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THE PLANET VISION

Carbon Markets: Frontier in the Fight Against Climate Change

Remember the iconic scene from 'Sholay' where Gabbar Singh questions' "Kitne aadmi the?"

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Carbon
Credit

From the Editor's Desk

Dear readers,

On its pathway to sustainable development, India has set ambitious climate goals, including reducing the emissions intensity of its GDP by 45% and increasing the share of non-fossil power capacity to 50% by 2030. In this grand endeavour, a national carbon market is expected to play a pivotal role, especially to decarbonise the Indian economy. The Indian Carbon Market (ICM) envisioned under the Carbon Credit Trading Scheme has been described as "a vehicle for mobilizing a significant portion of investments required by Indian economy to transition toward low-carbon pathways," by Shri Abhay Bakre, the Director General of the Bureau of Energy Efficiency.

In this edition, we will delve into the concept of 'carbon markets' and provide a holistic view of how carbon markets are evolving into one of the most crucial tools in the global climate toolkit. We will also explore technology's role in transforming carbon markets, in addition to the often-overlooked link between carbon markets and biodiversity, as well as the ethical dilemmas these systems raise in ensuring fairness and accountability.

As carbon markets evolve, they hold the promise of being a critical piece of our climate puzzle. Dive in not just to understand how carbon markets work, but why they matter so deeply in the fight against climate change. Whether you're just beginning to explore the concept of carbon markets or are already a seasoned environmental advocate, this edition hopes to offer insights that will inform, challenge, and inspire you.

Happy Learning.

Team VisionIAS

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Carbon Markets: Frontier in the Fight Against Climate Change

Balancing carbon emission with credits

Remember the iconic scene from 'Sholay' where Gabbar Singh questions' "Kitne aadmi the?". Today, a similar query echoes in boardrooms and government offices around the world "Kitne carbon credits hain?". As our planet warms and carbon emissions soar, this seemingly Bollywood-sequel scenario is becoming the new reality of our modern world. This shift in conversation reflects a growing global recognition of the role carbon markets can play in combating climate change. But what are carbon markets and how can help us in the fight against climate change?

Understanding Carbon Markets

At their core, carbon markets are trading systems where carbon credits are bought and sold. These carbon credits represent a reduction, avoidance, or removal of greenhouse gases (GHGs) from the atmosphere. One carbon credit typically equals one tonne of carbon dioxide or its equivalent in other greenhouse gases.

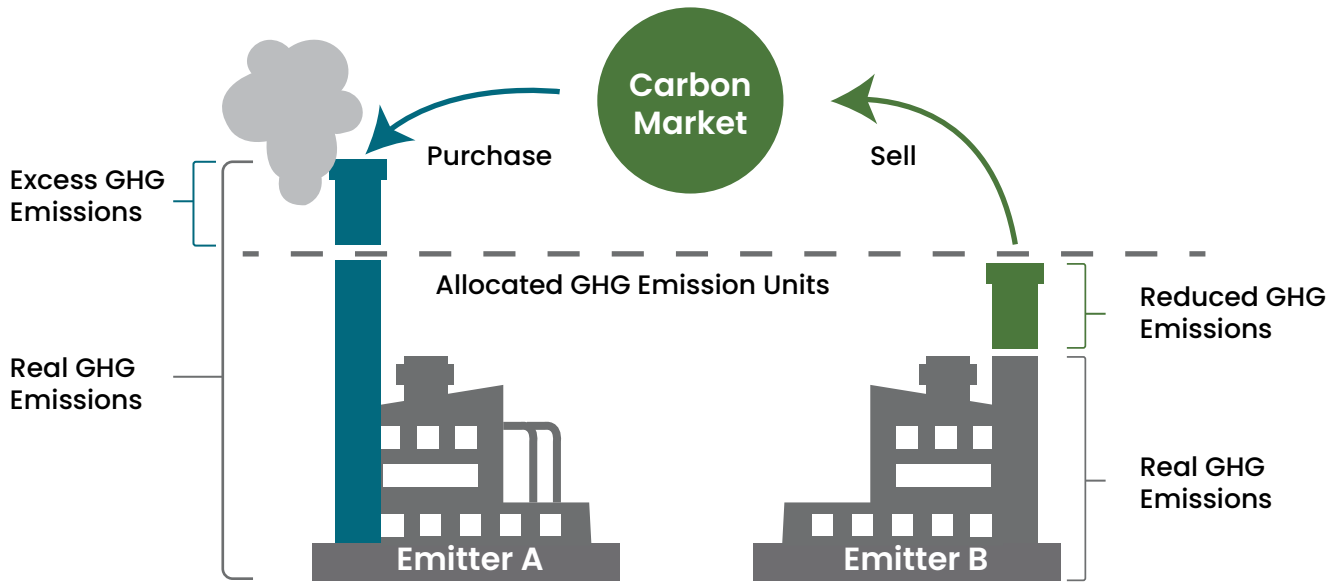
> Carbon markets are trading systems where carbon credits are bought and sold.

So, the basic idea behind carbon trading is simple: put a price on carbon emissions to create a financial incentive for reducing them. In this regard, companies or countries that exceed their emission limits can purchase credits from those who have reduced their emissions below their allocated amount. This system aims to reduce overall emissions cost-effectively by allowing reductions to occur where they are least expensive.

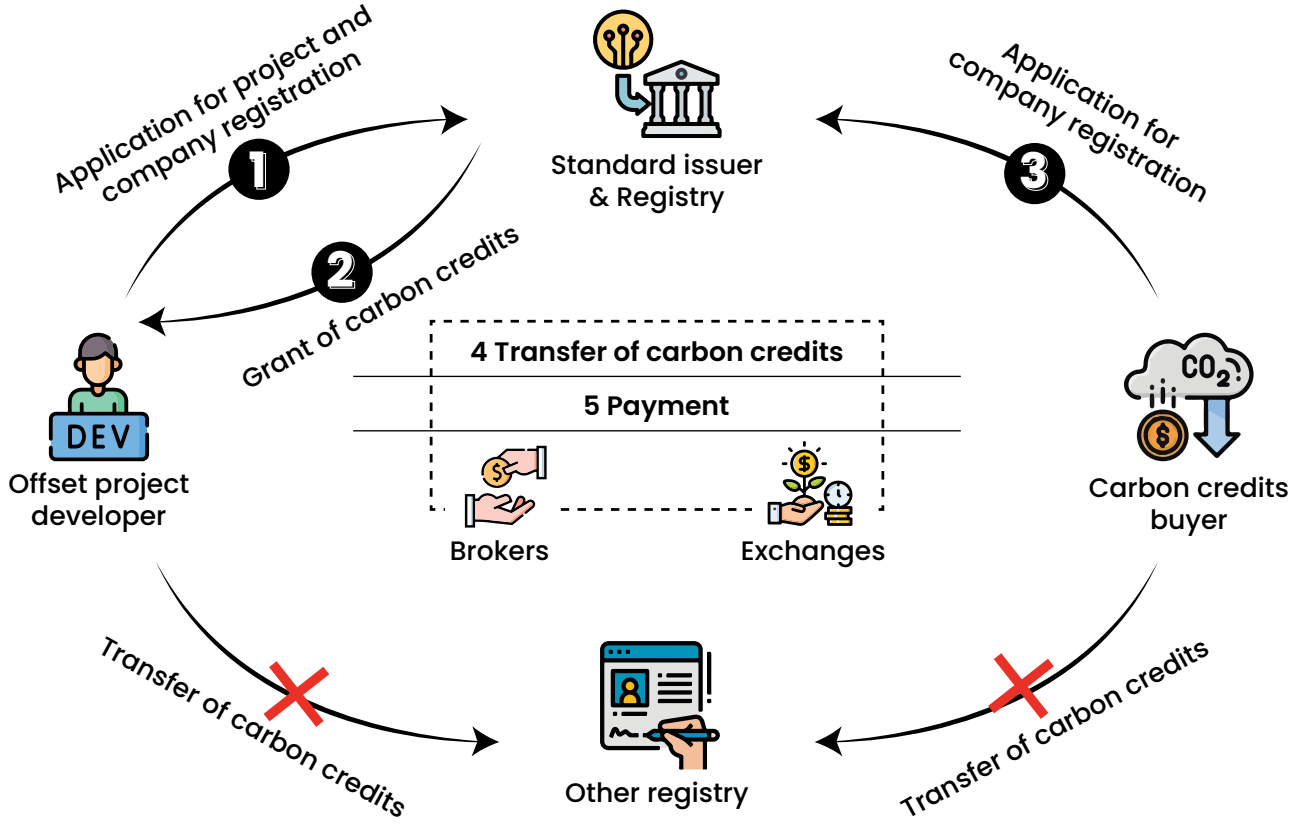
Mechanics of Carbon Trading

This system operates in two main forms: compliance markets and voluntary markets. In compliance markets, governments set emission limits for certain industries or countries. Companies in these sectors receive or buy allowances, which they can trade as needed. If a company reduces emissions below its allocated amount, it can sell excess allowances to others struggling to meet targets. This incentivises companies to innovate and reduce emissions while providing flexibility.

Voluntary markets, on the other hand, allow any individual or organization to participate in emission reduction efforts by choice. These markets



Compliance markets vs Voluntary markets



mainly deal in carbon offsets, which are reductions in emissions made to compensate for emissions produced elsewhere. Carbon offsets are measured in tonnes of carbon dioxide equivalent and can be bought by anyone seeking to offset their emissions or achieve climate targets.

> While compliance markets create a structured, regulated environment for carbon trading, voluntary markets offer more flexibility for individuals and organizations looking to offset their carbon footprint voluntarily.

Both systems aim to reduce overall emissions cost-effectively by allowing reductions to occur where they're least expensive. While compliance markets create a structured, regulated environment for carbon trading, voluntary markets offer more flexibility for individuals and organizations looking to offset their carbon footprint voluntarily. This dual approach helps address the complex challenge of reducing global carbon emissions through market-based mechanisms. So how did these mechanisms as we know them today emerge through history?

Evolution of Carbon Markets

The concept of carbon markets isn't new. In 1987, when the world was grappling with a hole in the ozone layer,

Signing of Article 6 at Paris Agreement 2015 (Source: IISD)

the Montreal Protocol introduced a novel concept - emissions trading for ozone-depleting substances. The Kyoto Protocol in 1997 established the first large-scale carbon market mechanisms, including International Emissions Trading, the Clean Development Mechanism (CDM), and Joint Implementation. This marked the beginning of a global experiment in using market forces to combat an environmental crisis.

Fast forward to 2015, when the Paris Agreement gave new impetus to carbon markets. Article 6 of the agreement provides a framework for countries to cooperate through carbon markets, potentially expanding their scope and impact. This has led to growing interest worldwide - a staggering 83% of Nationally Determined Contributions (NDCs) state the intent to use international market mechanisms to reduce greenhouse gas emissions.

Negotiations around Article 6 were at the centre of COP26 in Glasgow, where significant progress was made in finalizing the "Paris Rulebook." While some details remain to be ironed out, the groundwork has been laid for a more integrated global carbon market. So why all the fuss about carbon markets? Why are they so important in today's climate mitigation actions?

Importance of Carbon Markets

As UN Secretary-General Antonio Guterres urged, we need to "put the pedal to the metal" in addressing the climate crisis. Carbon markets could help us do just that, generating some of the vast sums needed to build resilience and transition to a low-carbon future. The Intergovernmental Panel on Climate Change (IPCC) in 2021 warns that global warming will exceed 2°C unless significant reductions in greenhouse gas emissions are made. Developing countries need up to $6 trillion by 2030 to finance half of their climate action goals. However, financial flows are falling short, three to six times below the required amount.

United Nations Secretary-General, António Guterres (Source: United Nations)

This is where carbon markets come in. They offer a way to drive and finance the transformation needed to address the climate crisis. By putting a price on carbon, carbon markets create economic incentives for reducing emissions. They can channel funds towards sustainable development projects and offer a flexible, potentially cost-effective way to cut global emissions. Thus, Carbon markets hold immense promise. However, the road to achieving significant emission reduction from carbon markets is not without its hurdles.

Promise and the Pitfalls

It is true that when carbon markets put a price on pollution, they create a financial incentive for businesses to clean up their act. They can channel funds towards sustainable development projects, particularly in developing countries. The EU Emissions Trading System (ETS), despite initial challenges, has undergone reforms leading to higher carbon prices and increased emissions reductions. In India, the Clean Development Mechanism led to over 1,500 registered projects by 2012, ranging from renewable energy initiatives to energy efficiency programs. These projects not only helped reduce emissions but also brought in valuable foreign investment and technology transfer.

Planet over profit, Beware of Greenwashing (Source: UNDP)

More recently, the global landscape of carbon markets has evolved significantly. As of 2023, over 60 carbon pricing initiatives are in place or scheduled worldwide, covering about 23% of global greenhouse gas emissions. The voluntary carbon market has also seen substantial growth, with the value of traded credits reaching $2 billion in 2021.

But like any grand experiment, carbon markets have hit their fair share of snags. For instance, the complex nature of emissions measurement has made it difficult to ensure that every carbon credit represents a real reduction in emissions. Another major concern is the risk of "double-counting" of emission reductions, where two parties selling carbon credits and the country buying them claim the same reduction. Thus, emission reductions obtained in such cases may create a false sense of achievement, while making no progress to meet the required climate goals.

Carbon offset projects, while well-intentioned, can also potentially violate human rights, particularly among Indigenous people and local communities. Many of the world's most significant carbon sinks are on lands that are inhabited by indigenous communities. In cases when communities' active participation and consent are not ensured, carbon offset projects may sideline Indigenous people, pushing them out of their lands and affecting their livelihood. There have been reports of Indigenous peoples being forcibly removed from their land because of carbon-offsetting in several countries like the Republic of the Congo and Democratic Republic of the Congo (DRC), the Brazil, Colombia and Peruvian Amazon, Kenya, Malaysia and Indonesia.

Additionally, there's the issue of "greenwashing," where companies might use carbon offsets to create a false impression of sustainability while continuing harmful practices. The integrity of carbon credits has come under increased scrutiny, with studies suggesting that a significant portion of credits from certain project types may not represent real emission reductions. This has led to calls for stricter standards and improved verification processes in both compliance and voluntary markets.

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The low price of carbon credits and difficulties in aligning multiple domestic markets are some other challenges. For carbon markets to be successful, these issues must be addressed head-on. Emission reductions and removals must be real, additional (meaning they wouldn't have happened without the carbon market incentive), and aligned with each country's Nationally Determined Contribution (NDC) under the Paris Agreement. Several countries are taking pioneering steps in carbon market engagement.

Countries Leading the Way

Costa Rica, a forest-rich nation, is strategically considering how to engage with carbon markets in the context of delivering its NDC. In Southeast Asia, Cambodia is leveraging its extensive experience with voluntary carbon markets in the forest sector to explore opportunities in energy and land use.

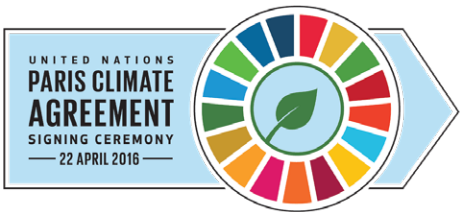
Project for farmer to adopt climate-smart agricultural techniques (Source: UNDP)

Ghana, Vanuatu and Switzerland are breaking new ground by implementing carbon market instruments developed through voluntary cooperation under Article 6.2 of the Paris Agreement. These country-level initiatives provide valuable lessons and models for others looking to engage with carbon markets.

India has notified the framework for its Carbon Credit Trading Scheme (CCTS) for the Indian Carbon Market (ICM) in June 2023. It is expected to create a functional national Emission Trading System (ETS) and help India achieve its NDC aimed at reducing the emissions intensity of its GDP by 45% by 2030 from 2005 levels. As these mechanisms take shape, India has been engaging in bilateral talks with countries like Japan for potential carbon credit trading under Article 6 of the Paris Agreement.

These active international initiatives demonstrate international communities' commitment to leveraging market mechanisms for climate action. On the international stage, carbon markets are gaining momentum. As of 2023, over 60 carbon pricing initiatives are in place or scheduled worldwide, covering about 23% of global greenhouse gas emissions. The voluntary carbon market has also seen substantial growth, with the value of traded credits reaching $2 billion in 2021. As we stand at this critical juncture in our planet's history, carbon markets represent a potential tool to help reconcile economic growth with environmental stewardship.

