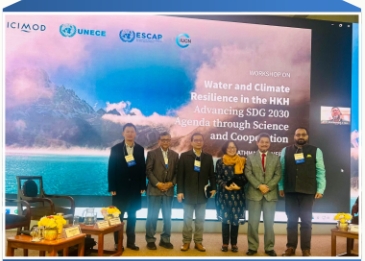


# CHRONICLE - XIII

## (AUGUST 2025 - MARCH 2026)

Center for Sustainable Development Goals | INDIA Water FOUNDATION | Focus Global Reporter

# Foreword

## Dear Jalmitra,

"I gives me immense pleasure to present India Water Foundation's chronicle with highlights of our last six months; a period marked by remarkable progress and sobering challenges in sustainable development, global cooperation, and environmental stewardship.

India achieved a historic milestone, surpassing 55% of its installed electricity capacity from non-fossil fuel sources four years ahead of its 2030 Paris target. With over 140 GW of solar power and a 4,500% growth in solar installations over the past decade, India stands as a clean energy leader for the developing world. Global momentum advanced climate finance scaling from $300 billion to $1.5 trillion annually by 2035, alongside enhanced adaptation funds for vulnerable nations.

The IMF projected global growth at 3.2% for 2026, amid protectionist trade moves and geopolitical uncertainty. India's economy remained resilient, with 2025 growth at 6.6% and inflation at a low 2.0%. However, ongoing conflicts in Ukraine, escalating Middle East tensions, and shifting U.S. climate policies challenged multilateral cooperation.

Climate impacts were severe: 2025 became the hottest year on record, surpassing 2024, with deadly wildfires in Australia, catastrophic floods in South Asia, and Europe's worst droughts underscoring the urgent need for adaptation. The 11th Sustainable Development Report revealed only 16% of SDG targets on track, but India climbed into the top 90, ranking 89th. The World Sustainable Development Summit reinforced that partnerships are key to bridging the implementation gap.

As 2030 draws nearer, our journey calls for courage, innovation, and unity. The India Water Foundation remains steadfast in building partnerships that shape sustainable, resilient futures—turning today's challenges into enduring solutions. I extend my heartfelt thanks to my team, for teamwork is the art of uniting around a shared vision and channelling individual achievements toward collective goals. It is about discovering one's unique blueprint and expressing it with courage, confidence, and purpose.

Thank you.

**Dr. Arvind Kumar**

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# EDITORIAL

## Wars, Energy Transitions, and the Climate Crisis: Navigating 2026's Inflection Point

Dr. Arvind Kumar*

As we move through early 2026, the world confronts mounting evidence that global goals are slipping out of reach just as geopolitical tensions and crises intensify. Sustainable Development is faltering: only about a third of SDG targets are on track, while nearly half are progressing too slowly and roughly 18% are going backwards. India, for example, entered the top 100 of the global SDG index for the first time in 2025 (ranked 99th), a welcome milestone but one that also underscores the long road ahead to meet universal goals. Much of the progress since 2015 – expanded education, health gains, renewable electricity growth – is fragile. Conflicts, debt crises, and climate shocks threaten to stall or reverse gains for the poor, women, and marginalized communities.

The climate outlook grows ever more urgent. A new UNEP Emissions Gap Report finds world $CO_2$-equivalent emissions hit a record 57.1 Gt in 2025 – a 1.3% rise over 2024 due largely to surging power, transport and industry emissions. Under current policies, such emissions would imply a median warming of about 3.1°C by 2100, and even full implementation of existing pledges only brings projections down to roughly 2.8°C. The report emphasizes that every fraction of a degree matters: meeting even the modest Paris targets now requires "a quantum leap" in ambition and immediate action.

Meanwhile, the World Meteorological Organization warns of alarming short-term warming. There is now an ~80% chance that at least one year between 2025–2029 will be hotter than the current record (2024) and a ~70% probability that the five-year average for 2025–2029 will exceed +1.5°C relative to pre-industrial levels. These forecasts – tempered by El Niño and long-term trends – signal that record heatwaves, droughts and storms are likely to intensify, raising disaster risks and further straining food and water systems.

Economic nationalism is colliding with climate imperatives. In 2025 the U.S. imposed sweeping tariffs – reinstating 25% duties on steel and aluminum and even a 20% tariff on all Chinese goods; ostensibly to protect domestic industry. These measures spurred Chinese export controls (for example, rare earth limits in retaliation) and sent shockwaves through global supply chains for critical materials and clean technology. Analysts warn these trade restrictions risk derailing the clean energy transition: they raise costs for solar panels, batteries and EVs, slow renewables deployment, and dampen the appetite of investors in new clean-tech projects. In short, trade wars

that pit big economies against each other are inadvertently undercutting the international cooperation and resilient supply chains needed to build wind turbines, EVs and low-carbon grids. This strategic whiplash comes as scientists say we have only a few more years to bend the emissions curve – an issue highlighted by the polarized global climate landscape.

At the same time, the war in Ukraine and the rapidly escalating conflict involving Iran are reshaping global stability far beyond their immediate theatres, embedding themselves within a broader framework of wareconomics where conflict becomes an economic instrument and geoeconomics, where trade routes, energy flows, and commodities are strategically weaponised. Ukraine's war has now entered its fourth year, and despite resilience on the battlefield, its agricultural backbone remains structurally impaired. The result is a persistently volatile global food market, where constrained grain flows continue to push up prices of wheat, maize, and edible oils, intensifying food insecurity and inflation across import-dependent economies in Africa, West Asia, and South Asia.

Concurrently, the 2026 Iran conflict has introduced a far more systemic shock to the global economy. Following large-scale U.S.–Israel strikes on Iranian military and nuclear infrastructure and Iran's subsequent missile and drone retaliation across the region, the conflict has disrupted critical maritime chokepoints, particularly the Strait of Hormuz through which a significant share of global oil supplies transit. This escalation has already begun to reverberate through global energy markets, with institutions warning of rising inflation, slowing growth, and heightened economic uncertainty as energy prices surge and shipping routes are rerouted or constrained.

