of energy insecurity and climate change. Too many measures are insufficiently thought through, provide poor value for money, and fail to address underlying obstacles to change.

For example, a major shift to electric vehicles makes sense only if both charging networks and secure supplies of the advanced materials on which EVs depend are available. Small universal cash handouts are costly and do not address concentrated long-term energy poverty. Policies to increase wind power generation are irrelevant unless the infrastructure to cope with distributed electricity supplies is in place.

Governments reach for short-term solutions that demonstrate that they are acting. But the resulting policies are not always the cheapest or the most effective, and many turn out to be no more than temporary fixes. In none of the countries mentioned above is there a settled consensus on the shape of long-term energy policy.

Nonetheless, the trend toward greater government intervention in

the energy sector is well established. As the limitations of particular policies are revealed, policymakers will respond with more intervention, not less. The role of the state will have to expand further, not least to address the investment gap that has emerged. Additional funds are needed to meet future demand for all forms of energy and associated infrastructure. Financing the transition to a low-carbon economy will require vast sums.

Governments are likely to be the main source of the necessary capital, as well as supplying guarantees and subsidies to the private sector. But whether governments, many with finances already overstretched by Covid-19, will respond adequately is far from certain. In the UK, the opposition Labour Party, now well ahead in the polls, has promised to create a new publicly owned Great British Energy company to deliver a carbon-free electricity sector by 2030.

None of this is a recipe for an ideal outcome. The task of ensuring a continuous and affordable energy supply is too important to be left to the market and too complex to be taken over by ministers and bureaucrats. The involvement of both is necessary, but neither, alone, is sufficient.

Logic points to cooperative arrangements whereby governments set energy objectives and standards, and private-sector firms compete to play a part in meeting the overall goals. But achieving such collaboration and balance currently seems no more than a distant aspiration. ■

Nick Butler, a visiting professor at King's College London, is Founding Chair of the King's Policy Institute and Chair of Promus Associates.

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(Source: <https://www.eco-business.com/opinion/the-state-is-taking-back-energy/>)

Indian farmers turn to solar-powered fridges to fight food waste

As climate change brings more extreme weather to India, sustainable cold storage units help off-grid farms to deal with the heat.

For Indian farmer Lalmuankimi Bawitlung, selling her annual orange harvest is often a race against time to beat the heat. The 38-year-old, who owns a small plot in her village in north-eastern India, threw away about a third of her 350 kg (772 pound) crop last year because the fruit became overripe or rotten, and could not be sold.

“I have always been in a hurry to dispose of my oranges at whatever price available, to prevent as much wastage as possible ... (with) the increasing heat making it worse,” she said at her home in Kawnzar village in the state of Mizoram.

But Lalmuankimi’s prospects are brighter since the state government in January installed a 10-tonne solar-powered cold storage unit for farm produce in the nearby village of Khawzawl.

The facility uses ice battery technology, or thermal energy storage, to convert water into ice within six hours using solar.



Women harvesting lemongrass at the Chisapani community forest in India.

Image: CIFOR, CC BY-SA 3.0, via Flickr.

The Mizoram Science, Technology & Innovation Council (MISTIC) worked with cold chain company Infocold to set up the 2.2 million-rupee (\$27,100) facility, which is open to about 235 farmers such as Lalmuankimi across several villages in the area.

It meant Lalmuankimi could store the rest of her last harvest in February, 7-8 kg of oranges, instead of discarding them.

She took the fruit out of cold storage in August when it was out of season and managed to sell it for 250 rupees per kilo - five times the price she would normally have

expected to fetch. “After hours of backbreaking toil ... I can now sit back and enjoy the fruits of both my farm and labour, as there is hardly any wastage that I have to worry about,” Lalmuankimi said. Although India has thousands of cold storage facilities for produce - about 8,200 as of 2020, official data shows - these units are connected to the electricity grid rather than powered by solar.

Farming advocates and NGOs say the energy costs of the units are too high for many small-scale farmers, while common power outages mean those who can afford to use them

must often rely on expensive and polluting diesel generators as back-up. To address this, more companies and civil society groups - often backed by government funding - are now working to set up sustainable cold storage units, powered by solar, nationwide.

From waste to emissions

In the past decade, the government has implemented policies and action plans, and provided subsidies to develop cold chain systems across the country as part of a drive to cut food waste.

About 40 per cent of food produced in India is wasted at the cost of billions of dollars per year, the United Nations has estimated.

But it's not just an economic issue.

Food waste accounts for about 8 per cent of global greenhouse gas emissions, according to a UN report launched at the COP27 climate summit in Egypt which said sustainable cold chains can play a major role in tackling "the climate and food crises".

India is enduring ever-more extreme weather - from floods to droughts - and rising temperatures due to climate change, with farmers increasingly worried about their crops and wastage.

Given that many farms are not connected to the grid and rely on diesel for power, clean energy experts say solar solutions such as cold storage systems will not only improve farmers' incomes but help the agriculture sector go greener.