The Road Ahead



To begin with, the importance of transparency in the institutional and financial aspects of carbon markets cannot be overstated, and neither can the necessity for robust social and environmental protections. There is an urgent need to strengthen global and national governance to ensure carbon credits' integrity, raise carbon prices to drive significant emission reductions, enhance integration between different carbon markets, and ensure a just transition that supports vulnerable communities. The Paris Rulebook and discussions around Article 6 implementation are growing momentum, but the real test lies in designing robust, equitable, and effective carbon markets.

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Carbon markets offer climate solutions by reducing pollution, incentivizing emission reductions, and directing funds towards sustainable development, but require strong governance, integration, and trust for long-term success.

From Coal to Credits: India's Carbon Market Revolution

India's carbon market for greener future

In the land where ancient wisdom meets modern innovation, India is writing a new chapter in its environmental saga. Gone are the days when smokestacks symbolized progress; today, it's the invisible trade of carbon credits that is fuelling India's step towards a green economy. As the world's third-largest emitter of greenhouse gases, India with its ambitious Carbon Credit Trading Scheme (CCTS) is taking another step towards a sustainable future. India is scripting a blockbuster of its own with entry into the world of carbon trading that promises to be a transformation of the global economic and environmental landscape.

India's journey into carbon markets began with its participation in the Clean Development Mechanism (CDM) under the Kyoto Protocol. This early exposure laid the groundwork for domestic initiatives like the Perform, Achieve and Trade (PAT) scheme in 2012 and the Renewable Energy Certificate (REC) mechanism. These programs, while not explicit carbon markets, provided valuable experience in setting targets, measuring performance, and facilitating certificate trading. This history of experimentation and learning has been crucial in shaping India's current approach to carbon market development. They paved the way for a more comprehensive market mechanism facilitated by the Energy Conservation (Amendment) Act, of 2022.

India's Carbon Credit Trading Scheme (CCTS): A Game-Changer

In June 2023, India's Ministry of Power unveiled the Carbon Credit Trading Scheme (CCTS), marking the birth of a comprehensive Indian Carbon Market (ICM). This bold initiative aims to slash greenhouse gas emissions by introducing a system where carbon credit certificates can be traded like commodities. The CCTS represents a watershed moment in India's environmental policy, signalling a shift from traditional command-and-control approaches to market-based mechanisms.

> In June 2023, India's Ministry of Power unveiled the Carbon Credit Trading Scheme (CCTS), marking the birth of a comprehensive Indian Carbon Market (ICM).

What sets India's carbon market apart is its focus on emissions intensity rather than absolute emissions caps. This approach allows for continued economic growth while incentivizing cleaner practices. The market will initially concentrate on 13 sectors, including heavy emitters like steel and cement, as well as emerging areas such as green hydrogen and sustainable aviation fuel. For these areas, a benchmark and limits for GHG emissions intensity will be made. These will be in line with India's emissions path in line with climate goals. There is also a vision for a voluntary mechanism to be introduced concurrently, fostering GHG reductions in sectors beyond regulatory requirements.

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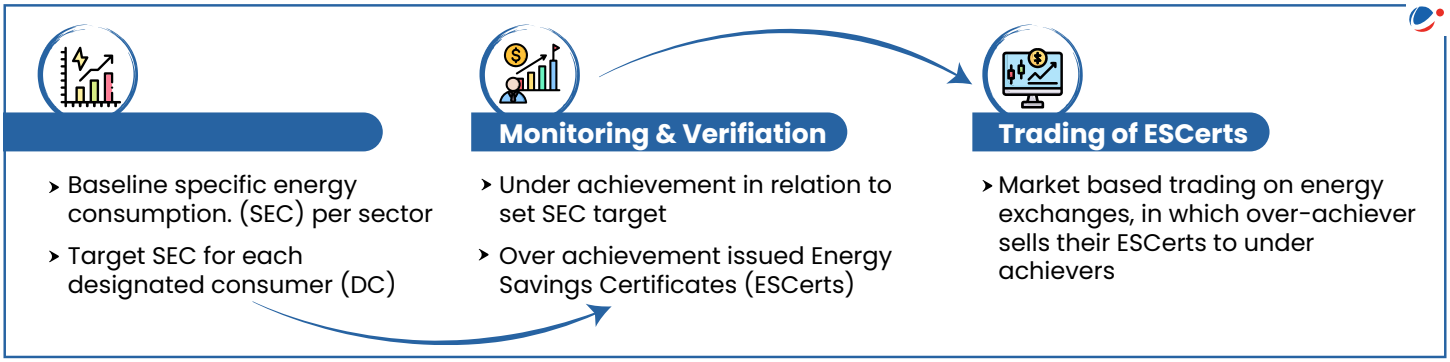
Robust Governance and Implementation

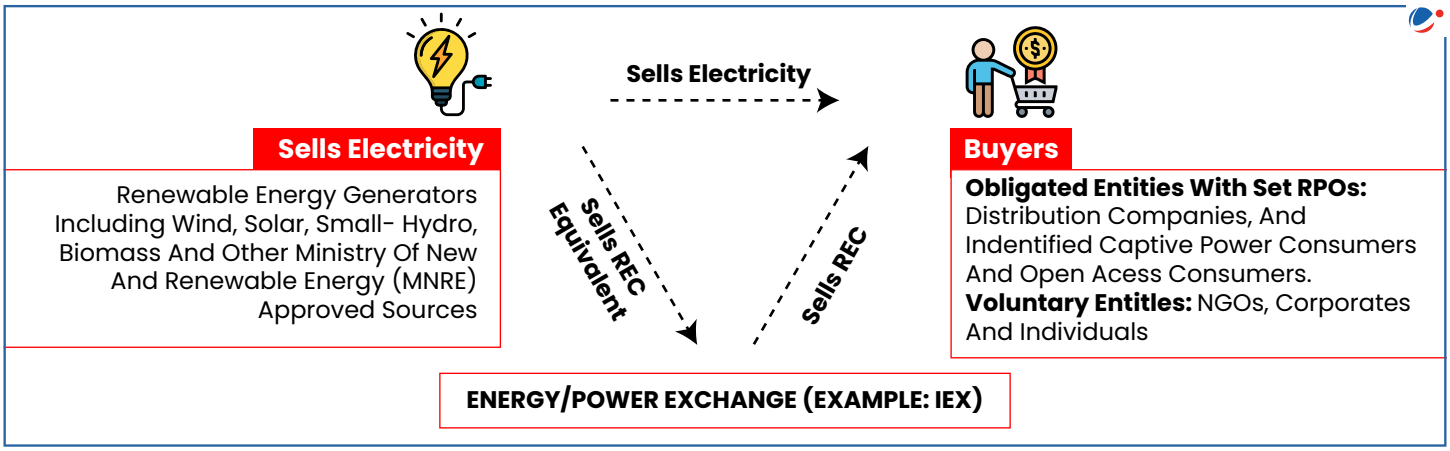


To manage this complex market, India has established a multi-tiered governance system. The National Steering Committee for Indian Carbon Market (NSCICM) provides high-level guidance, while the Bureau of Energy Efficiency (BEE) serves as the administrator. The Central Electricity Regulatory Commission (CERC) oversees trading aspects as the market regulator.

Moreover, India's carbon market builds upon valuable experience gained from existing schemes like the Perform, Achieve and Trade (PAT) scheme and the Renewable Energy Certificates (REC) system. These programs have provided crucial insights into setting and achieving targets, as well as managing certificate trading mechanisms.

Despite its potential, India's carbon market faces challenges for e.g. PAT and REC schemes, which form the basis of India's carbon trading experience, don't measure their certificates in carbon dioxide equivalent. This limits their effectiveness as carbon pricing mechanisms. It is difficult to link these schemes with the new Carbon Credit Trading Scheme (CCTS). Additionally, there's a risk of double counting emissions reductions, especially when projects are registered under multiple schemes.

To address these issues, India is implementing a multi-pronged approach. The government is developing a sophisticated national registry using blockchain technology to prevent double counting and ensure transparency. The Bureau of Energy Efficiency (BEE) is tasked with developing market stability mechanisms and accrediting verification agencies to enhance credibility. The CCTS introduces a compliance mechanism where the Ministry of Power will decide on sectors and obligated entities. These entities must achieve specific greenhouse gas emission intensity targets set by the Ministry of Environment, Forest and Climate Change. To support this,



the Central Electricity Regulatory Commission (CERC) will regulate trading activities, safeguarding the interests of both buyers and sellers.

Furthermore, the Energy Conservation (Amendment) Act, 2022 broadens the scope to include vehicles and vessels in energy consumption standards and introduces new norms for green buildings. These measures aim to create a more comprehensive and effective carbon market in India.

Global Integration and Net-Zero Aspirations

As India's carbon market matures, its integration with global markets under Article 6 of the Paris Agreement becomes crucial. India has also introduced innovative programs like the Green Credit Programme (GCP). At its core, the Scheme is designed to encourage voluntary participation from all sectors of society, promoting activities like large-scale tree planting to generate "green credits." Developing a blockchain based national registry could address concerns surrounding double accounting and enhance India's credibility in the global carbon market. The carbon market is expected to play a pivotal role in this journey, incentivizing businesses to innovate and adopt cleaner technologies.

As India's carbon market matures, its integration with global markets under Article 6 of the Paris Agreement becomes crucial.

Cold-water corals, vital yet vulnerable components of marine ecosystems, face significant threats from human activities and climate change. Preserving these ecosystems requires global collaboration, enhanced research, and effective management strategies, alongside raising awareness and involving various stakeholders.

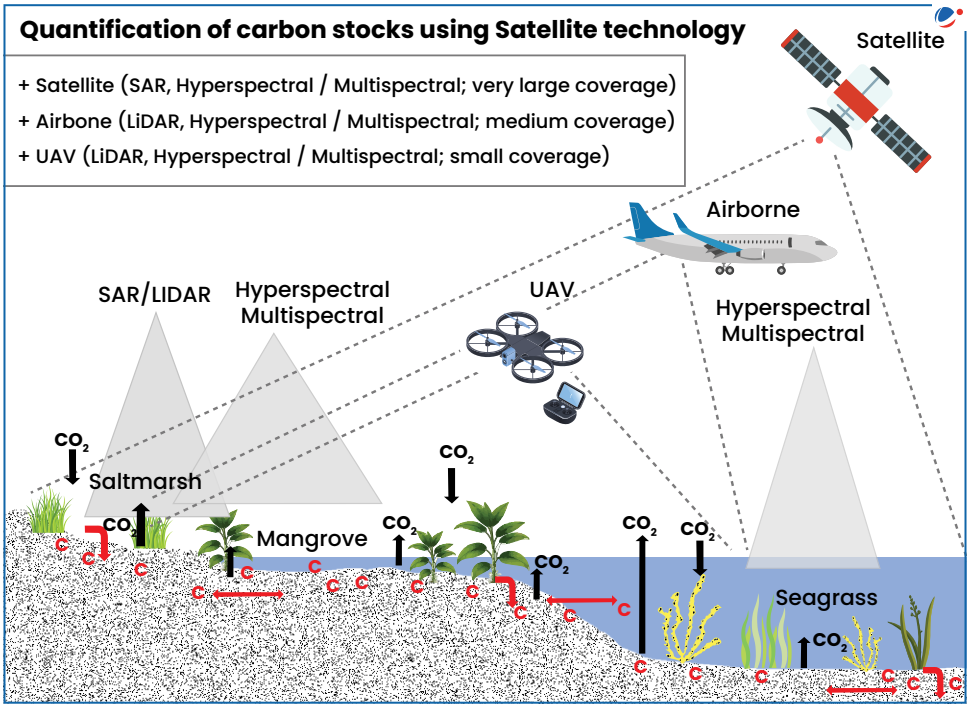
5 Ways How Technology is Reimagining Carbon Markets

Technology is expected to play a pivotal in Carbon Markets
Source: ERA

In the race to mitigate climate change, carbon markets have often faced challenges of inefficiency and complexity. But with the rise of cutting-edge technologies like blockchain, AI, and IoT, these markets are being reshaped, offering a smarter, faster, and more transparent way to combat carbon emissions. As technology revolutionizes how we trade and track carbon, the future of emission reductions has never looked more promising. Let's take a look at how carbon markets are now undergoing a technological transformation!

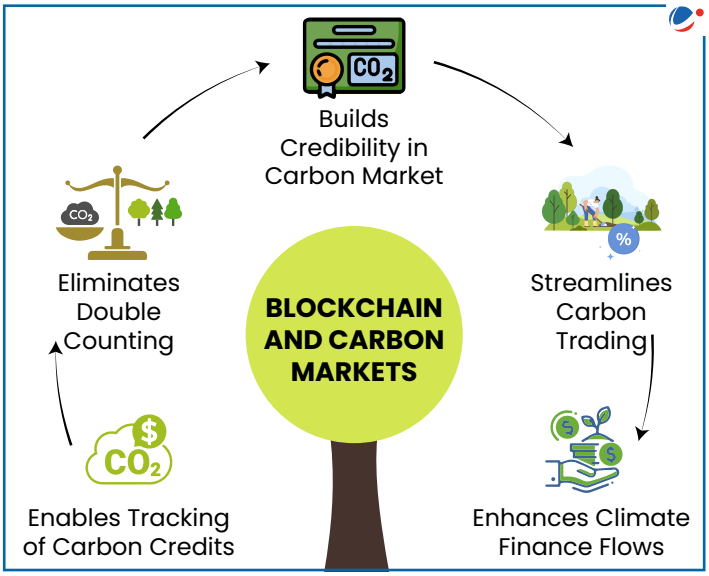
1. Improved Carbon Measurement and Monitoring

Advanced satellite technologies such as remote sensing techniques, LiDAR etc. have allowed for more accurate quantification of carbon stocks in forests, soils, and oceans. For example, satellite imagery can track deforestation rates and forest growth, providing crucial data for carbon offset projects. This improved accuracy increases the credibility and reliability of carbon credits in the market.



2. Enhance Transparency and Trust

Blockchain technology offers a promising solution to the challenges facing the carbon credit market. By providing transparency, and traceability, and preventing double counting, it enhances trust and credibility. Blockchain also streamlines transactions, reduces costs, and facilitates global collaboration. These benefits collectively contribute to a more efficient, effective, and sustainable carbon market.

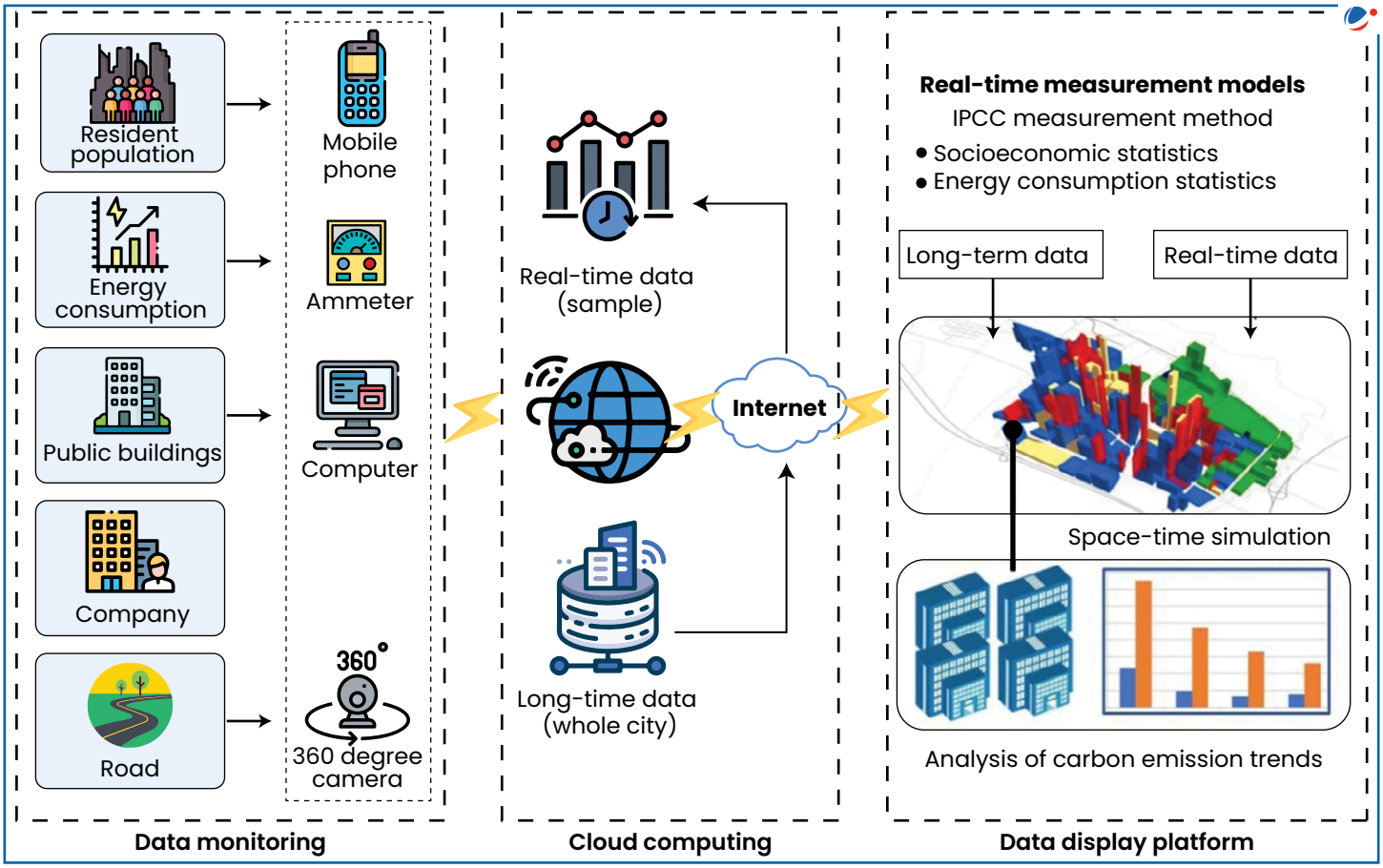


3. Enhanced Accessibility and Participation

Online marketplaces and trading platforms have made it easier for businesses and individuals to participate in carbon markets. They often include features like real-time pricing, automated matching of buyers and sellers, and integration with verification systems. This digitalization of carbon trading reduces transaction costs, increases market efficiency, and broadens participation in carbon markets.