Together, these conflicts underscore a deeper transformation in the nature of geopolitics. Wars today are no longer confined to territorial disputes; they are systemic disruptors of global economic architecture. Energy corridors, food supply chains, shipping lanes, and financial systems are increasingly entangled in strategic contestation. In this emerging paradigm, geopolitics, geoeconomics, and wareconomics converge where control over critical resources and trade flows defines power as much as military capability.

The strain on the multilateral system has never been clearer. The UN's core mission of peace, security and development is under siege by great-power standoffs and budget crunches. The organization's key bodies are gridlocked by vetoes and mistrust, while funding shortfalls hamper relief and reconstruction. Observers note that in this fragmented environment traditional UN and multilateral mechanisms struggle to respond effectively to interconnected crises. In practice, emergency humanitarian appeals remain severely underfunded, and global agreements (on climate, arms control, etc.) are harder to conclude amid geopolitical distrust. The bottom line is that the institutions built for an earlier era are straining under 21st-century complexity.

Yet within these convulsions are signals of a shifting geopolitical order centered on energy and technology rather than just territory or raw materials. Many governments are doubling down on renewable innovation. India's National Green Hydrogen Mission, for example, now targets 5

million tonnes of green hydrogen per year by 2030, and as of mid-2025 had already allocated production capacity of 862,000 tonnes along with 3,000 MW of electrolyzer manufacturing. This push reflects a broader "rise of renewable technology powers" versus fossil-fuel economies. Notably, India has also tapped into non-traditional sources: wave energy projects, biofuels, hybrid solar-wind plants and even hydrogen for shipping are proliferating. Indeed, one industry report observes that "wave energy, alternative fuels and hybrid solar-wind systems" now account for roughly 40% of India's tendered renewable capacity in early 2024. Similarly, the global biofuel industry is surging: new marine biofuels can cut ship emissions by upwards of 85%, and worldwide bioenergy investments are expected to jump 13% to about $16 billion. These shifts are shaking up the "energy trilemma" – security, affordability and sustainability – and pushing climate and technology into the core of strategy. The World Energy Council's 2025 report highlights how countries now frame energy policy as geopolitical strategy.

Even so, the gap remains huge. The 2025 Climate Change Performance Index shows no major economy on track to meet its 2030 Paris targets. Scientists warn that to stay in the Paris safe zone, global emissions must peak by 2025 and then fall roughly 60% by 2035 – an unprecedented speed. Yet in practice we see fragmentation: trade wars are disrupting solar, battery and mineral supply chains; conflicts and blockades are undermining food and fertilizer flows; and nationalist, short-term policies are stalling climate finance and cooperation. Meanwhile, the economic cost of inaction keeps climbing (think heat damage, storms, drought relief), and these costs are starting to show up in corporate and national budgets.

The convergence of crises – environmental, geopolitical and humanitarian – makes clear that sustainability, development and security are inseparable. The countries and communities best poised for the next decade will be those that weave together climate resilience, technological innovation and peacebuilding. In practical terms, this means ramping up climate and health financing, reforming trade rules to protect clean-tech supply chains (while avoiding retaliation spirals), and urgently resolving conflicts or at least containing them to preserve global public goods like food security.

The coming months will test whether humanity can seize this moment of flux. The path ahead is clear: build on breakthroughs (the renewable revolution, climate diplomacy wins), fix the systemic fractures (trade conflicts, financing gaps, war), and treat our planetary challenges as linked. Only by treating climate action, economic growth and peace as mutually reinforcing goals can we hope to steer through 2026's crossroads. The choices we make now – from follow-up to real trade reform and conflict resolution will determine if we accelerate into a safe, sustainable future or descend into self-made crises at a time when unity is most needed..

**Editor, Focus Global Reporter*

# HIGHLIGHT

## 2nd Edition of Water Transversality Global Awards and Conclave 2026

The **India Water Foundation**, in collaboration with the **UNESCAP-SSWA office** successfully convened the **2nd Edition of the Water Transversality Global Awards and Conclave 2026 on 6–7 March 2026** at India International Centre, New Delhi. The conclave served as a premier global platform to advance dialogue and action on integrated approaches to sustainability, particularly within the water–energy–health–environment nexus.


The event was supported by key **Government of India** institutions, including the **Ministry of Jal Shakti, Ministry of Environment, Forest and Climate Change, Ministry of Power, Ministry of Heavy Industries, Ministry of Social Justice and Empowerment,** and **NITI Aayog**.

A wide spectrum of esteemed **knowledge partners** contributed to the intellectual depth of the conclave, including **BBC Media Action, World Water Council, Global Water Partnership, UNOPS-India, International Union for Conservation of Nature, International Commission on Irrigation and Drainage, Wetlands International, Institute for studies in Industrial Development, ICARS, IIT-Roorkee.**

The conclave also witnessed strong participation from **collaborative partners** such as the **Government of Uttar Pradesh, Meghalaya Basin Development Authority, Government of Meghalaya, and leading public and private sector entities including GNFC, Indian Oil, Bharat Petroleum, GAIL India Limited, HPCL, AIESL, Delhi Metro, and Anondita Medicare Limited. Institutional partners like Sulabh International** and **SM Sehgal Foundation** further strengthened the outreach and impact of the event.

## International Conference on ESG Transversality

A central highlight of the conclave was the International Conference on "ESG Transversality for a Sustainable Water–Energy–Health–Environment Nexus." The conference brought together policymakers, industry leaders, researchers, and civil society actors to deliberate on integrated pathways for sustainable development. The conference was structured around five thematic pillars:

- **Navigating Interdependencies of the Water–Energy–Health–Environment Nexus**

This session explored the complex interlinkages between critical systems and emphasised the need for integrated governance frameworks to address climate-induced vulnerabilities and public health challenges. It underscored the importance of systems thinking in building resilience and ensuring sustainable outcomes.