"Solar-powered cold storage hubs ... take care of both the environmental and socioeconomic challenges without raising carbon footprints," said Rekha Krishnan, the chief executive of Clean Energy Access Network, an industry association in India.

Yet logistical issues and costs may be a barrier to scaling up such storage, industry representatives and experts warn.

Scaling up

The co-founder and CEO of Inficold, Nitin Goel, said he hopes to cut the price of the company's cold storage units by half within the next five years as more "get rolled out to the markets". Its five-tonne units cost about 1.4 million rupees.

Inficold currently has 116 facilities across 19 Indian states that provide storage for about 25,000 farmers, and the firm plans to double the number of units next year, Goel said.

The entrepreneur acknowledged there are challenges to scaling up such as transporting the large "containerised" units across poor roads and rough terrain to remote parts of India. But as long as they can cut carbon emissions, "the pains are worth it to keep our environment cleaner," said Goel.

The cold storage unit in Khawzawl means a tomato-grower cooperative from Tualte village - which makes up most of the users - no longer has to harvest all of its produce at once but can pick the fruit about twice a week and sell at better prices. The farmers pay one rupee a month for each kilo stored, with the money used to maintain and clean the facility.

Krishi Vigyan Kendra (KVK) in Khawzawl, an agricultural science centre funded by the federal government, is helping the farmers and training them on how best to keep their produce to prolong its shelf life and ensure it stays as fresh as possible. "The technology is helping farmers to be resilient to climate impacts and empowering them in their fields and (at) market as well," said KVK project associate Isaac Lalremruata.

MISTIC scientific officer Joel Dantes said the state was prone to climate shocks such as heavy rains and landslides that cause sudden power cuts, making off-grid sustainable solutions vital.

For the farmers in the area - who also grow pineapple, kiwi and

papaya - cold storage affords them a "back-up of four to five days" as the systems can keep running for that period of time even where there is not much sunshine, Dantes said.


Climate 'saviour'

Meanwhile, in the southern state of Telangana, the Kattangur farmer producers' group bought two five-tonne solar cold-storage units from Inficold in May this year - with major financial help from Bharatiya Vikas Trust, an NGO, and some of their own money.

The farmers said having the "climate solution at our own local level" had more than doubled their incomes, together with apps showing market prices to determine the best time to sell.

This has enhanced their quality of life, said member N. Dharma Reddy, highlighting how the group can now afford better healthcare, education and technology like mobile phones.

"But most importantly, we are able to plough back the investments to our fields by buying more seeds, mini electric tractors, spraying and weeding tools and cattle," he said.

The group wants to install another dozen units to cover more villages. Its head, Nandyala Nar-simha Reddy, said members were looking for loans or sponsorship to help them cover the cost. "For small and marginalised farmers, such solar-run cold storage units act as saviours against climate woes that are getting more and more unpredictable and common," he said. 

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(Source: <https://www.eco-business.com/news/indian-farmers-turn-to-solar-powered-fridges-to-fight-food-waste/>)

Solar power saves US\$34 billion in fossil fuel costs for Asian countries

The majority of these savings were in China, Japan, India, Vietnam and South Korea. Countries like the Philippines and Thailand which lag in solar capacity have also avoided millions in fossil fuel spending, new research shows, writes **Hannah Alcoseba Fernandez**



A biker cycles past a solar farm in Valenzuela City, Philippines.

Image: International Monetary Fund, CC BY-SA 3.0, via Flickr.

Solar generation helped seven Asian countries avoid US\$34 billion in fossil fuel spending in the first half of 2022, amid soaring gas prices, according to a new study.

China, India, Japan, South Korea, Vietnam, the Philippines and Thailand saved fossil fuel costs equivalent to 9 per cent of total fossil fuel costs in these countries between January and June, found a report jointly published by London-based think tank Ember, the Centre for Research on Energy and Clean Air, and the Institute for Energy Economics and Financial Analysis.

“Asian countries have shown that rapid solar deployment is possible, setting a remarkable example and providing valuable lessons for their peers in the region,” said Dr Achmed

Shahram Edianto, electricity analyst, Ember Asia. “As the prices of solar and storage plummet, and the potential cost savings are starting to materialise, solar dominance in Asia now looks set to come much sooner than previously expected.”

China, which has the greatest solar capacity in the world, had the biggest savings of about US\$21 billion, as solar met 5 per cent of its total electricity demand.

Japan saw the second largest contribution with US\$5.6 billion in avoided fuel costs thanks to solar power generation alone, which reached record levels for the country in May.

In India, where the high price of coal is one of the main factors in its ongoing power crises, solar generation helped avoid spending of US\$4.2

billion in fuel and the need for an additional 19.4 million tonnes of coal that would have further stressed its already strained domestic supply.

South Korea, which had a 5 per cent generation share in solar, saved US\$1.5 billion.