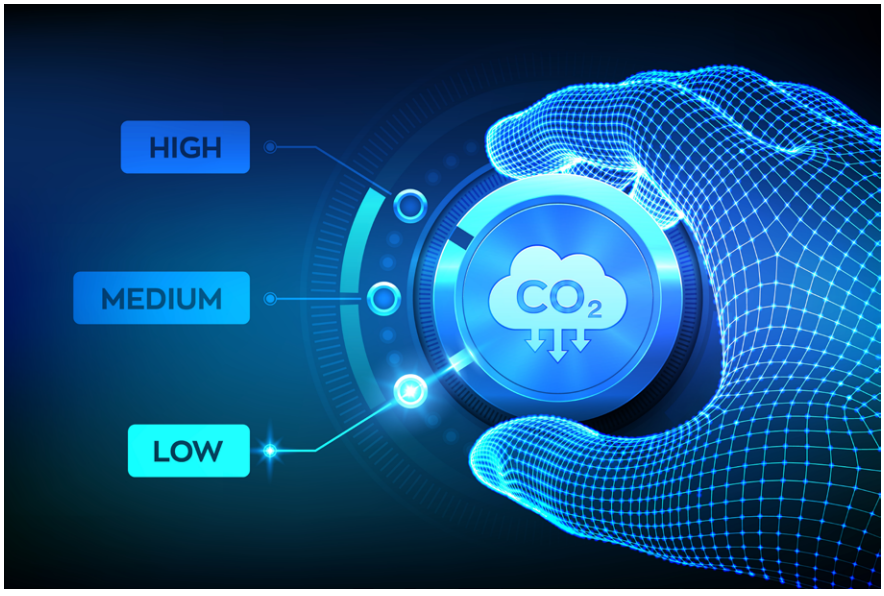
4. Improved Efficiency and Cost Reduction

Internet of Things (IoT) devices and sensors can continuously monitor and report emissions data in real-time which allows for more responsive and dynamic carbon management. In the context of carbon markets, this real-time data can lead to more accurate and timelier issuance of carbon credits, as well as better verification of emissions reduction claims.



5. Enhanced Risk Management

Technology empowers carbon market participants to manage risks effectively. Predictive analytics supported by Big Data enable informed decision-making by analyzing data to forecast market trends and potential disruptions. Additionally, it facilitates the development of hedging tools, such as derivatives, to mitigate the impact of carbon price volatility and protect investments.



Comic Strip

Firehawks: Arsonists of the animal kingdom

A study conducted in Australia found that birds like black kites, whistling kites, and brown falcons help spread naturally occurring wildfires, which are common in arid landscapes. For this very reason, they have been referred to by some as 'Arsonists'!

Ethics of Carbon Markets

Carbon markets are considered as a solution to resolve the issue of climate change. These markets should be used ethically to mitigate the impact of climate change.

Public support is advocating for large-scale, bold action to mitigate the harmful effects of climate change. Nations and large corporations are matching this enthusiasm with pledges to become Net Zero in the coming years.

But have we ever considered how a company can achieve net zero? It is nearly impossible to produce a single matchstick without negatively impacting the environment. Here, comes the role of carbon markets and carbon offsets, but first, some ethical issues need to be addressed.

What are the major Ethical Issues regarding Carbon Market?

One of the most pressing ethical concerns regarding carbon market is that by exchange of carbon credits, it frequently favours the wealthier, industrialised countries with the financial resources to invest in large-scale emission reduction projects. This can result in environmental exploitation, as poorer countries may be pressured to sell their carbon credits.

Consider this, suppose the government issues permits to individuals and requires them to control their emissions as a matter of public duty, while on the other hand, allows some people who could afford to pay to be exempt from the allocated permit. Do you think it would be fair?

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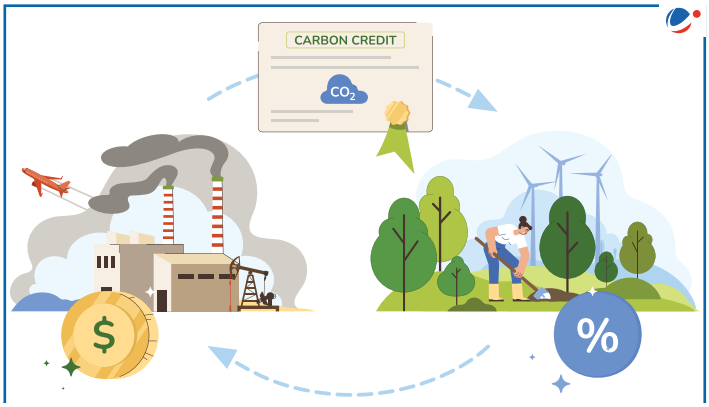
This brings us to another issue. There is a long-standing debate about whether human action controls the nature or nature controls human action. Carbon trading gives humans control over nature and assumes that humans' own property in the natural world. Ethically, humans should protect the environment, rather than commodifying it.



Working of Carbon Market

Another ethical concern is the potential for manipulation and corruption in the carbon credit market. Without strict regulation and oversight, there is a risk of fraudulent credit creation or sale. This undermines the system's integrity and may lead to a lack of trust in carbon credits as a tool for reducing emissions.

Finally, there is issue regarding the sustainability of the carbon market. It does not encourage companies to bring sustainable change to fight climate change. It allows companies to purchase the right to pollute. This will continue to hamper the future generations and their human right to clean and healthy environment.

How can these ethical concerns be addressed?

As the carbon credit market is increasing exponentially at global level, there is need to ensure that companies are offsetting for the correct reasons and guarantee that a tonne of carbon credit actually equates to a tonne of carbon removed from the atmosphere.

It can be achieved by bringing more transparency with better monitoring and regulation mechanisms, both at domestic as well as global levels. Companies should be more responsible in reporting the carbon credit and should avoid greenwashing.

"As the carbon credit market is increasing exponentially at global level, there is need to ensure that companies are offsetting for the correct reasons and guarantee that a tonne of carbon credit actually equates to a tonne of carbon removed from the atmosphere."

Ethical trading of carbon credits

Conclusion

Carbon credits should not be seen as a primary strategy for achieving emissions targets, but rather as a supplementary measure, used only after a company has implemented all other possible reduction technologies and strategies.

Individuals should not believe that their actions have no environmental consequences. Individual commitment is required because each action will bring us closer to achieving a carbon neutral world. It will assist us in navigating the difficult path of development and environmental conservation.

Carbon markets, proposed as a solution to climate change, face ethical concerns like favouring wealthy nations, commodifying nature, corruption, and discouraging sustainable practices. Addressing these requires increased transparency, better regulation, responsible reporting, and viewing carbon credits as supplementary measures.

Aligning Carbon Markets with Biodiversity: Pathways to a Sustainable Future

As we stand at the precipice of what experts call the "triple planetary crisis" - climate change, biodiversity loss, and pollution, linking carbon markets to biodiversity conservation, can create a powerful synergy. Climate change and biodiversity and inextricably linked together as temperatures rise and ecosystems shift focus species to adapt or perish. Conversely, as biodiversity dwindles, our planet's ability to absorb carbon and regulate its own climate diminishes. It's a vicious cycle, each crisis feeding into the other. But in crisis lies opportunity. By recognizing the interconnectedness of these challenges, we can craft holistic solutions. Let's explore how carbon markets could breathe life into vibrant ecosystems.

As we stand at the precipice of what experts call the "triple planetary crisis" - climate change, biodiversity loss, and pollution, linking carbon markets to biodiversity conservation, can create a powerful synergy.

Carbon Markets are here to Save Ecosystems!

Imagine a carbon credit that not only represents a ton of CO2 kept out of the atmosphere but also ensures the protection of a hectare of biodiverse forest. Suddenly, the abstract concept of carbon trading becomes tangible, rooted in the real world of flora and fauna. Efforts to preserve biodiversity hotspots are at the heart of new carbon credit methodologies like Biodiversity Offsets and Social Carbon.

Biodiversity offsets and credits have also been identified under the Global Biodiversity Framework (GBF) as innovative means of increasing funding for biodiversity protection. These are conservation actions that compensate for the negative

impacts that development may have on biodiversity. They are based on the idea of "no net loss" and try to make sure that development doesn't cause a net loss of biodiversity.

Also, Forest management projects, such as afforestation, reforestation, improved forest management, urban tree planting, and savanna management, are already featured in numerous carbon credit programs. This includes projects and initiatives like the California Compliance Offset Program, Verified Carbon Standard, American Carbon Registry, and Climate Action Reserve.

Moreover, Carbon market mechanisms such as REDD+ (Reducing Emissions from Deforestation and Forest Degradation) mechanism provide financial incentives for developing countries to reduce emissions from deforestation and forest degradation. By preserving forests, REDD+ projects protect the habitats of numerous plant and animal species. Carbon markets, when thoughtfully implemented, can be a force for good. But like any powerful tool, they can also cause harm if wielded carelessly.

Exploring the Fallouts

Carbon market projects often go through comprehensive assessment, during their planning and implementation phases. This is necessary to ensure that they deliver their promises on climate mitigation. It has been observed that many projects funded through carbon markets overlook one critical component 'biodiversity'. For instance, afforestation projects sometimes lead to replacement of diverse natural ecosystems with fast-growing monocultures - a biodiversity desert masquerading as a climate solution.

The use of biodiversity offsets has also raised concerns among environmentalists. The biggest question being - Can the loss of one unique ecosystem truly be offset by gains elsewhere? Burgeoning markets biodiversity offsets are also driving the phenomena of 'green grabs', where lands are being repurposed by large corporations for offsetting their emissions. This is distancing local communities from their lands and making it difficult to ensure fair distribution of benefits. As we navigate this complex landscape, we must remember that every action ripples across the entire system.

Synergizing Carbon Markets and Biodiversity: A Holistic Approach for Sustainable Conservation

To ensure that carbon markets and biodiversity conservation can be allies, we need to make sure that robust, standardized metrics for measuring biodiversity are as common as carbon accounting. Each carbon project needs to monitor and report on species richness, habitat complexity, and ecosystem functionality alongside carbon capture.

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A tiered pricing system can also be developed where projects that demonstrate biodiversity gains command premium prices. This will incentivize developers to prioritize ecosystem health alongside carbon capture. It's a world where the invisible hand of the market gently guides us towards holistic environmental stewardship.

Moreover, Indigenous communities, with their deep understanding of local ecologies, need to be at the forefront of design and implementation of carbon offsetting projects. Monitoring protocols can be shaped to track biodiversity impacts over decades, ensuring that the forests we plant today become the thriving ecosystems of tomorrow. And as these ecosystems evolve and respond to our changing climate, so too would our management strategies, adapting and shifting like the very life they seek to protect.

By integrating carbon markets with biodiversity conservation efforts, there is an opportunity to achieve significant environmental, social, and economic benefits. The future of effective climate policy lies in recognizing these synergies and promoting projects that maximize co-benefits for both carbon sequestration and biodiversity protection.

Briefings

India

Wayanad Landslides: The Intersection of Nature and Human Activity

Wayanad Landslide
(Source: PIB)

On July 30, 2024, devastating landslides struck Chooralmala and Mundakkai villages in Wayanad, Kerala, claiming over 230 lives and leaving 130 missing. Triggered by intense rainfall—572 mm in just 48 hours—the landslides originated from a valley above Punchirimattom, with debris flowing 8 kilometres along the Iruvaniphuza river, destroying homes and altering the landscape.

Climate change played a significant role, with studies showing that monsoon downpours in Wayanad have intensified by 10% due to global warming. Additionally, human activities like deforestation and unplanned construction have made the region more prone to landslides, destabilizing the terrain in this biodiversity-rich area of the Western Ghats. The disaster underscores Kerala's vulnerability, as the state accounts for nearly 60% of all significant landslides in India between 2015 and 2022. The Wayanad tragedy highlights the urgent need for sustainable land management and better climate resilience to protect both human lives and the environment.

Periyar Tiger Reserve Installs Wind Turbine for Power Generation

The Periyar Tiger Reserve (PTR) in Thekkady has installed a wind turbine for real-time monitoring cameras and Wi-Fi connectivity within the forest. This is the first time a wind turbine has been deployed in an Indian tiger reserve, marking a significant step in sustainable energy use for wildlife conservation. The 1-kilowatt wind turbine at Mangaladevi, an area known for strong winds, charges batteries to power cameras and improve internet connectivity in remote forest stations.

Wind Turbines for power generation

The project, costing ₹2 lakh, has enabled forest staff to stay connected through Wi-Fi, addressing long-standing issues of isolation. Plans are underway to expand the installation of wind turbines and Wi-Fi facilities across other sections of PTR.

₹56 Crore Approved for Next Phase of Great Indian Bustard Conservation

Great Indian Bustard
(Source: WWF)

The Ministry of Environment, Forest and Climate Change (MoEFCC) has approved ₹56 crore for the next phase of the conservation of the critically endangered Great Indian Bustard (GIB) and Lesser Florican. The initiative, running since

2016, aims for the long-term recovery of these species, which are currently facing severe population declines due to electrocution from power lines, hunting, habitat loss, and predation.

The plan includes habitat development, in-situ conservation, completion of the conservation breeding centre in Rajasthan, and the release of captive-bred birds. The Wildlife Institute of India (WII) will lead this project, which also involves developing artificial insemination techniques to improve genetic diversity and fertility rates. The Supreme Court, which is overseeing the conservation efforts, had previously ordered all power lines in GIB habitats to be buried to prevent bird deaths, but this order was later recalled due to practical challenges.

Clean Air Funding Prioritizes Dust Management, Overlooks Combustion Sources: CSE Report

National Clear Air Programme Report
(Source: CSE)

A recent assessment by the Centre for Science and Environment (CSE) reveals that the National Clean Air Programme (NCAP), launched in 2019 to reduce particulate pollution in 131 Indian cities, has disproportionately focused on dust management, with limited attention to key pollution sources like combustion from vehicles and industries. The report highlights that 64% of the ₹10,566 crore allocated for clean air initiatives has been spent on road dust mitigation, such as road paving and water sprinkling, while only 14.51% addressed biomass burning, 12.63% targeted vehicular pollution, and a mere 0.61% was dedicated to industrial pollution control.

CSE criticizes the NCAP for emphasizing PM10 (coarse particulate matter) reduction over PM2.5, the finer particles more harmful to health and primarily emitted by combustion sources. The report argues that this focus on dust has led to suboptimal strategies for controlling toxic emissions, leaving crucial sectors like transport and industry underfunded and neglected. The CSE calls for a shift towards PM2.5 as the benchmark for air quality improvement and better regional coordination to tackle pollution effectively.