- **ESG-Aligned Finance and Governance to Combat Greenwashing**

Focused on strengthening transparency and accountability, this session examined regulatory frameworks, disclosure standards, and financial instruments that ensure credibility in ESG practices. It highlighted the role of governance in driving authentic sustainability transitions.

- **Cross-Sectoral Water Transversality for Accelerating Net Zero**

This session underscored the necessity of cross-sectoral collaboration and integrated planning to achieve decarbonisation goals. It presented innovative governance models and multi-stakeholder approaches to accelerate net-zero transitions.

- **Greening Industry and Fuelling Growth through ESG Partnerships**

Discussions centred on how industries can leverage ESG frameworks to enhance competitiveness, drive innovation, and adopt circular economy practices, while fostering inclusive and sustainable economic growth.

- **Global Cooperation for Planetary Health Diplomacy**

The concluding session emphasised global solidarity, knowledge exchange, and policy coherence as essential drivers for addressing interconnected environmental and health challenges, advocating a unified vision for planetary well-being.

## Water Transversality Global Awards

In addition to the conference, the conclave featured the Water Transversality Global Awards, recognising exemplary leadership, innovation, and impactful initiatives across sectors that embody the principles of transversality and sustainability. The awards celebrated contributions from governments, institutions, and individuals who are driving transformative change in water governance and allied sectors.

# International Conference on ESG Transversality for a Sustainable Water, Energy, Health and Environment Nexus

The International Conference on "ESG Transversality for a Sustainable Water–Energy–Health–Environment Nexus" emerged as a dynamic and knowledge-rich platform, bringing together diverse stakeholders to deliberate on integrated sustainability pathways. Over the course of the two-day conclave, the conference featured approximately 25 sessions and convened more than 100 speakers from across government, international organisations, academia, industry, and civil society, reflecting both the scale and depth of engagement.

The programme architecture was designed to ensure both high-level policy dialogue and technical knowledge exchange. It comprised one Opening Ministerial Plenary that set the strategic tone for the conclave, followed by five Thematic Plenaries that addressed core dimensions of ESG transversality. Complementing these were five Thematic Panel Discussions, which facilitated deeper, solution-oriented deliberations and cross-sectoral insights on critical challenges and opportunities within the nexus framework.

In addition, the conference hosted seven parallel sessions, curated in collaboration with leading knowledge and institutional partners, including BBC Media Action, India Water Foundation, India Water Partnership, SM Sehgal Foundation, International Union for Conservation of Nature, International Commission on Irrigation and Drainage, and Wetlands International. These parallel sessions enabled focused discussions on specialised themes, encouraged multi-stakeholder participation, and showcased innovative practices, community-driven models, and evidence-based policy approaches.

Collectively, the conference structure fostered a balanced blend of strategic visioning and grounded dialogue, reinforcing the importance of transversality in addressing interconnected global challenges. The wide-ranging participation and multidimensional discussions underscored the growing consensus on the need for integrated, collaborative, and scalable solutions to achieve sustainable and resilient systems across water, energy, health, and environmental domains.


## OPENING MINISTERIAL PLENARY

Opening Ministerial Plenary of an International Conference on ESG Transversality for a sustainable water, energy, health and environment nexus under the aegis of Water Transversality Global Awards and Conclave 2026 set the tone for integrated, global action on the water–energy–health–environment nexus, with each speaker offering distinct but complementary perspectives: Dr. Arvind Kumar,

President, India Water Foundation framed the conference around ESG transversality, emphasizing that water, energy, health, and environment are deeply interconnected systems requiring integrated governance, responsible finance, and cross-sectoral collaboration. He highlighted India's ESG regulatory progress (including BRSR) and called for moving from dialogue to actionable, scalable solutions. Dr. Raj Bhushan Chaudhary, Hon'ble Minister of State, Ministry of Jal Shakti, Government of India underscored that sustainability must be embedded in governance through ESG frameworks, community participation, and integrated policy design. He highlighted flagship initiatives like Jal Jeevan Mission and reaffirmed India's commitment to inclusive, climate-resilient development aligned with Vasudhaiva Kutumbakam.


**His Holiness Sadhguru Jaggi Vasudev**, Spiritual Head, Isha Foundation stressed that planetary sustainability hinges on restoring soil health, advocating increased tree cover (minimum 40%), reduced meat consumption, and conscious lifestyles. He positioned soil regeneration as the foundation for water availability, air quality, and long-term ecological balance.


**Mr. Loïc Fauchon**, President, World Water Council described water as the "bloodstream of development," linking it to health, food, energy, and peace. He outlined a threefold global strategy preserve, reserve, serve and underscored India's emerging leadership role in global water diplomacy and sustainable water governance.


**Ms. Ulrike Kelm**, Deputy Executive Director, IWRA highlighted that water connects ecosystems, economies, and societies, calling for breaking silos through science-policy-practice integration. She emphasized global cooperation, knowledge-sharing, and collective action to address interconnected climate and water challenges. **Shri Yugal Kishore Joshi**, Programme Director, NITI Aayog reflected on India's shift from siloed policymaking to holistic, mission-driven approaches, citing initiatives like Swachh Bharat Mission and Jal Jeevan Mission as examples of transversality in practice. He stressed behavioral

change, public participation, and policy integration as key to sustainable outcomes. Ms. Shweta Tyagi, Chief Functionary, India Water Foundation concluded by acknowledging global participation and partnerships, noting the importance of hybrid engagement and collaborative efforts in advancing the conference's objectives.


Overall, the plenary reinforced that ESG-driven transversality, grounded in policy integration, ecological consciousness, and global cooperation, is essential to achieving sustainable and resilient development outcomes.