Vietnam, on the other hand, had close to zero terawatt hours (TWh) of solar generation in 2018, but it has reached the point where solar power accounted for 11 per cent of electricity demand, equivalent to 14TWh. This has allowed the country to avoid US\$1.7 billion in additional fossil fuel costs.

Even in Thailand and the Philippines, where growth in solar has been slower, there have been notable savings in expenses for dirty energy. While solar only accounted for 2 per cent of Thai-

land's electricity in the first six months of 2022, its generation meant that the nation was able to do without spending US\$209 million on fossil fuel. Similarly, the Philippines avoided spending US\$78 million in coal, oil and gas, despite solar accounting for only 1.7 per cent of total power generation.

Philippines and Thailand: new solar ambitions

The report highlighted that the Philippines now has more favourable policies towards solar energy, based on its recently revised energy plan.

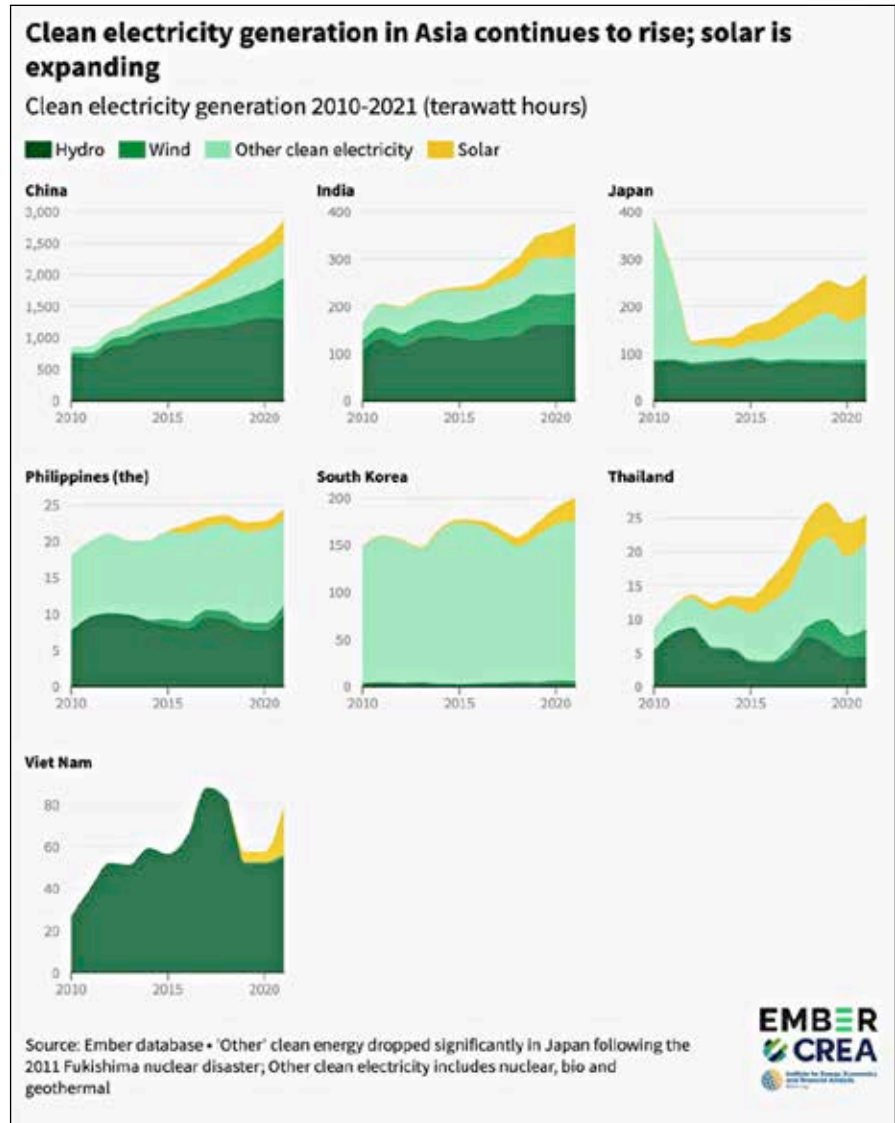
New rules now require utilities to increase their renewable energy mix, in line with the government's target to utilise 35 per cent clean power by the end of the decade, and 50 per cent clean power by 2040.

The Philippines also has net metering provisions in place where corporate customers can use electricity from their renewable energy generator on site, hence reducing the amount of electricity they need to purchase from their retailer. Power purchase agreements can now be done directly between large consumers and solar generators.

Two of the country's leading renewable energy players Solar Philippines and Ayala's ACEN now have substantial solar capacity that has been permitted or is under construction. But challenges to access to financing for solar installations remain.

The country seems to be striking a new tone, and efforts to expand solar capacity could be a gamechanger, said the study. "But its energy policies have often proven fragile." The study added that limited rooftop space and challenges to accessing finance are additional barriers.