Surge in Sarus Crane Population Across Uttar Pradesh

Sarus Crane
(Source: SARUS Nature Society)

The latest summer census conducted on June 20-21, 2024, reveals a notable increase in the Sarus crane population in Uttar Pradesh, with a total of 19,918 cranes recorded, up by 396 from the previous year. The Etawah Forest Division recorded the highest count with 3,289 cranes, marking a rise of 500, while the Mau Forest Division spotted six Sarus cranes for the first time in a decade. The census, involving 10,000 citizens, covered 10 forest divisions, with significant counts in Mainpuri (2,945) and Shahjahanpur (1,212).

The Sarus crane holds significant cultural and ecological importance in India. As the tallest flying bird in the world and the official bird of Uttar Pradesh, it is an indicator of wetland health. The continued increase in their population reflects successful conservation efforts in the region.

New Horned Frog Species Discovered in Arunachal Pradesh

Scientists have identified a new species of horned frog, 'Xenophrys apatani', in Arunachal Pradesh, India. Initially misidentified as the Maoson horned frog (Xenophrys maosonensis), which is found in Vietnam and China, the frog was recognized as a distinct species due to

Xenophrys apatani
(Source: ZSI)

geographic and genetic differences. Researchers from the Zoological Survey of India (ZSI) in Shillong and Pune made the discovery, noting that the frog exhibits a 4.4% to 5.5% genetic divergence from its Vietnamese counterpart.

The species, named after the indigenous Apatani tribe, was first reported in 2019 in Tale Wildlife Sanctuary. This discovery adds to India's amphibian diversity and highlights the importance of genetic analysis in identifying similar species. The frog's habitat within a protected area suggests it is currently safe, though further studies are needed to understand its ecological requirements.

Global

11 New Biosphere Reserves Added to UNESCO's Global Network

Kempen-Broek Transboundary Biosphere Reserve
(Source: UNESCO)

UNESCO has added eleven new biosphere reserves to its World Network of Biosphere Reserves (WNBR) under the Man and Biosphere (MAB) Programme, bringing the total to 759 sites across 136 countries. The MAB Programme, launched in 1971, aims to enhance the relationship between people and their environments by integrating natural and social sciences.

Notably, two transboundary reserves, Kempen-Broek (Belgium and Netherlands) and Julian Alps (Italy and Slovenia), were included for the first time. These additions emphasize the global importance of conserving biodiversity and cultural heritage, especially in the face of a growing biodiversity crisis and climate change. These new reserves serve crucial scientific roles, providing valuable data for environmental management and supporting global development goals like the Kunming-Montreal Global Biodiversity Framework. They contribute significantly to safeguarding biodiversity, fostering sustainable development, and combating climate change.

Climate Crisis Lengthens Earth's Days

Climate change slows down Earth's rotation

The study, published in the "Proceedings of the National Academy of Sciences of the USA", explains that as Greenland and Antarctic ice melts due to global heating, water redistributes from high latitudes to equatorial regions. This shift makes the Earth more oblate, slowing its rotation and lengthening the day further. Historically, the Earth's rotation has been gradually slowing due to lunar gravitational effects, but human-induced climate change has accelerated this process.

The rate of change in day length has increased from 0.3 to 1.0 milliseconds per century between 1900 and 2000, and since 2000, it has accelerated to 1.3 milliseconds per century. If greenhouse gas emissions are not curtailed, this rate could increase to 2.6 milliseconds per century by 2100, surpassing lunar tides as the primary factor influencing day length. While the change is only a matter of milliseconds, it could have significant implications for technologies that rely on precise timekeeping, such as internet traffic, financial transactions, and GPS navigation.

FAO's State of the World's Forests 2024 Report

World's Forest 2024 Report
(Source: FAO)

The Food and Agriculture Organization (FAO) released the State of the World's Forests 2024 report, themed "Accelerating Forest Solutions through Innovation." The report highlights a significant decline in global deforestation rates, dropping from 15.8 million hectares annually in 1990–2000 to 10.2 million hectares in 2015–2020. India ranked third for its average annual net gain in forest area between 2010 and 2020.

The report emphasizes the need for innovation in forest management to combat climate change-related stressors, such as wildfires and pests, and to support a zero-carbon bioeconomy. Five key types of innovation are identified: technological, social, policy, institutional, and financial. The report also recommends fostering a culture of innovation, enhancing skills, and ensuring access to financial resources to scale up innovative forest solutions essential for sustainable development.

Aquatic Deoxygenation as a New Planetary Boundary

Aquatic Deoxygenation (AD)
(Source: UNESCO)

Experts of the IOC Global Ocean Oxygen Network (GO2NE) are advocating for the recognition of Aquatic Deoxygenation as a new planetary boundary due to its significant impact on Earth's systems. Planetary boundaries define limits within which Earth systems can self-regulate. Aquatic Deoxygenation (AD) refers to the overall decline in oxygen levels in oceanic and coastal waters, occurring when oxygen consumption outpaces replenishment. With six of the nine recognized boundaries already crossed, the experts argue that freshwater and marine oxygen concentrations should be recognized as a new boundary.

Global warming, driven by greenhouse gas emissions, reduces oxygen solubility in water and impedes oxygen mixing into deeper ocean layers. Eutrophication, caused by nutrient runoff from agriculture, leads to algal blooms that further deplete oxygen levels. Aquatic Deoxygenation (AD) leads to the formation of dead zones and ocean hypoxia, compressing habitats for fisheries, reducing biomass, and causing species loss. It also disrupts marine food webs, increases predation risks, and contributes to ocean acidification.

2024 Blue Planet Prize Winner Announced

Professor Robert Costanza

USA & Australia
Ecological Economics at the Institute for Global Prosperity, University College London

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

Secretariat: Bonn (Germany)

2024 Blue Planet Prize Laureates (Source: Blue Planet Prize)

The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) has been honoured with the 2024 Blue Planet Prize, awarded by Japan's Asahi Glass Foundation. This prestigious award recognizes individuals and organizations for outstanding contributions to solving global environmental challenges through scientific research and its application. IPBES, a key global authority on biodiversity and ecosystem services, received this recognition for its influential role in shaping science-informed policies and actions across various sectors, scales, and knowledge systems.

The award includes a $500,000 prize, and the ceremony will be held on October 23 in Tokyo, Japan, with some additional events in Kyoto. IPBES shares this honour with Robert Costanza of University College London, known for his pioneering work in ecological economics. The Asahi Foundation highlighted the critical impact of IPBES reports in guiding international efforts under frameworks like the Sustainable Development Goals (SDGs) and the Convention on Biological Diversity (CBD), as well as in shaping corporate sustainability strategies.

Air Pollution's Impact on Pollinators

Pollination of flowers by bees

A study published in Nature Communications reveals that air pollution disproportionately harms pollinators like bees and butterflies while crop-destroying pests remain largely unaffected. Researchers analysed data from 120 scientific papers covering 40 insect species across 19 countries. They found that air pollutants, such as ozone, nitrogen oxides, sulphur dioxide, and particulate matter, cause a 39% decline in pollinators' foraging efficiency.

Beneficial insects, including bees and wasps, are particularly vulnerable due to their reliance on scent-based communication, which is disrupted by polluted air. Ozone is identified as the most harmful pollutant, reducing the ability of these insects to thrive by approximately 34%. Notably, these negative effects occur even at low pollution levels.

From Orca to Mammoth: Iceland's Next Giant Step in Carbon Capture Technology

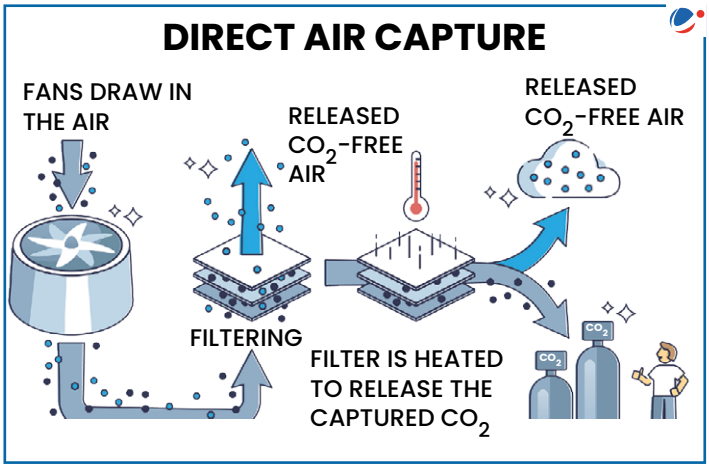
Iceland's carbon capture tech
Source: Climeworks

Iceland, a North Atlantic country renowned for its fiery volcanoes, icy glaciers, and geothermal springs, is making significant progress in carbon dioxide removal (CDR) technologies. Recently, the world's largest Direct Air Carbon Capture and Storage (DACCS) facility Mammoth, built by Swiss company Clime Works, began operating in Iceland. It is about ten times bigger than its predecessor plant, Orca. The facility marks a crucial step toward mitigating climate change through innovative carbon removal strategies. Let us understand the science behind this novel technology!

Direct Air Capture: A Crucial Tool for Removing Carbon and Reversing Climate Change

Carbon dioxide removal (CDR) are technologies and methods that pluck out excess carbon from the atmosphere and store it safely in geological, terrestrial, or ocean reservoirs or within products. It's like a cleanup operation helping to restore Earth's climatic health to a more balanced state. Direct Air Capture and Storage (DACCS) is one of the most promising CDR technologies. Unlike traditional carbon capture, which targets emissions at their source like power plants, DACCS pulls CO_2 directly from the atmosphere. This makes it especially useful for addressing hard-to-reduce emissions from transportation, heavy industries like steel and concrete, and wildfires. DACCS also helps reverse past emissions, playing a crucial role in efforts to keep global temperature rise well below 2°C, as outlined in the 2015 Paris Agreement.

> Unlike traditional carbon capture, which targets emissions at their source like power plants, DAC pulls CO_2 directly from the atmosphere.



Direct Air Capture Technology (DACCS) first draws air from the atmosphere into the system using large fans or blowers. Then this air is passed through a solid filter or a series of chemical absorbers. These materials are specifically designed to bind with CO_2 molecules. The captured CO_2 is then stored by compressing into a liquid form and injected deep underground into geological formations for long-term storage (known as carbon sequestration). Or in some cases, it can also be used in various industrial processes, such as making synthetic fuels, or concrete production.

Compared to other CDR methods, DACCS requires less land and water, can be deployed without geographical restrictions, and is ideally suited near storage sites or renewable energy sources. However, Capturing CO_2 directly from the atmosphere is currently one of the most expensive forms of carbon capture. The concentration of CO_2 in the air is much lower than in emissions from sources like power stations or cement plants, which increases the energy requirements and costs of DACCS. Moreover, the performance and overall impact of DACCS technologies have not been sufficiently explored, slowing down their large-scale deployment.

Out of Thin Air: DACCS as Our Climate Lifeline

The need for DACCS technologies has become urgent as rising atmospheric CO_2 concentrations drive irreversible changes to the Earth's climate. The impacts of global warming are already evident in the form of rising sea levels, melting glaciers, droughts, devastating floods, wildfires, and increased tropical cyclone activity. While existing carbon abatement strategies such as renewable energy, energy efficiency, electrification of processes, and carbon capture and storage are crucial, they are not sufficient to meet the Paris Agreement goals.

DACCS technologies can complement these measures by addressing emissions that are difficult to eliminate and reversing the buildup of historical CO_2 levels. According to Intergovernmental Panel on Climate Change (IPCC), up to 10 billion tonnes of carbon dioxide removal per year may be required by 2050 to keep global warming within safe limits. To unlock full potential of Direct Air Capture, we must swiftly launch large-scale demonstration projects to clarify deployment strategies and cost uncertainties.

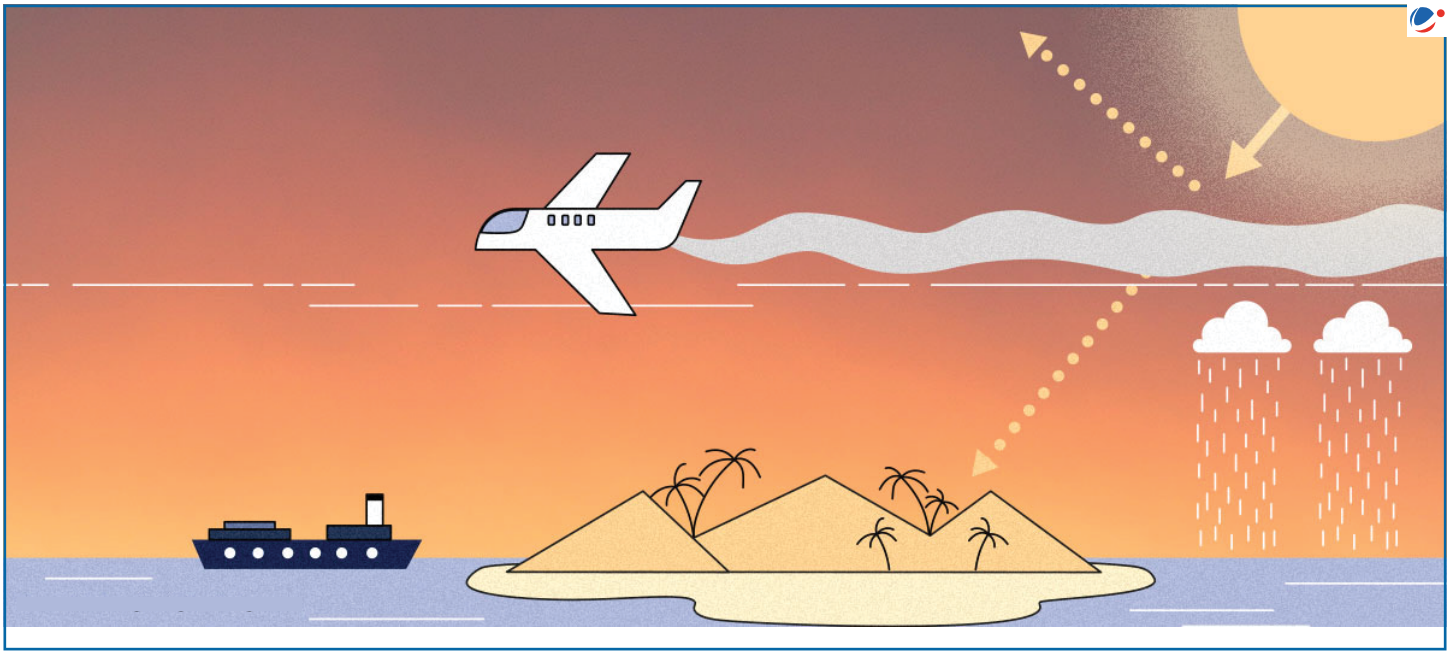
> According to the Intergovernmental Panel on Climate Change (IPCC), up to 10 billion tonnes of carbon dioxide removal per year may be required by 2050 to keep global warming within safe limits.

Accelerating Direct Air Capture: Charting the Path to Scalable Carbon Removal

Driving down costs of Direct Air Capture technologies hinges on innovation, from developing advanced solvents and sorbents to create a diverse, reliable supply chain for these materials. Increased investment in research and development, both nationally and globally, is essential to fast-track the commercialization of DACCS.

Governments need to establish robust mechanisms to monitor, report, and certify CO_2 removal by DACCS facilities, aligning these efforts with frameworks that incentivize all carbon dioxide removal strategies according to their climate impact. Immediate action should be backed by targeted government support, such as grants, tax incentives, and public procurement of CO_2 removal. In long run, strong CO_2 pricing mechanisms and transparent accounting frameworks that value negative emissions will be vital to driving progress.

The Bright and Dark Sides of Solar Geo-Engineering: What You Need to Know



Geo-engineering is large-scale manipulation of Earth's climate systems to counteract anthropogenic global warming. Source: Solar Geoengeering non use Agreement

Imagine a colossal mirror floating in space or a mist of sulfuric acid gently released into the atmosphere. It might sound like the plot of a sci-fi thriller, but these are real ideas from the world of solar geo-engineering. This field explores a range of futuristic technologies that could potentially curb rising temperatures by reflecting extra sunlight away from our planet, offering a dramatic way to tackle climate change.