## THEMATIC PLENARY 1:

### ESG ALIGNED FINANCE & GOVERNANCE TO COMBAT GREENWASHING

Plenary 1 on "ESG Aligned Finance & Governance to Combat Greenwashing" during an International Conference on ESG Transversality for a sustainable water, energy, health and environment nexus under the aegis of Water Transversality Global Awards and Conclave 2026 organised by India Water Foundation delivered a sharp call to move from rhetoric to real impact. Dr. Satya Tripathi, Secretary General, GASP, set the tone: "Changing finance is no good unless you can finance change." Dr. Nagesh Kumar, Director, ISID, noted that "ESG reporting is nudging companies to change behavior," with rising net-zero commitments. Ms. Bharti Birla, Enterprise Development Specialist, ILO, warned that "greenwashing can become social washing if workers and MSMEs are excluded." From industry, Mr. Saumitra Srivastava, Director (Marketing), IOCL, emphasized: "Sustainability is not a wish list—it is a work-to-do list." Mr. Pankaj Sharma, Senior Consultant, India Water Foundation & Director, Green Wattage, highlighted that "greenwashing is a capital allocation problem, not just communication." Dr. Priyadarshi Das, Associate Professor, RIS, reinforced that "ESG must be a strategy, not a compliance burden." The session collectively reinforced a critical insight: water, energy, health, and environment are deeply interconnected systems, and ignoring this nexus risks fragmented policies and missed opportunities. The way forward is clear—ESG must evolve from storytelling to substance, from compliance to strategy, and from isolated efforts to integrated, measurable, and inclusive transformation.

## THEMATIC SESSION 1:

### ESG ALIGNED FINANCE & GOVERNANCE TO COMBAT GREENWASHING

Panel Discussion 1 on "ESG Aligned Finance & Governance to Combat Greenwashing" during an International Conference on ESG Transversality for a sustainable water, energy, health and environment nexus under the aegis of Water Transversality Global Awards and Conclave 2026 organised by India Water Foundation highlighted that ESG reporting, though still in its early stages, is rapidly maturing and playing a critical role in shaping corporate behaviour. It was moderated by Dr. Nagesh Kumar, Director, ISID. Ms. Sarika Gosain, Partner & Leader – ESG & Sustainability, Pierag Consulting, emphasized that "ESG assurance today is where financial auditing was 30 years ago," pointing to challenges like fragmented data, lack of ownership, and weak value chain visibility, while stressing the need for integration of financial and non-financial data. Mr. Ranjeet Pandey, Chairman, ESG & Sustainability Board, ICSI, underlined that "decoding ESG at the organizational level is the first step," highlighting the importance of policy alignment, stakeholder engagement, and transparent reporting to avoid greenwashing.

From a finance perspective, Mr. Sanmit Ahuja, Director, CETFI, delivered a reality check: "$11.4 trillion is needed annually to address climate change, but climate is still not an investable asset class," stressing the need for scale, market-making mechanisms, and stronger links to global capital pools like pension funds. Ms. Surabhi Gupta, Chief General Manager, SEBI, shared regulatory insights, noting that "standardization through BRSR and XBRL is improving transparency, but sector-specific frameworks and stronger assurance mechanisms are the next step."

Adding a global dimension, Dr. Rajan Sudesh Ratna, Former Deputy Head, UNESCAP, highlighted that "ESG and SDGs are deeply interconnected, and solutions like crop residue management require integrated approaches combining policy, finance, and technology."

The session concluded with a clear message: combating greenwashing requires robust data systems, accountable governance, innovative financing, and global collaboration only then can ESG move from compliance to real impact.

## SPECIAL ADDRESS BY SHRI HARSH MALHOTRA, MINISTER OF STATE, MINISTRY OF CORPORATE AFFAIRS, MINISTRY OF ROAD TRANSPORT AND HIGHWAYS

Appreciating the efforts of India Water Foundation and Dr Arvind Kumar's leadership for convening a platform that addresses interconnected global challenges. Shri Harsh Malhotra, Minister of State, Ministry of Corporate Affairs and Ministry of Road Transport & Highways, Government of India emphasized that "whether it is environmental stress, water scarcity, energy insecurity, or public health emergencies, solutions cannot emerge unless these challenges are addressed together," commending the conclave's transversal approach.


Delivering a compelling Special Address at the 2nd Edition of the Water Transversality Global Awards & Conclave 2026 he strongly reaffirmed that true sustainability lies in integrating water, energy, health, and environment into one cohesive framework.

## CEOS LEADERSHIP DIALOGUE

The CEOs Leadership Dialogue during an International Conference on ESG Transversality for a sustainable water energy health and environment nexus at the Water Transversality Global Awards & Conclave 2026, moderated by Dr. Rajan Sudesh Ratna, Former Deputy Head, UNESCAP, brought forward insightful reflections on strategic resilience, leadership challenges, and the evolving role of ESG in business transformation. Mrs. Pratibha Pandya, Founder, Dian Foundation, emphasized that the real barrier to sustainability is a "scarcity mindset," noting that meaningful change requires a deeper personal connection with resources like water and the environment. Mr. Amit Kumar, Chairman, AI Engineering Services Limited, highlighted that ESG should move beyond reporting to become an operational necessity, while pointing out challenges such as high costs of sustainable transitions and fragmented global reporting standards. Ms. Anjali Makhija, CEO & Trustee, S M Sehgal Foundation, stressed the importance of grassroots impact, particularly through women-led

initiatives in water and climate-smart agriculture, underscoring that leadership-driven culture and community engagement are key to long-term sustainability. Mr. S.A. Verma, Executive Director – Environment, DMRC, showcased how visionary leadership enabled early adoption of sustainability practices, stating that "sustainability was not mandated—we chose to lead," with initiatives like solar energy adoption and carbon credit monetization.

The session concluded with a strong consensus that ESG must evolve from compliance to core strategy, supported by standardized frameworks, behavioural change, and scalable green investments to drive meaningful and lasting impact.