Thailand led Southeast Asia on solar investments, especially with its recent installation of floating solar power in the north of the country, which could easily connect



to existing high voltage transmission lines. The floating hydro-solar farm in Sirindhorn is capable of reducing the kingdom's carbon emissions by 47,000 tonnes every year, as part of its ongoing commitment to reach carbon neutrality by the year 2050.

But without a conducive policy environment, progress on installations has been slow in the kingdom.

Thailand once had among the highest installed solar capacity in Asia, but while neighbours like Vietnam and China came up with subsidies and feed-in-tariffs that encouraged solar deployment, the country has lagged in implementing focused policy or financial incen-

tives to build on its strong foundation for solar development in the last decade. Early leaders in the sector, such as B. Grimm and Thai Solar, have shifted their focus away from the domestic market to seek regional opportunities.

The report is optimistic that Thailand's solar capacity will continue to expand, but adds that there is a need for a "concerted decarbonisation shift", in order for the renewable energy to replace gas in the country's energy mix.

(Source: <https://www.eco-business.com/news/solar-power-saves-us34-billion-in-fossil-fuel-costs-for-asian-countries/>)



How an Indian start-up is creating young sustainability leaders

One Million for One Billion, or 1M1B, aims to train a million youths to drive sustainability for a billion-plus Indians, writes **Biman Mukherji**

When 14-year-old Maulik Bansal came across giant plastic dumps near his home in the Indian capital city of Delhi, he was worried about the city's future. He wanted to make a difference to the environment, but did not know how.

Shortly after, an organisation called 1M1B (One Million for One Billion) conducted an orientation programme at his school to train students to launch sustainability initiatives. Bansal enrolled himself during last year's summer break.

The 40-hour programme inspired him to start a venture to convert

used bedsheets into cloth bags and distribute them in neighbourhood shops in exchange for their stocks of plastic bags. The teenager's initiative proved so popular that he launched another – this time to collect waste milk packets and send them to a recycler.

"Now, I aim to educate people in rural areas about this huge problem and make entire villages plastic-free and healthy," he told Eco-Business.

Like Bansal, thousands of young people have launched their own initiatives in pockets across India

after undergoing training by 1M1B. The non-profit aims to build a million-strong workforce to lead the billion-plus nation towards sustainable development. The Sustainable Development Goals (SDGs) were adopted by the United Nations in 2015 as a universal call for action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. The 17 SDGs recognise that action in one area will affect outcomes in all others.

The 1M1B programme, which is accredited by the United Nations, began as a private initiative by corporate executive Manav Subodh, whose work in public policy at the international chipmaker and technology company Intel often required him to meet local communities in the hinterlands worldwide.

On his travels, people would invariably ask him for a job. Or, how his company could solve their communities' problems such as the lack of clean water supply. It made Subodh wonder why people were so dependent on a company or the government instead of creating a sustainable future for themselves.

The thought inspired him to ditch his 17-year corporate career and launch 1M1B with a Future Leaders Training Programme. "If we democratise and universalise entrepreneurial education and skills, then the new India can be so different," Subodh told Eco-Business.

Young sustainability leaders

Over the last seven years, the non-profit that is largely financed through corporate social responsibility allocations from other companies, has trained more than 50,000 youths and brought on board 3,000 schools.

The training programme is offered in villages, towns as well as cities across India and the content is modified based on students' needs, their education, background and talents. Students aged 14-17 years can

enrol, but the company plans to soon open up training for young adults aged up to 22 years. Simultaneously, 1M1B fellows also look to enrol entrepreneurs in villages who might be struggling to find their path.

"Students are encouraged to work on projects based on their fields of interest to create actual impact. Their solutions address real-world issues such as poverty, [rural-urban] wage gap, unemployment and climate change," Subodh said.

In a typical class, students are not only taught how to use the latest technology tools, but also encouraged to apply them to solve real-world problems. During one such virtual session recently, students discussed their ideas about how artificial intelligence can be used for projects to meet their preferred sustainable development goals.

"The SDG which I am focusing on is Life on Land and particularly poaching, which is a huge issue," said Amaya Durbha, a 14-year-old student at the National Academy for Learning, Bangalore, who is part of the Future Leaders programme. "AI can be utilised in combination with drones or cameras to identify poachers and trespassers in wildlife reserves. If paired with a database containing the faces of nearby residents, it can assist in nabbing them," she said, "AI can analyse patterns in the behaviour of poachers, predict what time they will come in and what time they will be poaching. It will allow forest rangers to position and time themselves correctly to intercept the poachers before they cause harm to wildlife."

From pockets to system-wide change

Such ideas are now blossoming into real-life sustainability projects in pockets across the country.

Arava Rajesh, 28, was dejected after two of his business ventures failed. His decision to enrol as an 1M1B Fellow proved a turning point,

he told Eco-Business. Discussions with the programme mentors convinced Rajesh to set up a treatment plant in his hometown, the remote town of Narsapur in Andhra Pradesh in southern India, which is now providing clean water to 200 people daily. "I took this decision as there was a clear need in the community. Now, there is no turning back and I plan to go onwards and upwards," he said.