All types of solar geo-engineering, also called solar radiation management (SRM), aim to reduce the amount of sunlight reaching the Earth to help cool it down. However, the methods they use can be quite different.

Researchers are mainly looking at two methods to reflect sunlight away from Earth- stratospheric aerosol injection (SAI) and marine cloud brightening (MCB). Let's get into details on how some of these mechanisms would work!

Understanding the science

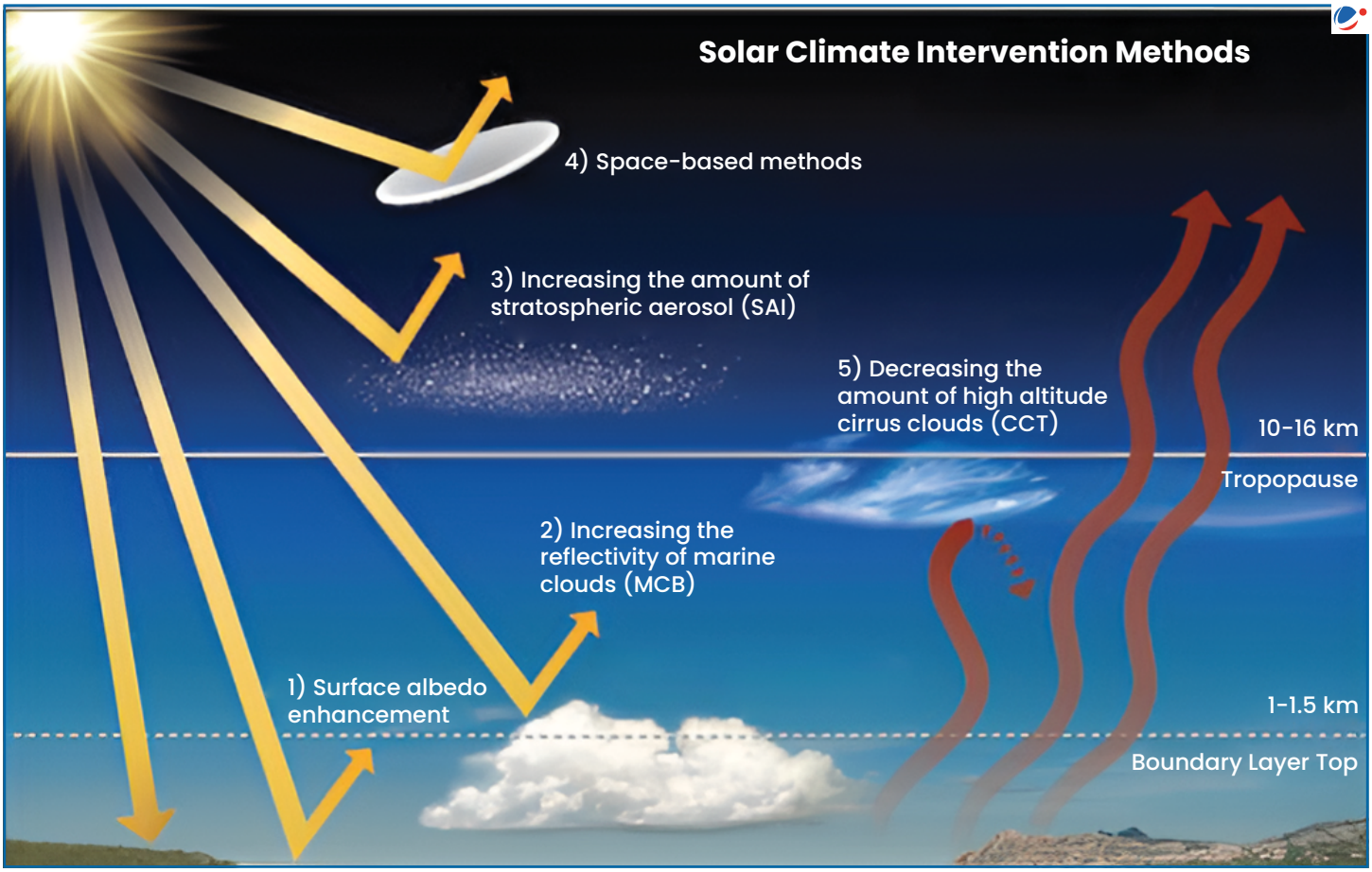
In simple terms, Stratospheric Aerosol Injection (SAI) works like a large volcanic eruption. But what does volcanic eruptions have anything to do with climate change? Interestingly, large volcanic eruptions can alter global temperatures. When Mount Pinatubo in the Philippines erupted in 1991, its effects were felt worldwide. It caused global temperatures to drop by as much as 0.5 degrees. So does this work?

When a volcano erupts, it releases tiny particles into the upper atmosphere the stratosphere. These particles reflect sunlight away from the Earth and cause cooling for as long as they stay in the atmosphere, which can be up to a few years. SAI would try to do the same thing by putting similar particles, like sulfate, into the stratosphere to cool the planet.

Similarly, Marine Cloud Brightening (MCB) works by spraying sea salt into low-lying clouds over the ocean to make them brighter, reflecting more sunlight, and cooling certain areas. Other ideas include albedo enhancement, which involves using cool roofs or reflectors to make the Earth's surface more reflective, sending more sunlight back into space. But can we use these mechanisms as one-stop solutions for solving climate change? The answer is not that simple!

Climate Fix or False Hope?

For several years, researchers have been studying the risks and benefits of solar geo-engineering using computer models and observations. This research has helped us understand its possible effects. One risk is the "moral hazard" — the concern that people might see this technology as an excuse to reduce efforts to cut greenhouse gas emissions and stop moving towards a low-carbon future. While solar geo-engineering could



Types of Solar Radiation Management
Source: NOAA

help limit some harmful effects of climate change, it does not solve the main cause: the increasing release of heat-trapping gases from burning fossil fuels. It also wouldn't address problems like ocean acidification.

We know a little from past volcanic eruptions about how solar geo-engineering might affect weather patterns in different regions, but this is not enough to understand its long-term effects. We also know very little about how it might impact global politics and efforts to reduce emissions. Since adding particles to the atmosphere would have both regional and global effects, testing this outdoors is complicated. As these methods and their impacts extend beyond national boundaries, it makes the line between small- and large-scale research a murky but critical one, necessitating different approaches and responses.

Future or Fantasy? Charting the Path Forward

One big question about solar geo-engineering is whether society will ever use it and if so, how? Right now, there is no clear decision from leaders on whether these technologies should be used to help fight global warming. Because these ideas come with possible risks to both people and the environment, any experiments with them should be carefully looked at and discussed by the public.

That's why, before testing any of these methods outdoors, scientists and communities need to make sure that governments create proper rules, make the research transparent, and allow the public to have a say in whether these tests should happen and under what conditions.

Snapshot

MYSTIQUE OF BLACK LEOPARDS

Recent frequent sightings of black panthers in Karnataka have sparked both curiosity and concern among wildlife enthusiasts and conservationists.

Let's know more about these mysterious felines which are the inspiration for the 2018 superhit Movie 'Black Panther'.

Science Behind the Darkness

Contrary to popular belief, Black Panther is not a separate species, but rather a big cat like, a leopard or Jaguar, with a genetic condition called melanism.

Melanism is a genetic mutation that causes the overproduction of melanin, a dark pigment found in their skin, hair, fur, and feathers.

It is believed to result from unusual temperature fluctuations during gestation and is susceptible to both humans and wildlife.

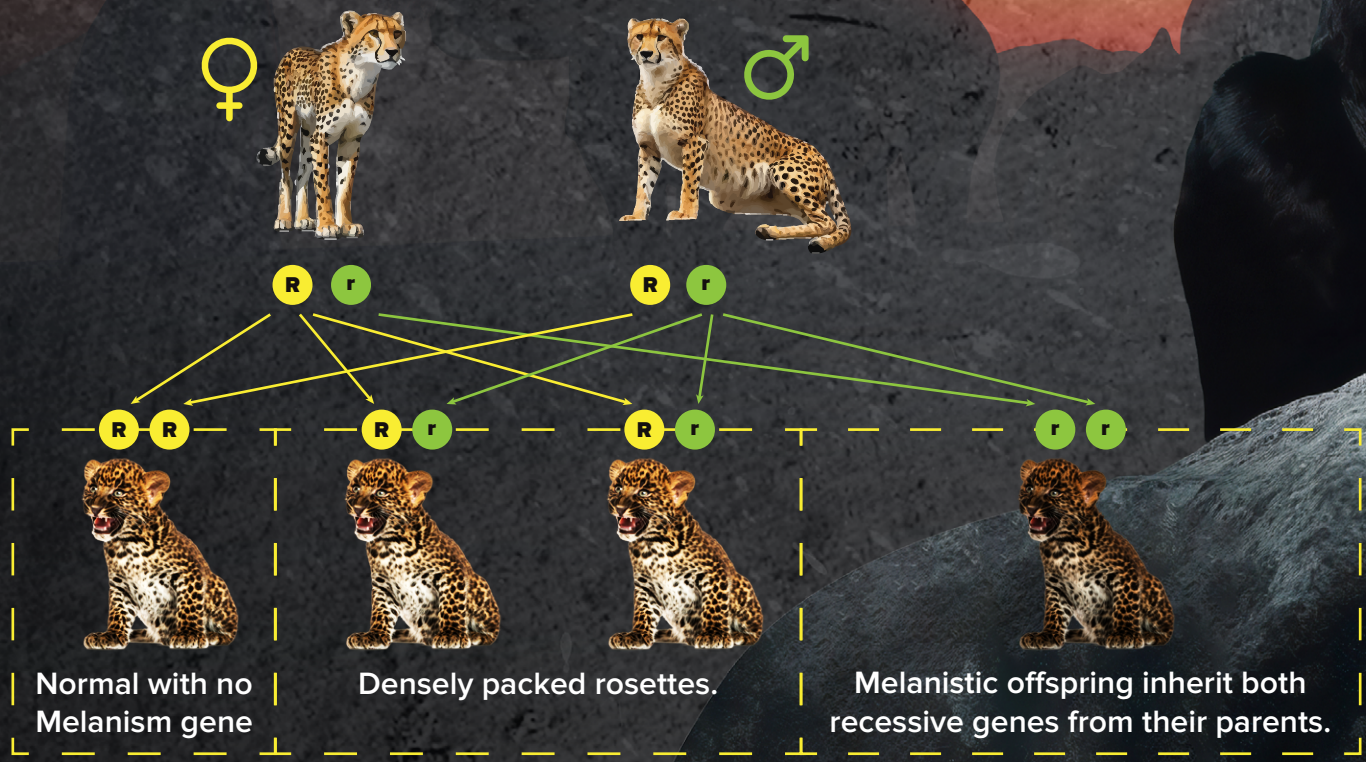
Do you know?

The intensity of a **black leopard's darkness** also seems to be influenced by its habitat. Those in the lush rainforests of the Western Ghats tend to be darker than their cousins in the dry deciduous forests of Central India.

How black panther cubs are born?

(R) Dominant allele **(r) Recessive deleterious allele**

When adults with the Recessive deleterious allele (r) gene mate, their child can be melanistic.



Hidden Ghosts

Interestingly, if you look closely at a black leopard in the right light, you might just catch a glimpse of their spots, known as "ghost rosettes"!

Leopards with densely packed rosettes.

Leopards that are partly black with lighter skin patches in some parts.

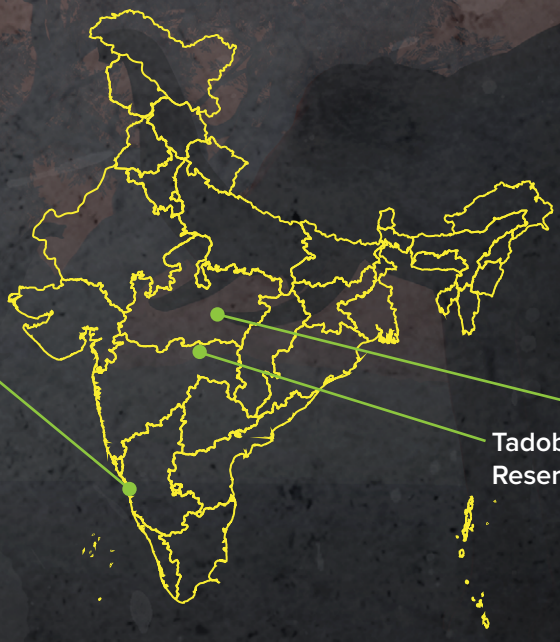
Leopards which are black with faintly discernible rosettes.

Where to Spot These Shadowy Cats

Bagheera, from the popular 'Jungle Book' is from Pench National Park in Madhya Pradesh, which was formerly known as the forest of Seoni.

Do you know?

Malay Peninsula in Malaysia is the world's black panther capital, with most leopards south of the Isthmus of Kra being black.



Western Ghats

Kabini (Nagarhole Tiger Reserve), Bhadra Tiger Reserve, Daneli Wildlife Sanctuary, and Nagarhole National Park in Karnataka

Central India

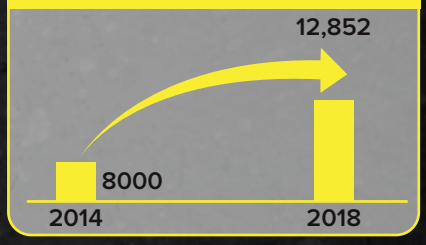
Bandhavgarh National Park, Madhya Pradesh

Tadoba Andhari Tiger Reserve, Maharashtra

The Dark Side: All is not well

- While these creatures appear beautiful on the outside, Genetic mutations can lead to various side effects, such as increased disease resistance and increased aggression in black panthers compared to their spotted counterparts.
- Also, the increase in India's leopard population has led to an increase in the sighting of black panthers in recent years. These increased encounters often point to a disturbing trend: shrinking leopard habitats and rising conflicts.

Increase in Total leopard population in India



Global Promises, Local Failures: Flaws in Global Climate Action Approach

Global climate promises collide with local realities, exposing the flaws in our approach to environmental action

Economic Survey 2023-24 highlighted that India is set to become the world's third-largest economy by 2030, yet it remains one of the most scrutinized nations for its role in global emissions. The Survey highlights how, despite India's significant strides in renewable energy and sustainability, international climate frameworks still unfairly burden developing countries. This disconnect points to a deeper issue: flaws in the international approach to climate change, which has long been heralded as a unified global solution.

The strategies predominantly driven by developed countries fail to address the nuances of environmental, economic, and social disparities across the globe. The focus on blanket solutions, over-reliance on technology, and market-based strategies reflect a skewed perspective that overlooks the complex realities of climate change for much of the world. The time has come to reassess whether the international community's current efforts to combat climate change are truly inclusive or if they are, in fact, exacerbating the problem they aim to solve.

> India, despite being labelled as a major polluter, has contributed only about 4% of global greenhouse gas emissions from 1850 to 2019.

Overlooking the diversity of Global realities

Climate policies are often prescriptive, mandating specific energy transitions or technological adoptions, regardless of local contexts. For example, renewable energy solutions like solar panels and electric vehicles, though viable in certain regions, may be economically unfeasible or inefficient in others.

India, despite being labelled as a major polluter, has contributed only about 4% of global greenhouse gas emissions from 1850 to 2019, yet it is expected to adopt the same aggressive measures as historically heavy polluters like the United States and China. The lack of differentiation between historical and current emissions responsibilities creates an unfair burden on developing nations that are still grappling with different challenges like rapid urbanization, growing energy demands, among others.

Ignoring Interconnected Systems

Another issue with the current global approach to climate change is its working in silos, ignoring the inherent interconnectedness of ecosystems, energy, and human life. For instance, while solar panels are touted as a green alternative, the process of mining the materials for solar batteries and the associated environmental costs are often overlooked. Extracting lithium and other minerals not only depletes natural resources but also generates substantial carbon emissions during processing. Such "renewable" solutions often mask the hidden environmental costs that come with their production and disposal.

Moreover, the global focus on shifting from fossil fuels to renewables like solar and wind energy also faces technological and logistical challenges. Studies indicate that 100% reliance on solar and wind energy would require massive, expensive storage solutions. Inadequate research on their lifecycle costs results in a misleading picture on their long-term sustainability.

Insufficient focus on Sustainable Lifestyles

Current international strategies disproportionately focus on technological fixes while neglecting the need for more sustainable living practices. In developed nations, energy-intensive technologies such as cloud storage, artificial intelligence, and cryptocurrency mining are rapidly expanding, contributing to skyrocketing energy consumption. For example, a single AI-based search query on platforms like Chat-GPT consumes up to 10 times more energy than traditional search engines.