## THEMATIC PLENARY 2:

### NAVIGAING INTERDEPENDENCIES OF WATER ENERGY HEALTH AND ENVIRONMENT NEXUS


The Thematic Plenary 2 on "Navigating Interdependencies of Water–Energy–Health–Environment Nexus" during an International Conference on ESG Transversality for a sustainable water energy health and environment nexus at the Water Transversality Global Awards & Conclave 2026 emphasized that sustainability challenges must be addressed through integrated, cross-sectoral approaches rather than in silos. Mr. Ravi Singh, Secretary General & CEO, WWF India, highlighted the need for landscape-level strategies, basin-based water management, and nature-based solutions, along with integrating the "One Health" approach. Mr. Casper Mayland, Counsellor, Environment, Political and Economic Section, Royal Danish Embassy in New Delhi, pointed to inefficiencies in water-energy systems, identifying energy-intensive water management and high losses as key "low-hanging fruits," while advocating for efficiency, lifecycle planning, and public-private partnerships. Ms. Ulrike Kelm, Deputy Executive Director, International Water Resources Association, underscored the cascading impacts of water stress across energy, health, and environment, stressing global collaboration aligned with SDGs. Dr. Akash Srivastava, Additional Director, NCDC,

Ministry of Health & Family Welfare, highlighted India's inter-ministerial coordination, data integration, and climate-health initiatives. Dr. Paras Pujari, Chief Scientist & Head, Water Resources Group, CSIR-NEERI, demonstrated through field research how inefficient groundwater use leads to significant water and energy losses, with scalable solutions like drip irrigation requiring stronger stakeholder convergence.

The key takeaway: the nexus is well understood what is needed now is actionable, data-driven integration across policy, science, and practice to deliver measurable impact.

## THEMATIC SESSION 2:

### NAVIGATING INTERDEPENDENCIES OF WATER ENERGY HEALTH AND ENVIRONMENT NEXUS

The Thematic Session 2 on "Navigating Interdependencies of Water–Energy–Health–Environment Nexus," during an International Conference on ESG Transversality for a sustainable water, energy, health and environment nexus under the aegis of Water Transversality Global Awards and Conclave 2026 was moderated by Dr. Hitesh Vaidya, Chief Technical Advisor, India Water Foundation, emphasized that while climate risks, urban systems, and public health challenges are rapidly evolving, planning systems remain outdated and fragmented. Dr. Ritesh Kumar, Director, Wetlands International–South Asia, highlighted the critical role of ecosystems especially wetlands as natural infrastructure, stressing their integration into urban planning by recognizing their contribution to water security. Dr. Alok K. Sikka, Former Representative–India and Bangladesh, International Water Management Institute (IWMI), underscored the strong interlinkages between water, energy, and agriculture, noting that groundwater-dependent irrigation significantly drives energy consumption, and called for breaking sectoral silos through convergence, systems-based planning, and data-driven decision tools. Dr. Sutirtha Sahariah, Senior Vice President and Head of Communications, Sulabh International, brought a grassroots perspective, illustrating how fragmented planning directly impacts communities, particularly in sanitation, water access, and menstrual hygiene, and emphasized the role of data, AI, and community participation in bridging these gaps.

Concluding the session, the speakers collectively highlighted that the nexus is not merely conceptual but visible across ecosystems, agriculture, and communities, and that the way forward lies in coordinated, adaptive, and action-oriented strategies driven by joint planning, stakeholder collaboration, and community engagement.

## GLOBAL LEADERS DIALOGUE

The Global Leaders Dialogue, during an International Conference on ESG Transversality for a sustainable water, energy, health and environment nexus under the aegis of Water Transversality Global Awards and Conclave 2026 was moderated by Dr. Satya Tripathi, Secretary General, GASP brought together distinguished speakers who each highlighted critical dimensions of water, climate, and sustainability. Shri Anil Gupta, General Secretary, RSS, Delhi emphasized a civilizational perspective on ESG, underscoring the cultural ethos of environmental stewardship, social inclusivity, and governance rooted in traditional knowledge, while also sharing grassroots initiatives such as urban afforestation, revival of water bodies, and zero-waste colonies in Delhi. Dr. Eric Tardieu, Secretary General, INBO stressed the importance of Integrated Water Resources Management (IWRM) at the basin level, calling for stronger private sector engagement, shared data systems, and long-term planning to address water as a critical business and sustainability risk. Mr. Alex Simalabwi, Executive Secretary, & CEO, Global Water Partnership highlighted the global scale of the water crisis, pointing to rising demand, investment gaps, and the need for nexus-based approaches that integrate water with energy, food, and ecosystems, while emphasizing the growing leadership of the Global South. Ms. Ulrike Kelm, Deputy Executive Secretary, IWRA focused on the risks of greenwashing, advocating for stronger regulatory frameworks, standardized reporting, and evidence-based sustainability claims to ensure credibility and real impact. Mr. Sunny Pandya, Chief Advisor -National Strategy & State Leadership, India Water Foundation and also the managing director Dian group of companies showcased practical, technology-driven solutions being implemented across India, demonstrating how innovations in water and wastewater management can significantly reduce energy use, improve efficiency, and deliver measurable sustainability outcomes. Dr. Ash Pachauri, Co-founder and Director, POP Movement brought a human-centric perspective, emphasizing climate justice, community-led

action, and the urgent need to address interconnected challenges such as water scarcity, health risks, migration, and conflict through inclusive and youth-driven approaches.

Key takeaway: the dialogue reinforced that while the interlinkages between water, climate, and development are well understood, the priority now is implementation—driven by integrated governance, credible frameworks, technological innovation, and inclusive partnerships to achieve scalable and lasting impact.