Similarly, 14-year-old Esha Nahar, a trainee with the 1M1B Future Leaders Programme in the southern Indian city of Bangalore, wanted to contribute towards reducing plastic waste. She tied up with a company called Bamboo India to widely distribute bamboo products to replace plastic objects such as toothbrushes.

"I am addressing this problem [of plastic waste] by spreading awareness and bringing about a change in our society's mindset," Nahar said, adding that she has distributed close to 1,500 bamboo products and ensured that people living in her street no longer use plastic toothbrushes.

Many students who have undergone the Future Leaders Training Programme choose conventional careers such as engineers, IT professionals or human resource managers. But the skills they imbibe always help them to contribute to sustainability, Subodh says, adding that India's net zero-by-2070 goal has created an urgent need for skilled professionals in the hinterlands where projects such as renewable energygeneration will be based.

Hence, the company is aiming to ramp up its programme in villages, despite hurdles such as poor infrastructure. "We are present in about 2,509 villages today, but India has close to 680,000 villages. Hopefully, we will get there," Subodh said. ■

(Source: <https://www.eco-business.com/news/how-an-indian-start-up-is-creating-young-sustainability-leaders/>)

PepsiCo Foundation launches a special month-long 'Purna Swachhta Campaign' in partnership with Recity in Mathura - Vrindavan

PepsiCo Foundation and Recity Network Private Limited launched a special 'Purna Swachhta Campaign', an extension to its 'Purna – Unnati ki Sajhedaari' initiative that was launched early this year in Mathura-Vrindavan. In partnership with Nagar Nigam Mathura Vrindavan (MVNN), the campaign will focus on engaging and educating citizens on the need for adopting responsible waste disposal habits to ensure visible cleanliness in public places in the city. The month-long campaign aims to create awareness around no littering, waste segregation and respecting the waste workforce of the city. Currently running in three wards – 67, 69 and 70 of Mathura-Vrindavan as a pilot, the initiative Purna aims to transform the waste workers into waste professionals by developing a circular, equitable and inclusive model of solid and plastic waste management across Indian cities.

Children across schools will be encouraged to make a conscious choice of not littering their community, the city they live in and practice waste segregation at home. Throughout the month-long program, PepsiCo Foundation and Recity will focus on generating awareness among school kids through various on-ground activities including painting competition, plastic donation drives, thank you letters to waste workers, clean-a-thons and garbage vulnerable point



Swachhta Campaign - Plastic collection Drive

Series of on-ground events to be organized in partnership with the local administration and city schools

Campaign aims to achieve visible cleanliness at public places by encouraging the community to make the conscious choice of not littering and waste segregation

Campaign will further support in enhancing the lives of waste workers into waste professionals

transformation. The campaign will recognize the efforts undertaken by students, schools, citizen communities and waste workers to bring about a change by recognizing them as "Purna Swachhta Champions".

'Purna – Unnati ki Sajhedaari' initiative was launched earlier this year with the vision to transform Mathura-Vrindavan into one of the cleanest cities in the country. The collaborative efforts by PepsiCo Foundation, Mathura-Vrindavan Municipal Corporation and Recity Network Pvt. Ltd. have successfully trained over 4,000 property units, so far, on source segregation. Over 20,000 citizens were reached out and 10 Lakh tourists were engaged on waste segregation and no littering awareness campaigns through hoardings, banners, shop dangles,

Project Purna: Impact at Glance



clean up drives and various events and stakeholder partnerships. Owing to these efforts, over 300 MT of municipal waste was diverted from landfills. In addition to this, over 100 waste workers were professionalized. They were trained on health, hygiene, workplace safety, technology and financial literacy. 5 health camps were organized, and waste workers were vaccinated against Hepatitis B. Various welfare schemes were also unlocked for them such as Health ID, Aadhar card, e-Shram and Life insurance schemes. A Self-Help Group – Radha Rani Swayam Seva Samuh – was formed with 10 women waste workers, who are being upskilled and empowered

financially through vocational skill building training program.

Commenting on the campaign, Juhi Gupta, Head Sustainability, PepsiCo India said, “Aligned to the Government of India’s flagship program, Swachh Bharat Mission, we are delighted to extend our partnership with Recity and launch ‘Purna Swachhta Campaign’ in Mathura-Vrindavan. At PepsiCo India, we are consistently working towards building a more inclusive positive value chain with sustainability at its core under our winning with pep+ philosophy. Since the inception of our ‘Purna – Unnati ki Sajhedaari’ initiative, we have onboarded 100+ workers and engaged 700+ students

from 5 schools in the city. With Mathura-Vrindavan Municipal Corporation’s support we will scale our efforts to make Mathura-Vrindavan the cleanest city in India.”