This hyper-focus on energy-hungry technologies diverts attention from the simple, low-tech solutions that could significantly reduce environmental impact. In contrast, India's traditional lifestyle practices—such as multi-generational living and resource conservation—offer valuable lessons in sustainable living. These practices demonstrate how small lifestyle changes can have a large environmental impact.

Financial Imbalances in Climate Action

> Research shows the while developing countries require an estimated USD 6 trillion by 2030 to meet just half of their climate targets, only USD 100 billion was pledged by developed nations by 2020.

The financial disparities in climate action are another area where the global approach falls short. Developed nations have historically pledged financial assistance to help developing countries meet their climate goals. However, the reality is far from the promise. Research shows that while developing countries require an estimated USD 6 trillion by 2030 to meet just half of their climate targets, only USD 100 billion was pledged by developed nations by 2020, of which a meagre USD 83.3 billion was provided. This shortfall in climate financing perpetuates the cycle of inequality, making it nearly impossible for poorer nations to implement necessary climate action.

Financial disparities in climate action result in disproportionate burden on under-developed and least developed countries

Moving beyond Market-based solutions

The reliance on market-based solutions to drive climate action is another flawed aspect of the international approach. While market economies may promote certain environmentally friendly behaviours, they often prioritize profit over sustainability. The commodification of climate solutions, such as carbon credits and emissions trading, does little to address the root causes of environmental degradation. Instead, they allow wealthier nations to pay their way out of responsibility while poorer countries bear the brunt of the consequences.

Also, market-based solutions result in downgrading of developmental goals in the process of elevation of containing global emissions. For instance, developing nations are also being threatened with a carbon tax at the border. This goes in stark contrast of the spirit of common but differentiated responsibilities (CBDR) and respective national capabilities that was supposed to have undergirded the Paris Agreement.

The current global approach to climate change, with its over-reliance on technological fixes and market-driven solutions, fails to address the root causes of environmental degradation. True climate resilience requires a shift in mindset—one that goes beyond technology to embrace ethical and moral values. To truly tackle the climate crisis, we must adopt a more holistic perspective that considers the interconnectedness of nature, sustainable lifestyles, and the responsibility of every individual.

World Bank Report on the Impact of Climate Change on Education

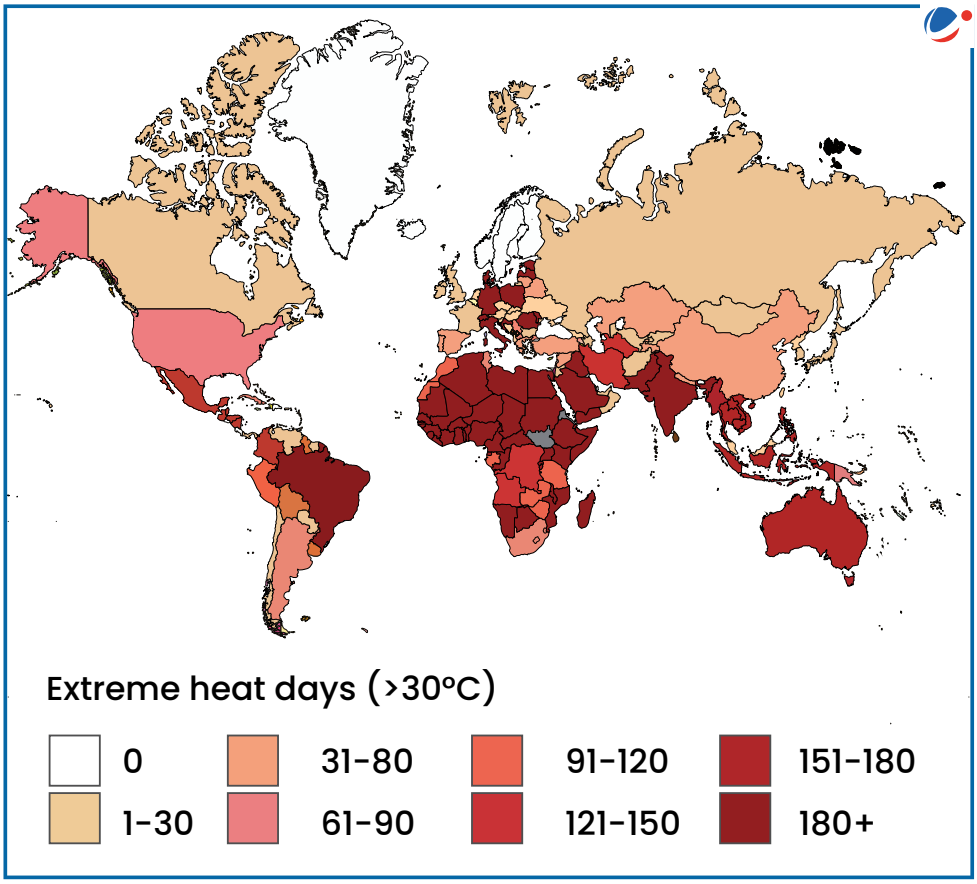
Report on the Impact of climate change on education (Source: World Bank)

World Bank Report on the Impact of Climate Change on Education

The World Bank Group released a report depicting the uncovered and undermined impact of climate change on education. In a sense, the report highlights the alarming impact of extreme weather events and rising temperatures on learning outcomes, school infrastructure, and educational continuity. As extreme weather events become more frequent and intense, millions of children face disrupted schooling, substantial learning losses, and long-term consequences for their future prospects.

The report also paints a stark picture of the future, revealing that a 10-year-old in 2024 will experience a dramatically different climate reality compared to a child in 1970. Over their lifetime, they will face twice as many wildfires and tropical cyclones, three times more river floods, four times more crop failures, and five times more droughts. These climate-related disasters often lead to prolonged school closures, with data showing that schools have closed in at least 75% of extreme weather events impacting 5 million people or more over the past two decades.

> As extreme weather events become more frequent and intense, millions of children face disrupted schooling, substantial learning losses, and long-term consequences for their future prospects.



Global Incidence of Extreme Heat Days (> 30˚C) In 2020 (Source: World Bank)

Children's Education at Risk

The scale of the problem is staggering. Over 99% of children across the world are exposed to at least one major climate and environmental hazard or shock as per the findings of the report. This universal exposure underscores the urgent need for comprehensive, global action to protect educational systems and opportunities. Rising temperatures pose another serious threat to learning outcomes. The report cites evidence showing that extreme heat during school days can significantly impair cognitive performance and test scores. For instance, in the hottest 10% of Brazilian municipalities, students lost about 1% of learning per year due to rising temperatures, potentially amounting to 0.66-1.5 years of lost learning by the time they complete 12th grade. Even a modest increase of 1°C in outdoor temperature on exam days can result in a substantial decline in test scores.

Furthermore, increasing food insecurity and economic fragility jeopardize school enrolment, with projections suggesting that up to 170 million people will be at risk of hunger by 2080 due to climate change, inevitably affecting student learning and attendance. Despite the gravity of these risks, education remains largely overlooked in climate policy discussions. The report notes that education made up less than 1.3% of climate-related official development assistance in 2020, and is mentioned in fewer than one-third of Nationally Determined Contribution plans. This oversight threatens to undermine both poverty reduction efforts and effective climate action.

How to Deal?

To address these challenges, the report emphasizes several key approaches such as Education Management for Climate Resilience, which involves investing in early warning systems like Indonesia's InaRISK mobile app; and School Infrastructure for Climate Resilience, exemplified by Rwanda's project equipping school sites with retaining walls. Moreover, Managing Classroom Temperatures, such as Kenya's Green Economy Strategy promoting bioclimatic design; and Ensuring Learning Continuity, as demonstrated by Ghana's successful back-to-school campaign after COVID-19. The report also stresses the importance of leveraging students and teachers as change agents in climate adaptation and risk reduction, potentially integrating climate education into national curricula and training teachers to effectively communicate about climate risks and mitigation strategies.

> The report notes that education made up less than 1.3% of climate-related official development assistance in 2020, and is mentioned in fewer than one-third of Nationally Determined Contribution plans.

It's high time to understand that the clock is ticking so we need to take immediate actions to address the rising impact of climate change on education on education. By implementing adaptive strategies and prioritizing education in climate policy, we can work towards creating resilient education systems that will equip the next generation to face the challenges of a changing world. The intersection of climate change and education underscores the need for a holistic approach to global challenges, recognizing that environmental issues have far-reaching consequences across all sectors of society, including the fundamental right to education.

Venezuela Bids Farewell to Its Last Glacier

Piece of Humboldt Glacier

Once a land of towering ice giants, Venezuela has become a chilling testament to the devastating effects of climate change. Over the past century, the country has witnessed the tragic loss of at least six glaciers. The latest casualty in this environmental catastrophe is the Humboldt Glacier, once the sole survivor of Venezuela's icy heritage. Now, reduced to a mere remnant of its former self, it has been reclassified as an ice field. This heartbreaking event is not isolated. Across the globe, glaciers are retreating at an alarming pace. Experts warn that two-thirds of the world's glaciers could disappear by the end of the century if current trends continue. India is also at the risk of losing its glaciers.

> Two-thirds of the world's glaciers could disappear by the end of the century if current trends continue.

Glaciers: Nature's Frozen Giants

Glaciers are essentially large and thick masses of ice that are formed on land due to the accumulation of snow over centuries. Think of them as nature's ice cream sundaes, but instead of chocolate syrup and sprinkles, they have rocks and dirt trapped inside. They're usually found in cold places where the winters are snowy and the summers aren't too warm to melt all the snow. While there's no exact size rule for glaciers, scientists usually consider them to be at least 10 hectares big.

A Warming World, Melting Ice

Glaciers are melting at unprecedented rates across the world. The Mountains like Andes, Himalaya etc. once a frozen fortress, are now feeling the heat. Hindu Kush Himalayan Mountain ranges could lose up to 80% of their volume this century if GHG emissions are not drastically reduced, according to a 2023 report.

The reason for glaciers melting is quite obvious — it is global warming. Like an ice cube melts when exposed to heat, glaciers are melting due to warmer temperatures. And what is causing these warmer temperatures? It is the greenhouse gases (GHGs). Think of them as a blanket that keeps our planet warm. But since the Industrial Revolution, we've been piling on too many blankets, making the Earth sweat and causing temperatures to rise.

> Hindu Kush Himalayan Mountain ranges could lose up to 80% of their volume this century if GHG emissions are not drastically reduced.

Bearded Seal near Glacier

Ice calving from Margerie Glacier in Glacier Bay
Source: World Atlas

The Vanishing Ice: A World in Peril

Glaciers aren't just pretty to look at. They play crucial role in regulating the Earth's atmosphere. Ice cools the air and reflects the sun's heat away from the planet's surface, acting as an air conditioning system. Melting glaciers reduce this cooling potential.

When glaciers melt, they contribute to rising sea levels. This is especially true for the massive ice sheets in Greenland and Antarctica. Further, climate change, fuelled by melting glaciers, can also lead to more extreme weather events like heat waves, droughts, and storms.

Glaciers are vital sources of freshwater, especially during dry spells. Without them, communities, plants, and animals would struggle to survive. From tiny insects to majestic mountain goats, these creatures depend on the unique ecosystems that glaciers create. As glaciers retreat, the delicate balance of life within these ecosystems is disrupted, leading to a tragic loss of biodiversity.

For countries like Venezuela, the loss of its glaciers is more than just an environmental tragedy. It's a cultural loss. Glaciers have been a part of the region's identity for centuries, and their disappearance will have a profound impact on tourism and mountaineering activities.

Way Ahead

Glaciers, these frozen giants, are essential to our planet's health. Once a glacier is gone, it's incredibly difficult, if not impossible, to bring it back. The reason is simple: glaciers need ice to survive. The ice reflects sunlight, keeping the area cool. Without this icy shield, the ground heats up, making it harder for new ice to form. Hence, it's a race against time. If we don't slow down our emissions, we could lose these majestic glaciers forever, leaving behind a world that's both hotter and less hospitable.

Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge

Facet of Indian Traditional knowledge system
Source: Ministry of education

How many times have we heard that applying turmeric will speed up the healing process? Imagine someone claiming that we own the medicinal properties of turmeric and cannot use it for healing purposes.

In 1995, the United States granted the University of Mississippi Medical Centre a patent for turmeric's wound healing properties. The Indian Council for Scientific and Industrial Research (CSIR) objected to the patent grant. After a legal battle, the patent was revoked, stating that the patent's claims were obvious and anticipated, and that the use of turmeric was genetic resource in India used for centuries. The Turmeric case safeguarded India's traditional knowledge.

What are Genetic Resources and Associated Traditional Knowledge?

Recently, the World Intellectual Property Organization (WIPO) adopted the Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge.

Genetic Resources (GRs) are resources found in medicinal plants, agricultural crops, and animal breeds. While GRs cannot be directly protected as intellectual property, inventions made with them can be protected by patents. Whereas, traditional knowledge (TK) is a knowledge system held by indigenous communities. It frequently relates to their natural environment and includes a variety of disciplines such as agriculture, science, ecology, and medicine. This traditional wisdom has been passed upon through generations and reflects the communities' extensive knowledge of their surroundings and natural resources.

> World Intellectual Property Organization (WIPO) adopted the Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge.

Source: WIPO

What are the key provisions and significance of the treaty?

The treaty was adopted by consensus among more than 150 countries including India. Negotiations for the Treaty began at WIPO in 2001, initiated in 1999 with a proposal by Colombia. This is the first WIPO Treaty to address the interface between intellectual property (IP), genetic resources (GRs) and traditional knowledge (TK). It will come into force three months after ratification by 15 parties.

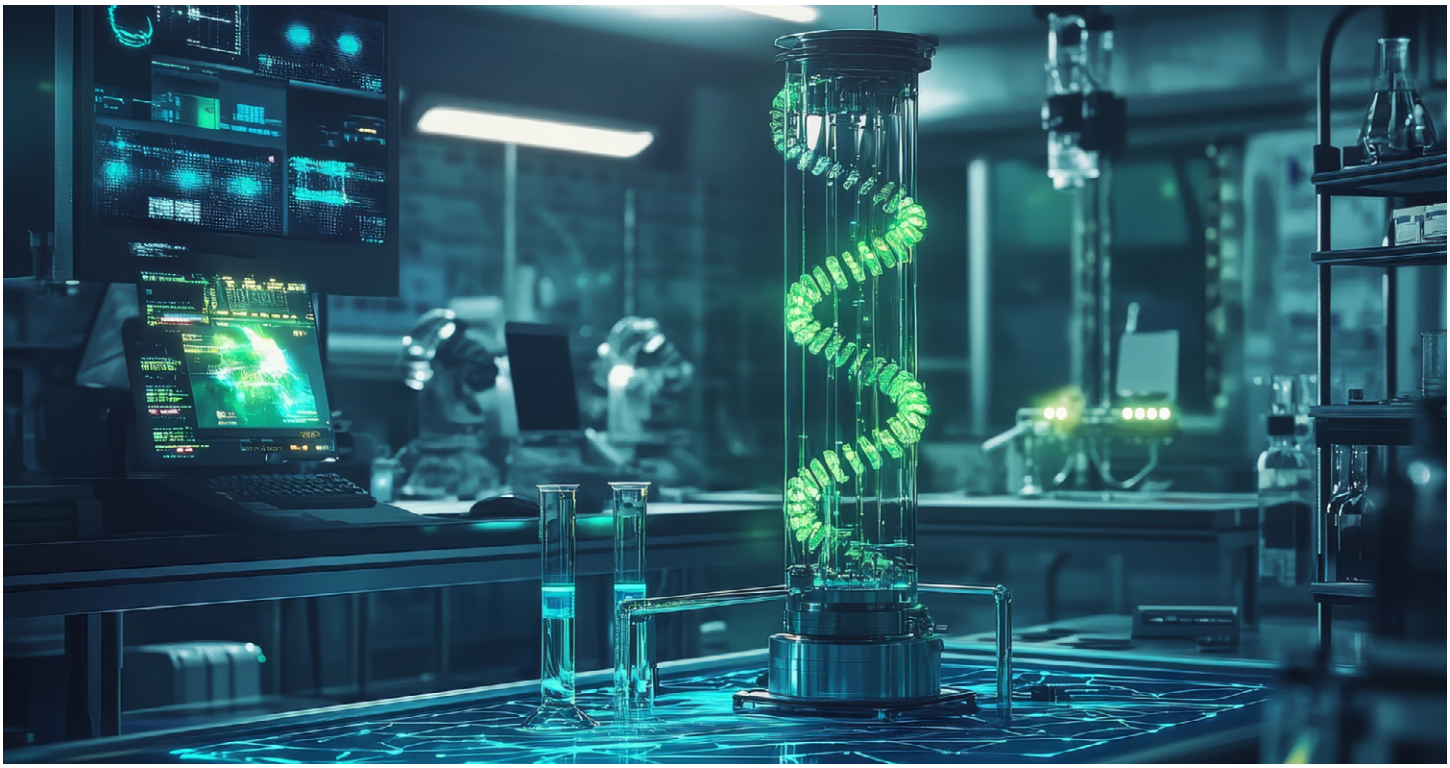
Treaty mandates that Patent applicants must disclose the country of origin or source of genetic resources when the claimed invention is based on these resources. It also call for legal, administrative, and/or policy Framework at national level.