## INAUGURAL SESSION AND LEADERSHIP RECOGNITION

At the inaugural session of the Second Water Transversality Global Awards & Conclave 2026, the Chef Guest Honorable Speaker of the Lok Sabha, Shri Om Birla, and dignitaries including Dr. Satya Tripathi, Secretary General, Global Alliance for Sustainable Planet and Dr. Arvind Kumar, President India Water Foundation gathered to emphasize the importance of integrated sustainability across water, energy, health, and environment sectors. The event featured ceremonial lamp lighting, keynote addresses, a book and special cover release, and an extensive awards ceremony recognizing leaders and innovators in water and sustainability. In his address, Shri Om Birla stressed that sustainable and inclusive development cannot be achieved through isolated sectoral efforts; instead, water, energy, environment, and public health must be addressed as an interconnected system. He highlighted that these challenges are global in nature and require collective international cooperation alongside strong public participation at all levels from local communities to national governance. He further underscored India's efforts in water conservation, clean energy, and climate action, emphasizing that behavioral change, sustainable lifestyles, and people's participation are critical to ensuring long-term environmental sustainability and effective policy outcomes.



Following the inauguration ceremony, the Water Transversality Global Awards felicitation honoured outstanding leadership and contributions across governance, policy, and sustainability domains. Among the prominent awardees, Shri Conrad K Sangma, Chief Minister of Meghalaya and Shri Devendra Fadnavis, Chief Minister of Maharashtra were recognised for their contributions to good governance. Shri Harsh Sanghavi, Deputy Chief Minister, Gujarat was conferred the Guardian of Youth Award for his leadership and engagement with youth-driven initiatives.

The conclave also conferred Lifetime Achievement Awards upon globally renowned experts for their enduring contributions to water governance and sustainability. These included Dr Rabi Mohtar, Governor- World Water Council Director, Water Security, Texas Water Resources Institute Texas A&M University; Dr Alain Meyssonnier, President-Mediterranean Water Institute Governor- World Water Council; and Dr Eric Tardieu, Director General-International Office of Water Secretary General- International Network of Basin Organisations Vice President- World Water Council.

In addition, Leader's Awards were presented to distinguished public officials and practitioners, including Shri Amit Kumar Ghosh, Additional Chief Secretary, Health & Family Welfare, Government of Uttar Pradesh, and Shri Yugal Kishore Joshi, Programme Director at NITI Aayog, among others, recognising their impactful contributions to governance, public service, and sectoral innovation.

The inaugural session and awards ceremony together highlighted the significance of leadership, collaboration, and integrated thinking in addressing complex global challenges. By recognising excellence across sectors and geographies, the conclave reinforced its commitment to fostering transformative action and advancing the global sustainability agenda.

## THEMATIC PLENARY 3:

### CROSS SECTORAL WATER TRANSVERSALITY FOR ACCELERATING NET ZERO

The Thematic Plenary 3 on "Cross-Sectoral Water Transversality for Accelerating Net Zero" during an International Conference on ESG Transversality for a sustainable water, energy, health and environment nexus under the aegis of Water Transversality Global Awards and Conclave 2026 underscored that achieving climate goals requires actionable, ground-level integration of water, energy, and governance systems. Mr. Pradeep S. Mehta, Secretary General, CUTS International, emphasized the urgent need to move beyond dialogue to implementation, highlighting grassroots interventions such as water harvesting, waste management, and community-led initiatives, while stressing that even small actions can collectively drive systemic impact.

Mr. Abhishek Gupta, Head – International Appliances, Rooftop Solar & PE & A, Energy Efficiency Services Limited, illustrated how large-scale, market-driven interventions—from LED adoption (UJALA), rooftop solar (PM Surya Ghar), and smart meters to EV ecosystem development—have transformed India's energy landscape, while also integrating water efficiency through energy audits and municipal pump optimization, demonstrating the viability of scalable, investment-grade models.

Dr. Nidhi Pundhir, Vice President – Global CSR; Director, HCL Foundation, highlighted the critical role of data-driven, measurable CSR frameworks, detailing how technology-enabled mapping and rejuvenation of water bodies, coupled with community-centric "commons" governance and PPPP (public-private-people partnerships), have enabled large-scale water conservation and ESG-linked outcomes.

Dr. Debajit Palit, Head – Centre for Climate Change & Energy Transition, Chintan Research Foundation, brought in the macro perspective, linking India's water stress and climate vulnerability with energy transitions, noting that decarbonization pathways such as renewable energy can significantly reduce water intensity, while integrated models like Gujarat's Jyotigram scheme demonstrate how aligning water and energy systems can yield both economic and sustainability gains.

The key takeaway: while successful models and technologies already exist, the real challenge lies in scaling them through robust governance, cross-sectoral convergence, and accountability to accelerate progress toward net zero.

## THEMATIC SESSION 3:

### CROSS SECTORAL WATER TRANSVERSALITY FOR ACCELERATING NET ZERO

The Thematic Session 3 on "Cross-Sectoral Water Transversality for Accelerating Net Zero" during an International Conference on ESG Transversality for a sustainable water energy health and environment nexus at the Water Transversality Global Awards & Conclave 2026 highlighted that achieving net zero hinges on integrated, cross-sectoral approaches grounded in strong governance, innovation, and community participation. Mr. Pradeep S. Mehta, Secretary General, CUTS International (Moderator), emphasized the need to address governance deficits and scale grassroots successes. Mr. M. P. Singh, Chief Advisor – India Water Foundation; Former Chief of Development Operations, JICA India, stressed rigorous project planning, decentralized decision-making, assured financing, and sustainability monitoring. Ms. Neha Gupta, Founder, IFBEC, underscored the urgent need for circularity and recycling infrastructure in the resource-intensive textile sector. Prof. Kshemendra K. Upadhyay, Professor and Chairperson, Centre for Sustainability & CSR, BIMTECH, highlighted the effectiveness of multi-stakeholder, community-driven models like "Apni Yojana." Prof. Medha Bisht, Associate Professor, South Asian University, called for bridging local realities with global frameworks through systems thinking and knowledge leadership.