Suraj Nandkumar, Co-founder & CEO, Recity Network Pvt. Ltd. said, “We are happy to extend our partnership with PepsiCo Foundation through – ‘Purna Swachhata Campaign’ and ensure that Mathura-Vrindavan becomes the cleanest tourist city of India. The success of the pilot of Initiative Purna is a testimony to our mission of ensuring economic resilience of waste workers. We look forward to maximizing circularity of plastic by retaining them in our economy and out of the environment with inclusive and participatory development of waste management systems while creating opportunities for all stakeholders to rise in the waste value chain.”

The ‘Purna Swachhta Campaign’ was kickstarted with a Plastic Donation Drive in 6 schools of Mathura-Vrindavan with support from Mathura-Vrindavan Nagar Nigam. The plastic collected during the drive will be used to build waste infrastructure in the city, showcasing that plastic need not be a waste, but a resource when segregated, collected, stored and processed responsibly. 🌱



Purna Swachhta Campaign - Poster Making Campaign

Kashmir's farmers suffer floods and drought as glaciers melt



Climate change is melting ice and snow in the Himalayan mountains too quickly, too early, leaving crops either drowned or parched.

When spring flooding in Kashmir's Himalayan mountains drowned the mustard crops on Ghulam Hassan's farm, he knew at least he would have his summer rice harvest to provide food for his family and fodder for his cattle. But when summer came, the glacier-fed stream he uses to irrigate his crops filled to only a fraction of

its usual level. His rice plants died of thirst and the corn and beans he tried to plant instead also perished.

"All this land you see around you was an upsetting sight in summer – farmland is of no worth if water is not available," Hassan said, as he tied together a bale of grass gathered from around his farm in the village of Goripora, in the south of Indian-administered Kashmir.

Now the farmer is left with the painful choice between feeding his family or his animals.

"See my fate?" he asked. "I either have to sell off my cow and two bulls (to buy rice) or buy the fodder for them for the winter."

Scientists have long warned that warming temperatures linked to climate change are eating into glaciers and ice sheets around the

↑ Scientists have long warned that warming temperatures linked to climate change are eating into glaciers and ice sheets around the world, driving rising sea levels.

Image: Kiril Rusev, CC BY-SA 3.0, via Flickr.

world, driving rising sea levels, floods and droughts.

In Kashmir, where nearly 70 per cent of the population directly or indirectly makes an income through farming, mountain communities rely on a pattern of seasonal snow-melt to irrigate their crops, making them especially vulnerable when a heating climate brings unexpected rainfall instead of snow and causes glaciers to melt too fast and too early. A study published in February in the journal *Nature Geoscience* said the world's glaciers now contain far less ice than previously thought, having

lost roughly 5.4 trillion tonnes of ice between 2000 and 2019.

Farhat Shaheen, an agricultural economist at Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST), said even marginal shifts in the pattern of snowmelt in the mountains will take a heavy toll as Kashmir's farmers scramble to adapt.

"This will affect all sectors of the economy in general and farming in particular," he said.

While there are no reliable figures on how much Kashmir's agricultural industry has lost to extreme climate events, Shaheen said he's spoken to farmers in the region's south who have lost up to 70 per cent of their crops in a single season due to dry spells and floods.

Disappearing glaciers

Shakil Ahmad Romshoo, a glacier expert who heads the University of Kashmir's department of earth sciences, has been monitoring seven glaciers in the regions of Jammu, Kashmir and Ladakh for the past six years. He said studies by his team show that this year the glaciers have shrunk by an average 5 metres (16 feet) compared to the average annual shrinkage of 1 metre per year since he started collecting data.

Behind the accelerated melting are the record heatwaves much of the world has experienced over the past year, Romshoo said.

But even in years without exceptional heat spikes, he said, the Himalayas are getting hotter earlier in the spring, melting glaciers faster and sooner than usual and causing sudden intense flooding, which is exacerbated by increased rainfall.

Then, by the summer, when farmers depend on melting snow and ice to fill the area's streams and irrigate their crops, there is not enough glacier melt available in the mountains, resulting in dry conditions. If temperatures keep rising and "extraordinary glacier

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All this land you see
around you was an
upsetting sight in
summer—farmland is
of no worth if water
is not available.

GHULAM HASSAN
farmer, Goripora

melting" becomes the norm, that could threaten food, energy and water security in the entire region, Romshoo warned in an interview.

Kashmir's agriculture director, Choudhary Mohammad Iqbal, said his department is trying to help farmers adapt by offering up-to-date information about climate swings and seeks to provide immediate help when droughts or floods wipe out crops. For example, he said, during a dry spell earlier this year, farmers in south Kashmir's Dooru area were given five wells to help irrigate 1,000 kanals (125 acres) of rice crops, while farmers in other areas were warned ahead of time to swap from growing rice to pulses, which require less water.

The regional government is also in the process of implementing a national crop insurance scheme that compensates farmers for losses caused by extreme weather events, Iqbal said.