Treaty will enhance transparency in the patent system as the current Intellectual Property (IPR) regimes such as the TRIPS Agreement do not adequately protect TK in the public domain. Mandatory disclosure obligations offer added protection to GRs and associated TK in countries without existing disclosure laws. At present, only 35 countries have some form of disclosure obligations, most of which are not mandatory. It will also prevent companies exploiting the biodiverse South (developing nations) by patenting their TK. Finally, it will encourage ethical innovation by promoting engagement with source communities of GRs and TK, fostering collaboration, and enhancing international cooperation.

> This is the first WIPO Treaty to address the interface between intellectual property (IP), genetic resources (GRs) and traditional knowledge (TK).

Conclusion

India has fought for a sustainable future for centuries, and this treaty is the first step towards realising that promise. Having ratified the treaty, the next step is to put it into effect in a way that is consistent with its spirit. It has the potential to steer the world in a way where innovation and safeguarding community knowledge are closely intertwined.



Snapshot

HOUSE SPARROWS

Little bird of your balcony

In our childhood, the "chi-chi" of a sparrow has cajoled us away from crying. As such, the sparrow has been a special invitee to our households, every now and then. But lately, have we ever pondered upon as to why have we stopped seeing our little friend Chiriya in our backyard?

House sparrow (Passer domesticus)

- Even if we don't know, they are one of the most common animals in the world.
- The house sparrow inhabits every continent, except Antarctica, China and Japan.
- It is native to Eurasia and North Africa, and was introduced to various parts of the globe, including India, where its population thrived.

Do you know?

In many cultures, **Sparrows are often seen as symbols of good fortune.**

Why can't you spot these little birds in your balconies anymore?

- Over the past 50-60 years, sparrows have been deserting human companies in urban areas. Rapid urban lifestyle changes are becoming incompatible with the lifestyles of sparrows.
  - Non-availability of tiny insects, the excessive use of mosquito repellents, concrete architectures unsuitable for their nests, pollution and phone signals has all contributed to their disappearnace.

Animosity towards our feathered friend: Where did it all start?

- They were called 'avian rats' in the late 19th century for damaging cereal and other crops.
- In parts of Russia, people's taxes were lowered in proportion to the number of sparrow heads they brought.
- Chinese President Mao ordered citizens to bang pots and make sparrows fly outside their homes.

Sparrows at work: Why do we miss them?

- Saprrows work as natural effective pest control agents.
- They also help in pollination by visiting flowers and transferring pollen Strategies to bring Sparrow back

Bringing our Sparrows back: What can you do?

- Keep water outside our balconies.
- Try to plant native plants or flowerpots outside our house.
- Try to create awareness about the importance of protecting birds.
- They are included in the IUCN Red List of Threatened Species.
- March 20 has been adopted as World Sparrow Day.
- Delhi adopted the House sparrow as its State bird.

Other birds that have decreased dramatically in recent years

- The white-backed vulture due to the use of pesticides.
- Passenger pigeons due to hunting for meat.
- Sarus crane due to large numbers to pesticide poisoning.

Muria Tribe: Preserving Age-old Traditions

Muria Tribe is one of the aboriginal tribes of India. They are mainly concentrated in the Bastar region of Chhattisgarh. They also are the inhabitants of Maharashtra. Many families of Muria tribes have migrated to Godavari valley in the State of Andhra Pradesh due to Naxal activities in their region. They are predominantly agrarian. Also, they are dependent on forest-based activities.

Women of Muria Tribe
Source: Bastar government

They generally live in dense forests and are self-dependent for most of their daily needs. In agriculture, they follow a traditional method of preserving seeds, popularly known as “Deda”. This traditional method has been followed by their ancestors. It ensures that good-quality seeds are available for sowing in the next season.

In this unique method, a deda is made up of Siali leaf (Bauhinia vahlii), locally known as ‘addakulu’, which is used to preserve seeds and is almost airtight. It has three layers. In the first layer, wood ash is spread inside the Siali leaves. Then, the ash is covered with lemon leaves to form a casing, and, the seeds are preserved inside the casing and sealed.

This method prevents seeds from pests and worms. With the help of this method, seeds can be used for cultivation for up to five years. Sometimes, they also adopt the same method to store the yield of the pulses, meant for their consumption.

Afforesting: Planting for a Greener Future

Transworld Group, a Global Shipping & Logistics Solution conglomerate, has embarked on the journey of planting 500,000 trees by 2027. It started a tree plantation drive by planting 5,027 saplings across its locations in India and abroad. The plantation was started by the company on its Corporate Responsibility Day. This initiative is aligned with the company’s long-standing commitment towards environmental stewardship. Many volunteers and community members also participated in it, demonstrating a shared commitment to environmental stewardship.

Volunteers taking part in the Plantation Drive
Source: India CSR

In this Plantation derive, tree species have been chosen based on the ecological conditions of each region. For instance, in Delhi, Neem, Peepal etc. trees will be planted. Similarly, Trumpet Tree, Amaltas, etc. will be planted in Kolkata.

To achieve the objective by 2027, the Company has partnered with two prominent NGOs- Catch and Aahwahan Foundation. Catch Foundation will do plantation with the help of the Climate Smart Village Project (CSVP) methodology, which is inspired by the Miyawaki Method. Aahwahan Foundation will implement plantation drives in Delhi, Kandla, Kochi, Kolkata, Paradip, and Tirupur.

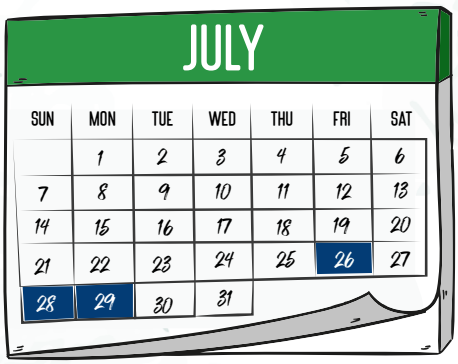
Eco Mark Scheme- Facilitating Environment Friendly Choice

When a person goes shopping, it is difficult for him/her to identify whether the product is environmentally friendly or not. To resolve this issue, the government had started the Eco Mark Scheme in 1991. Under it, the eco-friendly products are marked with the Eco-mark logo. Any product which is made, used, or disposed of in a way that significantly reduces the harm it would otherwise cause the environment, could be considered as an Environment-Friendly Product. The Scheme is being administered by the Bureau of Indian Standards.

Eco Mark Logo
Source: Bureau of Indian Standards

Eco Mark is a voluntary initiative, which labels consumer products as environment friendly, based upon certain environmental as well as quality parameters. The criteria follow a cradle-to-grave approach, i.e. from raw material extraction to manufacturing, and disposal.

Its primary objective is to provide an incentive for manufacturers and importers to reduce the adverse environmental impact of products and to reward genuine initiatives by companies in this regard. Also, it assists consumers to become environmentally responsible in their daily lives by providing information, to take account of environmental factors in their purchase decisions. It encourages citizens to purchase products that have less harmful environmental impacts and ultimately improve the quality of the environment and encourage the sustainable management of resources.



Green Days Diary

26 July

International Day for the Conservation of the Mangrove Ecosystems

Recognizes the unique and sensitive nature of mangrove ecosystems and promotes sustainable management, protection, and usage.

29 July

International Tiger Day

Observed every year to raise awareness about this majestic yet endangered large cat. The day was established in 2010 when the 13 tiger range nations collaborated to develop Tx2, a worldwide objective to double the population of wild tigers by 2022.

28 July

World Nature Conservation Day

Recognises the importance of a healthy environment in building a healthy society. It's also a day to raise awareness about the value of safe guarding our natural resources.

"WORD OF THE MONTH!"

Greenium

It is the extra savings a company or government gets for borrowing money through a green bond because investors accept lower returns to support eco-friendly projects.

10 Indian Lifestyle Practices to Combat Climate Change

Sustainable Indian lifestyle for a better future

As the global community grapples with the challenge of climate change, India offers a unique perspective rooted in its ancient wisdom and sustainable traditions. These traditions are at the core of the "Mission LiFE" (Lifestyle for Environment), introduced by the Indian Prime Minister at COP26, to shed light on the individual responsibility for effective climate action.

India's traditional practices have stood the test of time. These practices are not just theoretical concepts but have been an integral part of Indian culture for centuries.

> As the ancient Indian philosophy suggests, we must strive for "Vasudhaiva Kutumbakam" - the world is one family.

By embracing these Indian lifestyle choices, we not only contribute to mitigating climate change but also create a more harmonious relationship with our environment.

The path to sustainability lies not just in technological innovations, but in a fundamental shift in how we live our daily lives. As the ancient Indian philosophy suggests, we must strive for "Vasudhaiva Kutumbakam" - the world is one family. In this spirit, let's adopt these eco-friendly practices and inspire others to join in creating a more sustainable future for our planet.

Ladakh
Ladakhi Homes

Ladakh people adapt their living spaces to seasonal changes, using two-story houses with a kitchen as the main area and cattle on the lower floor.

Punjab
Madani

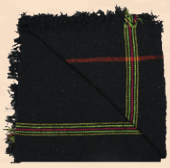
Madani, a traditional Indian hand blender, whips and churns buttermilk, a summer drink produced from yoghurt and water in clay pots.

Rajasthan
Khadeens

Khadeens, or dhora lakes, were created for short-lived rivers like the Luni to maintain soil moisture for crop cultivation by raising pals and fixing a sheet.

Gujarat
Khakhra

Khakhra, a Gujarati snack, is a recycled roti made from leftover chapati that reduces food waste, energy, and storage costs.

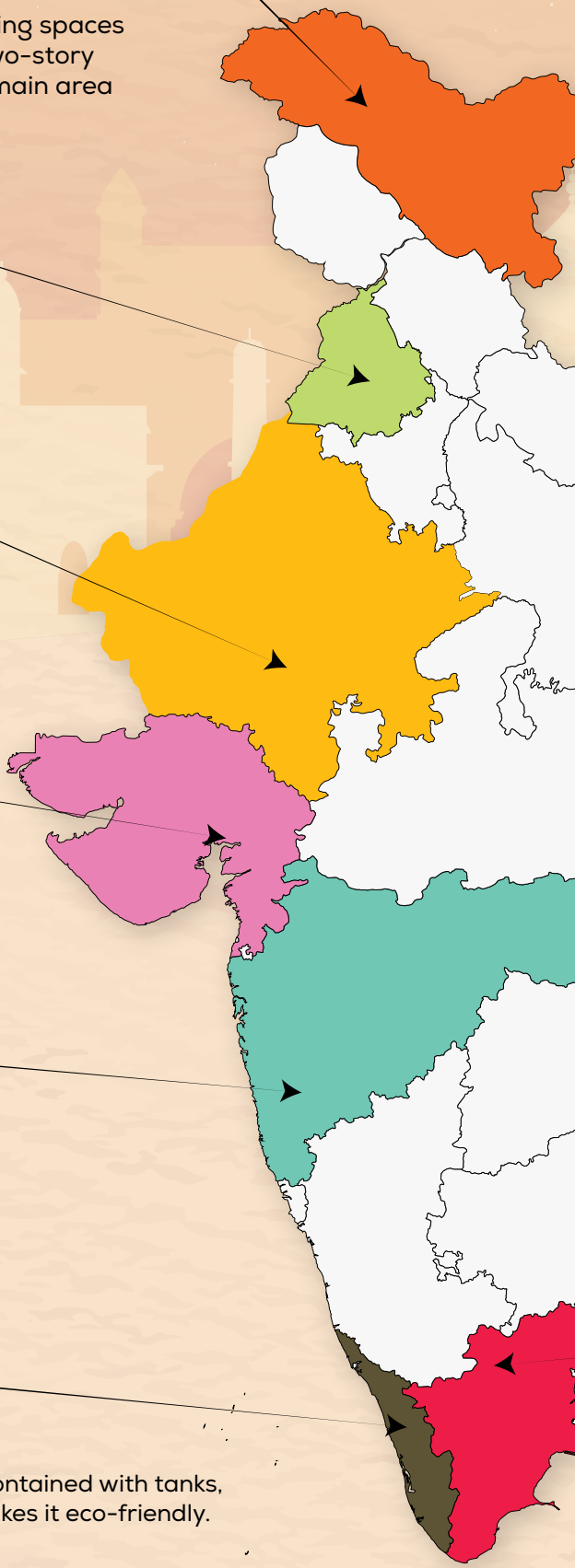


Maharashtra
Ghongadi and Jaan

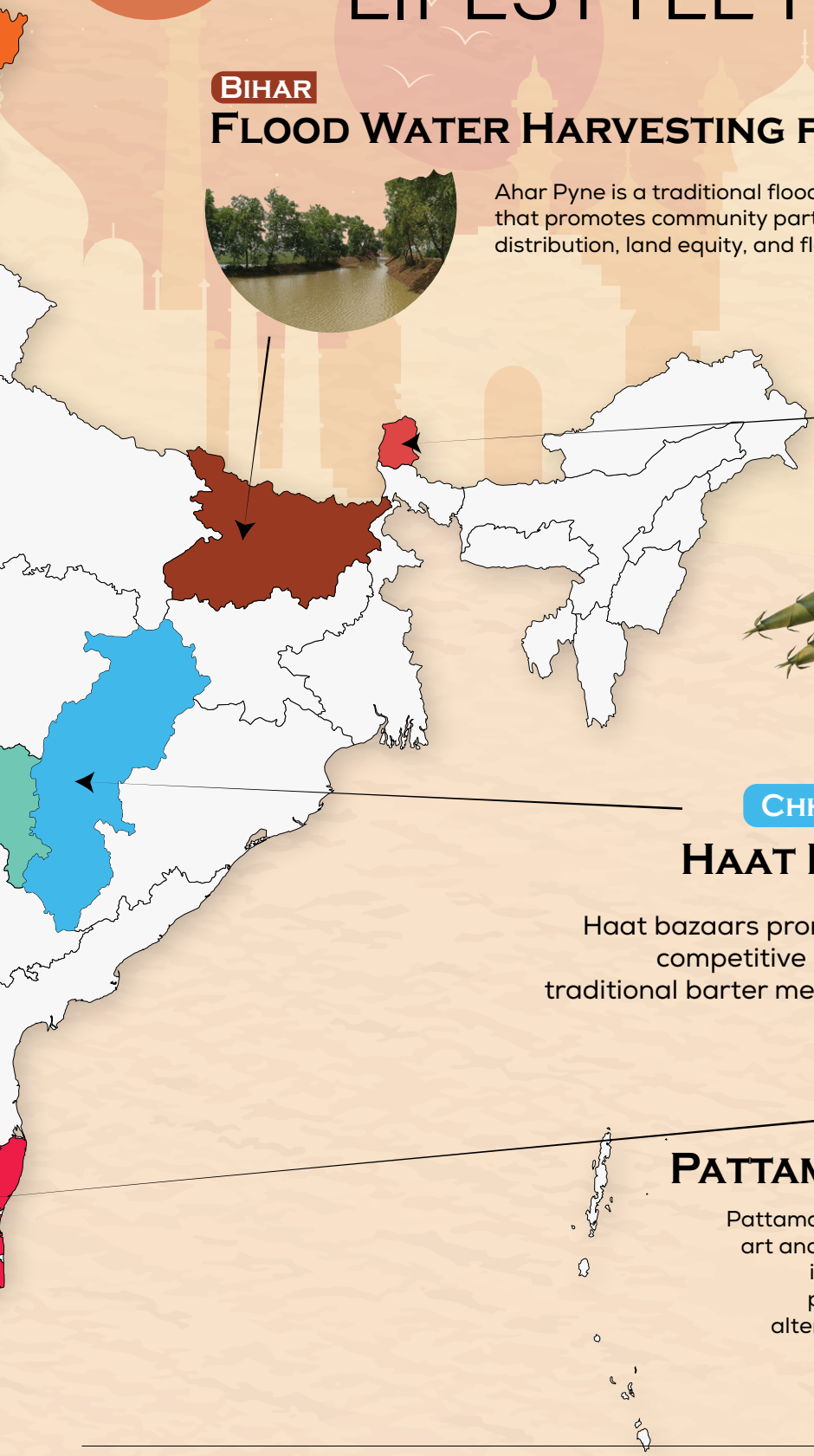
Ghongadi and Jaan are woollen products made from Deccani sheep, used by farmers, herdsmen, and tribals in high-rainfall areas.