Key takeaway: accelerating net zero will require scaling proven models, strengthening governance, and aligning grassroots action with global sustainability frameworks for measurable impact.

## THEMATIC PLENARY 4:

### GREENING INDUSTRY, FUELLING GROWTH VIA ESG PARTNERSHIPS FOR SUSTAINABILITY

The Plenary Session 4 on "Greening Industry, Fuelling Growth via ESG Partnerships for Sustainability" during an International Conference on ESG Transversality for a sustainable water, energy, health and environment nexus under the aegis of Water Transversality Global Awards and Conclave 2026 underscored that sustainable industrial growth is no longer a trade-off but a strategic pathway driven by partnerships, innovation, and systems thinking. Shri Sampath Kumar, CEO, Meghalaya Basin Development Authority (MBDA), Government of Meghalaya (Chair), highlighted how leveraging natural and social capital, community-led governance, and global partnerships can deliver measurable outcomes, including carbon credit models and improved health indicators. Mr. Levente Kardos, Commercial and Economic Counsellor, Embassy of Hungary, New Delhi, emphasized ESG as a growth multiplier, showcasing Europe's regulatory frameworks and India–Hungary collaboration opportunities in clean technologies, water management, and sustainable manufacturing. Mr. Pankaj Sharma, Senior Consultant, India Water Foundation, stressed the shift from ESG as compliance to ESG as a core business strategy, driven by resource efficiency, innovation, and collaborative industrial ecosystems. Prof. Rabi Mohtar, Governor, World Water Council; Director, Water Security, Texas Water Resources Institute, Texas A&M University, highlighted the nexus approach as a tool to manage interdependencies across water, energy, food, and health systems through integrated, data-driven interventions. Dr. Arvind Kumar, President, India Water Foundation, reinforced the need for cross-sectoral synergy, combining finance, technology, policy, and community participation through both top-down and bottom-up approaches.


Key takeaway: greening industry requires integrated ESG partnerships, systems-based governance, and multi-stakeholder collaboration to drive resilient, competitive, and sustainable economic growth.

## THEMATIC SESSION 4:

### GREENING INDUSTRY, FUELLING GROWTH VIA ESG PARTNERSHIPS FOR SUSTAINABILITY.

The Thematic Session 4 on "Greening Industry, Fuelling Growth via ESG Partnerships for Sustainability" during an International Conference on ESG Transversality for a sustainable water, energy, health and environment nexus under the aegis of Water Transversality Global Awards and Conclave 2026 emphasized that transitioning ESG from a compliance obligation to a core driver of industrial competitiveness hinges on robust capacity building, system-driven governance, and cross-sectoral collaboration. Mr. M. P. Singh, Chief Advisor, India Water Foundation underscored that sustainable development requires institutionalized capacity building frameworks focused on technology, finance, and governance that are process-oriented rather than individual-dependent. Mr. Pankaj Sharma, Senior Consultant, India Water foundation (Moderator) highlighted the need to embed ESG into strategic decision-making, where partnerships across industry, policy, and technology ecosystems enable resource efficiency, innovation, and circular industrial models. Mr. Ved Prakash Prajapati, Executive Director, AIESL stressed the importance of organizational culture, accountability, and system-based approaches, illustrating how proactive, predictive frameworks and collaborative waste management solutions can enhance efficiency and reduce costs. Dr. Swati Verma, Assistant Professor, ISID emphasized the critical role of credible, transparent data and standardized ESG reporting (such as BRSR) as the foundation for meaningful collaboration and informed decision-making. Dr. Rishi Kumar, Vice President, IORA Ecological Solutions highlighted ESG as a risk-mitigation and innovation framework, pointing to opportunities in carbon markets, biodiversity conservation, and climate resilience, enabled through multi-stakeholder partnerships spanning policy, finance, and community engagement.


The key takeaway: achieving sustainable industrial growth requires shifting from fragmented, compliance-driven ESG practices to integrated, data-driven, and collaboration-led systems that embed sustainability into the core architecture of business strategy and long-term value creation.

## THEMATIC PLENARY 5:

### GLOBAL COOPERATION FOR PLANETARY HEALTH DIPLOMACY

Plenary 5 on Global Cooperation for Planetary Health Diplomacy, during an International Conference on ESG Transversality for a sustainable water, energy, health and environment nexus under the aegis of Water Transversality Global Awards and Conclave 2026 was chaired by Mr. Amit Ghosh, Additional Chief Secretary, Government of Uttar Pradesh, underscored the urgent need to strengthen global, cross-sectoral collaboration to address interconnected challenges across water, health, energy, and environment systems. Opening the discussion, Dr. Virender Sharma, member technical, Commission for Air Quality Management, Government of India emphasized that environmental health crises particularly air pollution require a shift from fragmented governance to coordinated "airshed-based" approaches, combining real-time data, public health integration, and year-round mitigation with actionable, outcome-driven diplomacy. International perspectives enriched the dialogue, with Mr. Alain Meyssonier, President- Mediterranean Water Institute and Governor-World Water Council highlighting the Mediterranean as a model for integrated water resource management and transboundary cooperation rooted in ESG principles, while Ms Ulrike Kelm, Deputy Executive Director, IWRA stressed breaking institutional silos and strengthening science-policy interfaces for effective planetary governance. Representing UN-Habitat, Mr. Roi Chiti, Regional Coordinator & Representative, Pacific Island States, India, Sri Lanka, & Maldives drew attention to the global water-health crisis, urban inequities, and economic costs of inaction, positioning water access as both a human right and a driver of economic resilience. Complementing this, Ms. Sonja Koeppel, Secretary, Convention on the Protection on the and use ofTrans Boundary Water Courses and International Lakes Environment Division, United Nations Economic Commission for Europe highlighted the critical role of transboundary water cooperation frameworks, such as

the UN Water Convention, in fostering peace, climate adaptation, and sustainable resource governance.