Shaheen at SKUAST said the government should first focus on collecting better data on what kind of help Kashmir's farmers need, then use those numbers to implement adaption strategies, such as creating water harvesting infrastructure, building up flood resistance and strengthening early warning systems.

Drowned roads and landslides

In Chendargund, a tiny village in the foothills of the Pir Panjal mountain range, when villagers talk about the stream that engulfs their farms every two or three years, they say it has "broken our back".

Saleema Begam, 55, described how, during the latest floods, surging waters cut off her home from the nearest road.

When her husband fell ill, her son had to carry his father on his back up to the main road, where they used a relative's car to take him to the hospital. He made a full recovery.

A few months later, the stream has reduced to a trickle and is so full of silt that the family can no longer use it for drinking or cooking.

"We have no option but to use this dirty water only for washing dishes," Begam said as she sat on the veranda of her house.

While their home is far enough from the stream to escape the floodwaters, she said her family worries that the hotter, wetter springs will one day trigger a landslide that could obliterate their house and crops, leaving them with nothing.

Begam gestured to cracks in the walls that she says are caused by the earth shifting underneath the house. Every time there are heavy rains, her family worries their home could collapse on top of them.

"Whenever it rains for several hours at a time in the spring, we often stay awake during the night because of fear," she said. 📍

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(Source: <https://www.eco-business.com/news/kashmirs-farmers-suffer-floods-and-drought-as-glaciers-melt/>)

India's women farm workers suffer job losses from climate shocks

Extreme weather—from droughts and floods to heatwaves—are hurting Indian farmworkers, with women the hardest hit.

Disabled mother-of-two Devanabai Dhaigude has in recent months regularly gone to bed on an empty stomach, after heavy rains flooded the cotton farm where she worked in western India. She and several other women lost their shifts in July at the farm in Beed, in Maharashtra state - where they removed weeds for 150 rupees (\$1.80) a day - after above-average monsoon rains battered the state.

Without any work, the 35-year-old, who can use only one arm, has resorted to borrowing from a local moneylender in the village of Chopadyachiwadi, as she otherwise cannot afford to buy food for her children every day.

"Many days, I sleep without having dinner so that my two kids can have food. But how long can I provide food for them with my savings and borrowed money?" she asked, standing outside of her small house built from aluminium sheets.

"I wanted to fix the roof ... as rainwater comes in. But with no work I



While three-quarters of working women in rural India rely on agriculture to make a living, government data shows, very few are recognised as farmers themselves or own farmland. Image: UN Women Asia and the Pacific, CC BY-SA 3.0, via Flickr.

have to postpone," added Devanabai, who said she had been abandoned by her alcoholic husband earlier this year. She said she now has no choice but to wait for the harvest season in November in the hope of finding work on other farms.

"I will be at home until that time as no other kind of work is available," Devanabai said. "I feel hopeless and helpless."

She is far from alone. Women working in agriculture across India are being squeezed by a combination of worsening climate change impacts that threaten crops and economic struggles due to the growing cost-of-living crisis and post-pandemic slowdown.

While three-quarters of working women in rural India rely on agri-

culture to make a living, government data shows, very few are recognised as farmers themselves or own farmland, which means they struggle to secure credit or access government subsidies and aid programmes.

Women played a big role in a major protest by Indian farmers against agricultural reforms last year, calling for more recognition for their role, as well as land rights, credit and subsidies.

As extreme weather events such as drought, floods and heatwaves increase, the country's poorest farm families are under growing pressure, with female farm workers often suffering the most, according to academics and activists.

While men who lose work on farms can move to cities to find new

jobs to provide for their families, women are often restricted by household responsibilities, said Kedar Kulkarni, an assistant professor of economics at Azim Premji University in Bengaluru.

“Women are the most vulnerable to climate change, economic recession, or failure of government policies,” said Kulkarni, who has written on the impact of extreme weather on agriculture.

“Any adaptation policy to climate change should focus on women, who are at the forefront.”

Futures at stake

Farming accounts for nearly 15 per cent of India’s almost \$3 trillion economy and sustains half of its population. Yet as its rural agricultural workforce becomes more female-dominated due to male migration to urban areas, erratic weather often leaves women having to deal with the fallout alone.

India was the seventh most affected country by climate change in 2019, according to the latest Global Climate Risk Index, an annual ranking from research group Germanwatch.

Uneven monsoon rains and rising temperatures are fuelling fears about food production and farming livelihoods nationwide.

For example, Devanabai said she used to pick up four or five days of farm work a week before 2020, but that it had dropped to one or two days in recent years due to worsening droughts and heavier rainfall throughout the seasons, as well as hailstorms.

Saraswati Sevabhavi Sanstha, a local NGO that helps rural women, said that while farmers receive state compensation for their losses, the women like Devanabai who work for them have no such support.

“When female farm workers don’t get income, their kids drop out from school, they marry their daughters at young age, they suffer domestic

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When female farm workers don’t get income, their kids drop out from school, they marry their daughters at young age, they suffer domestic violence. Basically, the freedom of women gets snatched and patriarchy returns slowly.