Kerala
Nalukettu

Nalukettu is a traditional Kerala mansion with four blocks, self-contained with tanks, wells, and kitchen gardens, surrounded by a courtyard which makes it eco-friendly.



10 Sustainable Indian LIFESTYLE PRACTICES



Bihar
Flood Water Harvesting for Irrigation

Ahar Pyne is a traditional floodwater harvesting system that promotes community participation, water distribution, land equity, and flood protection in plains.

Sikkim
Eating Local for Low Food Miles

Bamboo is used in the production of Sikkim's fermented food item Mesu, which is climate-friendly

Chhattisgarh
Haat Bazaars

Haat bazaars promote sustainable consumption in a competitive business environment by providing traditional barter methods, free medical services, and a range of commodities.

Tamil Nadu
Pattamadai Mats

Pattamadai mats, a traditional art and craft, are now utilized in korai grass products, providing a sustainable alternative to plastic mats.

Threads of Tradition: India's Timeless Approach to Sustainable Fashion

Sustainable Indian lifestyle for a better future

Sustainability has long been woven into the vivid fabric of Indian culture, notably in how we relate to clothes. Yet, despite this rich heritage of clothing sustainability, India faces significant challenges in the modern era. According to the Economy Survey 2024, less than half of textile waste in India currently undergoes any kind of reuse, repair, or remanufacture. This statistic stands in stark contrast to our traditional practices and highlights the urgent need to revive and adapt these customs for the contemporary world.

> Long before "upcycling" became a global buzzword, Indian households were practicing the art of transforming old garments into new treasures.

Indian culture vs Fast Fashion

Long before "upcycling" became a global buzzword, Indian households were practicing the art of transforming old garments into new treasures. This tradition, deeply rooted in our cultural ethos, offers a powerful counternarrative to the modern fast fashion industry that has taken hold in recent years. Consider the simple cotton saree, a garment that epitomizes the Indian approach to sustainable fashion. A saree, worn for decades, doesn't end its life when it becomes too worn for its original purpose. Instead, it embarks on a journey of transformation. Old sarees find new life as quilts (gudris), cushion covers, cleaning cloths or even as colourful bags

The concept of "jugaad," or frugal innovation, has long been a part of Indian life, and it extends to our clothing practices as well. In many households, old cotton shirts find new purpose as cleaning cloths, while worn-out pyjamas transform into comfortable home wear. India's tradition of 'hand-me-downs' is another sustainable practice worth noting. Clothes are often passed down through generations or within communities, extending their lifecycle and reducing the need for new purchases. This practice not only minimizes waste but also strengthens social bonds and creates a sense of shared history through clothing.

> India's tradition of 'hand-me-downs' is another sustainable practice worth noting. Clothes are often passed down through generations or within communities, extending their lifecycle and reducing the need for new purchases.

The art of mending and altering clothes, once a common skill in Indian households, is another traditional practice that aligns perfectly with modern sustainability goals. Reviving these skills could play a crucial role in combating the throwaway culture associated with fast fashion. Hence it's not a surprise that India is witnessing a revival of community-led sustainable fashion initiatives.

Fashion with a cause

Organizations like Khamir in Kutch preserve traditional textile crafts, while social enterprises such as 'I Was a Sari' upcycle pre-loved sarees into fashionable items. Oshadi Studio in Tamil Nadu combines traditional handloom techniques with modern design, creating a closed-loop system. Initiatives like Khadi Connect promote sustainable fabric production by linking urban consumers with rural artisans. These grassroots efforts not only champion sustainable fashion but also preserve cultural heritage, support local economies, and foster a more circular fashion ecosystem.

However, we still have a long way to go. As the United Nations Environment Programme (UNEP) reports, the global fashion industry is now responsible for 2-8% of carbon emissions and is the second-biggest consumer of water. We all have a role to play here! Here are some tips and tricks to slow down your fashion!

By embracing these practices in our daily lives, we not only reduce waste but also preserve our rich cultural heritage. Each time we mend a tear or repurpose an old garment, we're being environmentally conscious and keeping alive a vital part of our cultural identity. Through these small but significant actions, we can contribute to a more sustainable future for fashion in India.

How to be fashionably thoughtful?

- Learn basic mending skills to extend the life of your clothes
- Adopt the mantra of Buy Less-Choose Well-Make It Last for maximum utilisation of clothes
- Organize clothing swap events with friends or in your community to refresh your wardrobe
- Explore upcycling projects, transforming old garments into new, useful items like tote bags from t-shirts or quilts from old sarees

Global: Quick Hits

Morocco

UNESCO has announced the launch of a new World Soil Health Index, which will standardize measures for analysing and comparing soil quality across different regions and ecosystems during the International Soil Conference in Morocco.

Liberia

Senators in Liberia are considering relocating the capital city from overcrowded Monrovia due to severe flooding.

Brazil

Scientists have found that deforestation and fossil fuel use have increased the likelihood of wildfires in Brazil's Pantanal wetland by at least four times.

Tanzania

Climate change and extreme weather are threatening Tanzania's Lake Natron, posing a threat to the delicate balance of the world's largest migratory bird colony, the pink flamingos.

Arctic

The EU's Copernicus reported a high-intensity wildfire in the Arctic for the third time in five years, highlighting an increase in wildfire frequency and scale in recent years.

Ivory Coast

Ivory Coast joins the United Nations Water Convention, becoming the 10th African nation to improve cooperative water management across borders amid rising water stress and climate change impacts.

India

300 artificial reef modules were deployed off Rameshwaram coast to benefit hook-and-line fishermen from various villages.

Philippines

Philippine oil tanker sinks near Manila, raising concerns about a major spill as it negatively affects coastal and marine ecosystems.

UAE

Dubai unveiled plans for the construction of the emirate's longest public beach in Jebel Ali, which is set to serve as a major eco-tourism destination.

Azerbaijan

Azerbaijan has proposed an initial $1 billion investment in developing countries' climate change projects, as part of the Climate Finance Action Fund, which will be launched at UN COP29 Azerbaijan.

The High Seas Treaty

High Seas Treaty (Source: CSIC)

The High Seas Treaty, formally known as the Agreement on Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction, is a new international legal framework aimed at addressing the pressing issues facing the world's oceans. It deals with the management and conservation of marine life in areas beyond national jurisdictions, which make up about two-thirds of the total ocean area.

India to Sign and Ratify the Treaty

India is expected to sign the High Seas Treaty during the upcoming UN General Assembly session in September 2024. The Ministry of Earth Sciences will oversee the implementation of the treaty in India. India's participation will enable it to contribute to global ocean governance, access biodiversity funds, and play a role in establishing marine protected areas and sharing marine genetic resources.

Ratification and Implementation Progress

The treaty will come into force once it is ratified by at least 60 countries. As of now, 91 countries have signed the treaty, and 8 have already ratified it. The High Seas Alliance is confident of achieving the target of 60 ratifications by June 2025, which would bring the treaty into force.

Significance

The High Seas Treaty has been compared to the landmark 2015 Paris Agreement on climate change in terms of its significance and potential impact. The treaty has the potential to significantly enhance ocean conservation efforts and help mitigate climate change.

Once in force, the treaty will set a legal framework for establishing marine protected areas and sharing marine genetic resources. The treaty will also play a significant role in meeting the worldwide goal of protecting 30% of the world's coastal and marine regions by 2030.

Quiz Zone

1. **Recently, this country reclassified its last Glacier as an ice field?**
   (a) Switzerland
   (b) Venezuela
   (c) Iceland
   (d) France

2. **Clean Development Mechanism (CDM) has been developed under which of the following protocol?**
   (a) Montreal Protocol
   (b) Kyoto Protocol
   (c) Paris Agreement
   (d) Rio Declaration

3. **Identify the bird from the image.**

   (a) Great Indian Bustard
   (b) Sarus Crane
   (c) White-backed vulture
   (d) Pink flamingos

4. **Consider the following pairs:**

Sustainable Practice	**State in India**
1. Nalukettu	Kerala
2. Khadeens	Rajasthan
3. Ahar Pyne	Tamil Nadu

   How many of the above pairs are correctly matched?
   (a) Only one
   (b) Only two
   (c) All three
   (d) None

5. **International Tiger Day is observed on:**
   (a) July 29
   (b) July 26
   (c) July 11
   (d) April 22

6. **Climate change and extreme weather are threatening the Lake Natron. The lake is located in:**
   (a) Nigeria
   (b) Morocco
   (c) Tanzania
   (d) Liberia

7. **When Mount Pinatubo in the Philippines erupted in 1991, its effects were felt worldwide. It caused global temperatures to drop by as much as 0.5 degrees.**
   True or False?

8. **Aquatic Deoxygenation leads to the formation of dead zones and ocean hypoxia. It can:**
   (a) Disrupt marine food webs
   (b) Contribute to ocean acidification
   (c) Compress habitats for fisheries,
   (d) All of the above

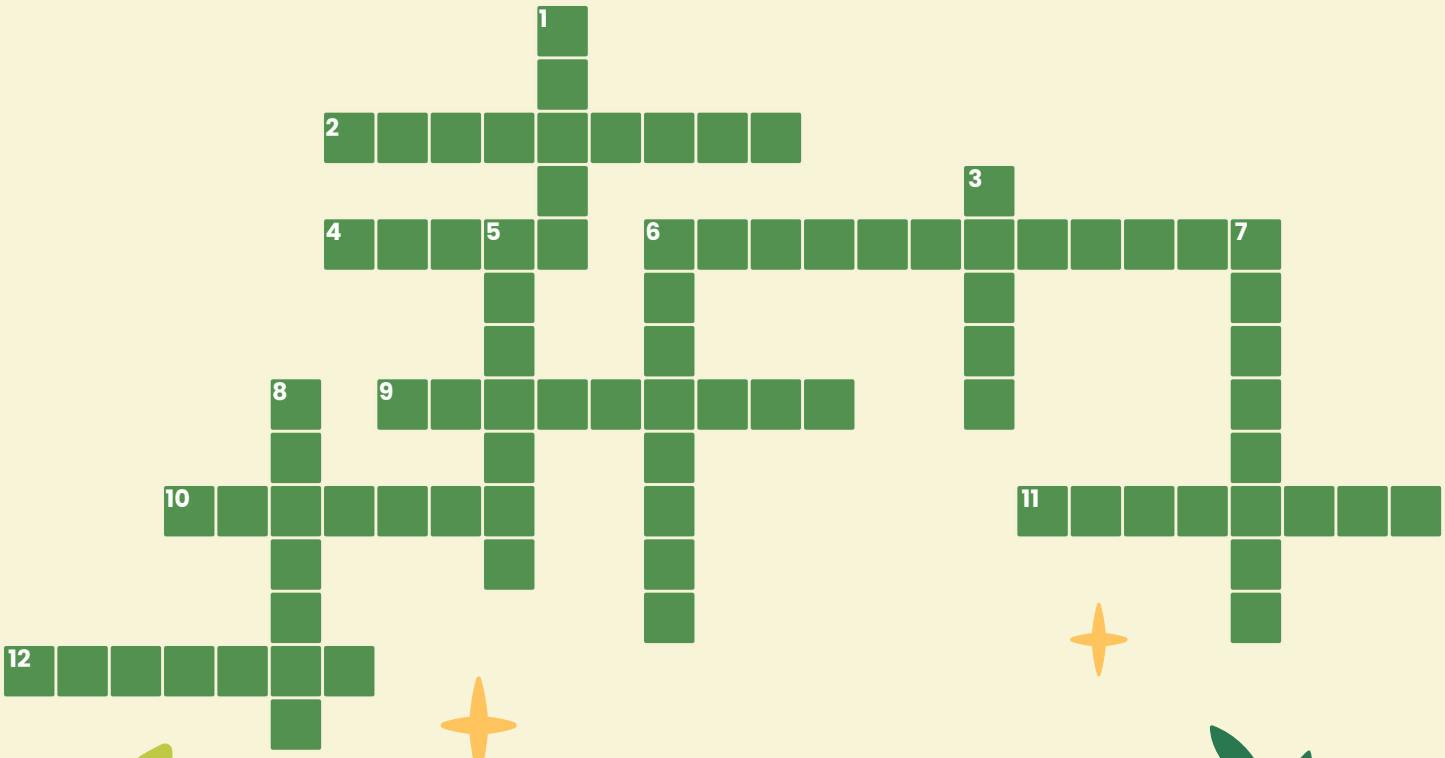
9. **State of the World's Forests 2024 report has been published by:**
   (a) United Nations Environment Programme (UNEP)
   (b) World Wildlife Fund (WWF)
   (c) Food and Agriculture Organization (FAO)
   (d) International Union for Conservation of Nature (IUCN)

10. **Which of the following acts is related to the establishment of Indian Carbon Market under the Carbon Credit Trading Scheme (CCTS)?**
    (a) Environment Protection Act
    (b) Forest Conservation Act
    (c) Electricity Act
    (d) Energy Conservation Act

Answers

1. – C, 2. – B, 3. – A, 4. – B, 5. – A, 6. – C, 7. - True, 8. – D, 9. – C, 10. - D

Crossword



Across

2. Group of trees and shrubs that live in the coastal intertidal zone
4. World's third-largest Greenhouse Gases emitting country
6. Misleading the public to believe that a company or other entity is doing more to protect the environment than it is
9. A traditional Kerala mansion with four blocks, self-contained with tanks, wells, and kitchen gardens
10. Lakes created in Rajasthan for short-lived rivers to maintain soil moisture for crop cultivation by raising pals and fixing a sheet
11. Spice which has healing power
12. Bird referred to as the 'avian rat' in the late 19th century for damaging cereal and other crops

Down

1. One of the aboriginal tribes of India concentrated in the Bastar region of Chhattisgarh
3. Tallest flying bird
5. Country where world's largest direct air carbon capture and storage (DACCS) has been installed
6. Extra savings a company or government gets for borrowing money through a green bond
7. Large and thick masses of ice formed on land due to accumulation of snow
8. City which hosted the UNFCCC COP26

ANSWERS
Across: 2. Mangroves, 4. India, 6. Greenwashing, 9. Nalukettu, 10. Khadeen, 11. Turmeric, 12. Sparrow

Down: 1. Muria, 3. Sarus, 5. Iceland, 6. Greenium, 8. Glasgow

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INSPIRING INNOVATION

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– Nelson Mandela

ABOUT 'THE PLANET VISION'

'The Planet Vision' aims to educate and inspire individuals about the importance of individual actions for a sustainable future. It presents uplifting narratives, highlighting local conservation efforts and community initiatives.

We also provide regular updates on the latest environmental technology and groundbreaking projects, aiming to raise awareness of the environment, nature, and the planet. The goal is to encourage eco-friendly behaviours and promote sustainable practices.

ABOUT AJAYVISION EDUCATION PRIVATE LIMITED

Ajayvision Education Private Limited, popular under the brand name VisionIAS, is an established leading EdTech company in India. The Infinity Vision, Galaxy Classes, and StudentEdge are several other wings that make up the larger organisation.

Since its incorporation in May 2013, VisionIAS has had a huge impact on the education industry nationwide. VisionIAS creates innovative web-based platforms and mobile apps using AI and ML technologies to give students a unique learning experience.

Moreover, the organization actively engages in CSR initiatives, extending quality education to rural households, thus expanding educational access. **Rajni Devi Global Village School (RDGV School)** and Paras India are key parts of this ecosystem.

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