NAMDEV CHOPADE
Supervisor, Saraswati Sevabhavi Sanstha

violence,” said its supervisor Namdev Chopade.

“Basically, the freedom of women gets snatched and patriarchy returns slowly,” she added.

Falling through the cracks

As India - Asia’s third-largest economy - wrestles with consistently high unemployment and inflation, advocates and analysts are calling for more support for women in agriculture.

Kulkarni, the academic, said the government needed to create more awareness about climate change risks among women and also provide financial support through access to banking and credit systems. The federal government has in recent years launched various programmes for women farmers - including the creation of self-help groups to improve access to finance - in a bid to improve agricultural productivity and create sustainable work for rural women.

Yet in Maharashtra, Sunita Mhaikar, the deputy commissioner of the state’s labour department, said agriculture workers fell into the cat-

egory of unorganised labourers and that there is currently “no specific act or scheme for female farm workers”.

“All schemes applicable to unorganised sector workers are applicable to them,” she said. But while informal workers are entitled to insurance and pensions as part of recent labour reforms - the Code on Social Security was approved in 2020 and came into force in July - there is little awareness of this among them, activists warn.

“There is no way that rural farm workers ... who do not know how to operate a bank account ... get to know about the scheme,” said Deepak Paradkar of labour rights charity Aajeevika Bureau, urging the Indian government to do more to promote the programme.

For now, women such as Devanabai and Meera Babar, a 37-year-old widow from Golegaon in Beed district, have nowhere to turn as increasingly extreme weather denies them farm work.

Babar said she can still afford to send her 13-year-old son to a public school - thanks to savings and money borrowed from lenders, relatives and neighbours - but not her 15-year-old daughter, who she plans to marry off as soon as possible.

“I am experiencing low availability of work at farms due to heavy rains or droughts,” said Babar, explaining how she used to harvest sugarcane and remove weeds for 200 rupees per day.

Now, “I don’t know how I am going to survive with zero income,” she said. 📍

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(Source: <https://www.eco-business.com/news/indias-women-farm-workers-suffer-job-losses-from-climate-shocks/>)

Sea-level rise 'may cross two metres by 2100'

Most islands in the Pacific are subsiding, presenting a challenge to infrastructure due to low adaptive capacity to climate change.

The Asian Development Bank (ADB) recommends raising to two metres, instead of the existing one metre, the imaginary waterline demarcation for projects in the Asia Pacific region to improve the resilience of structures against rising sea levels.

An ADB report presented during the bank's annual board meeting (26-30 September) warns that sea levels in the Asia-Pacific could exceed two metres by 2100 due to the double whammy of sinking land mainly due groundwater withdrawal as well as the warming of the oceans as a result of climate change. The report draws on hydrographic records and geological evidence dating back several hundred years.

"Based on observed data collected since 2000, most islands in the Pacific Island region are subsiding. Therefore, the effect of sea-level rise will be magnified where the land is falling," said the study.

Anthony Kiem, author of the study and professor of hydro-climatology at the University of Newcastle, Australia, says that sea-level rise in the Asia Pacific region is expected to worsen climate change impacts and presents a challenge to new and existing critical infrastructure.

Kiem was an external technical reviewer for a report on managing sea level rise infrastructure risk in



A boy sits in front of his damaged home after a typhoon hit the municipality of San Pablo in the province of Isabela, northern Philippines. Image: International Federation of Red Cross, CC BY-SA 3.0, via Flickr.

Pacific Island countries, published February by the Pacific Region Infrastructure Facility, which said sea levels were expected to keep rising for several centuries, posing an ongoing challenge for the Pacific Island Countries. While some paleo-climate records suggest that sea-level rise of five metres in a century has occurred before, the consensus view is that such extreme rise would happen over long periods (centuries to millennia) and is unlikely to occur before 2100, the study said.

According to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (AR6), the "projected global mean sea level rise of 1.7 to 6.8 metres by 2300 is possible". Given evidence about changes in sea levels projected by 2100 in Asia-Pacific, ADB has suggested that governments make suitable adjustments to the infrastructure that they plan to build. "For short- to medium-term projects (i.e., with a design life of 20–30 years), a scenario of 0.5 metre by 2050; for long-term, a scenario of two metres by 2100; and for

projects with an expected lifetime beyond 2100, scenarios of greater than two metres," the study said.

"The Sixth Assessment Report of the Intergovernmental Panel on Climate Change and other work that have emerged since AR5 [the previous assessment] demonstrate that not only is sea level rise greater than one metre (relative to the 1995–2014 baseline) conceivable at some point in the 21st century but it is also plausible that sea level rise could exceed two metres by 2100," the study said.

According to the Pacific Region Infrastructure Facility, the Pacific Island Countries have a low adaptive capacity to climate change, and a holistic approach to infrastructure management which considers the full range of plausible climate change and natural hazard outcomes is required. ■

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