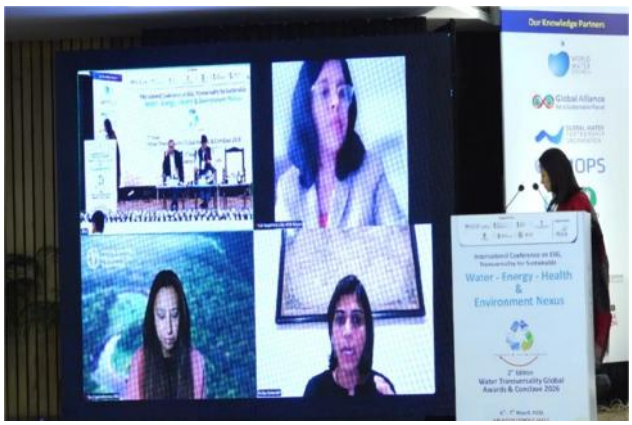
The session concluded with a strong consensus that planetary health diplomacy must move beyond dialogue to implementation leveraging integrated policies, inclusive partnerships, data-driven decision-making, and global cooperation mechanisms to deliver equitable, scalable, and sustainable outcomes.

## THEMATIC SESSION 5:

### GLOBAL COOPERATION FOR PLANETARY HEALTH DIPLOMACY

Thematic Session 5 on Global Cooperation for Planetary Health Diplomacy, held during the International Conference on ESG Transversality for a sustainable water–energy–health–environment nexus under the aegis of the Water Transversality Global Awards and Conclave 2026, was moderated by Ms. Varinder Gambhir, Country Director, BBC Media Action and focused on advancing integrated, implementation-driven global cooperation.

Mr. Vinod Mishra, Country Director, UNOPS emphasized the need to shift from “diplomacy of negotiation” to “diplomacy of delivery,” highlighting governance reform, resilient systems, and scalable solutions. Dr. Manoj Nesari, Advisor, Ministry of Ayush, Government of India underscored the lack of a binding global framework linking climate, biodiversity, and health, while advocating for the integration of traditional knowledge and community-based approaches. Ms. Sara Casillas Ramirez, Forestry Officer, FAO stressed the interconnectedness of ecosystems and public health, calling for aligned, cross-sectoral policies. Ms. Ambika Vishwanath, Co-founder, Kubernein Initiative highlighted persistent governance and knowledge silos, urging more integrated and adaptive global systems. Prof. Nidhi Nagabathla, Professor, UN University, Belgium called for a unified planetary health agenda supported by common metrics, science-policy interfaces, and community co-creation.



The session concluded that planetary health diplomacy must move from dialogue to action through integrated policies, aligned frameworks, and inclusive, data-driven collaboration to deliver scalable and sustainable outcomes.

## PARALLEL SESSION:

### "TECHNOLOGICAL INNOVATIONS FOR NEXUS OPTIMIZATION"

The side event on "Technological Innovations for Nexus Optimization", curated by ICID during an International Conference on ESG Transversality for a sustainable water, energy, health and environment nexus held under the aegis of Water Transversality Global Awards and Conclave 2026 was moderated by Mr. Rishi Srivastava, Director, ICID, brought together leading experts to explore how advanced technologies are transforming the water–energy–food–climate nexus through data-driven decision-making and systems optimization.

Dr. Alok K. Sikka, Emeritus Scientist, IWMI, delivered a deeply insightful presentation on nexus optimization and integrated decision-support systems, highlighting the urgent need to move beyond siloed sectoral planning toward a systems-based approach. Following this, Dr. Chandan Kumar Thakur, Senior Vice President of Marketing, Vassar Labs, presented a compelling technology-led perspective on AI-driven innovations for water, agriculture, urban systems, and disaster resilience. Through real-world examples from multiple Indian states and international deployments, he showcased how AI, IoT, GIS, satellite intelligence, predictive analytics, and digital public infrastructure are being used to manage water systems from reservoirs to farms and cities.


The session underscored that the future of resilient development lies in technology-enabled nexus governance, where AI, modelling frameworks, digital twins, and predictive systems work together to ensure sustainable and climate-resilient management of critical natural resources.

## “WETLANDS AS NEXUS INFRASTRUCTURE: INTEGRATING WATER ENERGY HEALTH AND ENVIRONMENT FOR RESILIENT FUTURES”

At the side event on “Wetlands as Nexus Infrastructure: Integrating Water, Energy, Health and Environment for Resilient Futures,” curated by Wetlands International- South Asia during an International Conference on ESG Transversality for a sustainable water, energy, health and environment nexus held under the aegis of Water Transversality Global Awards and Conclave 2026 was moderated by Mr. Ravi Prakash, Wetland Specialist, Wetlands International South Asia. The session highlighted how wetlands must no longer be viewed as isolated ecological spaces, but as central systems supporting the interconnected nexus of water security, energy efficiency, public health, biodiversity conservation and climate adaptation.

Ms. Archana Chatterjee, Program Manager, IUCN, stressed that one of the foremost governance challenges is the failure to integrate wetlands within river basin planning. She pointed out that wetlands are often viewed as separate from river systems, despite being integral to hydrological continuity and ecological health. Speaking from a river basin governance perspective, Mr. Suresh Babu, Director – River, Wetland and Water Policy, WWF, emphasized the urgent need for institutional mechanisms that transcend administrative boundaries and instead align with ecological and hydrological realities.


Adding a systems perspective, Dr. Gopal Kumar, Country Representative, IWMI, argued strongly for water circularity, positioning wetlands as central to decentralized wastewater reuse and treatment systems, particularly in rural India where drainage and waterlogging issues are becoming increasingly severe.

The deliberations offered valuable policy insights and practical pathways for integrating wetlands into basin planning, urban water management, rural development and conservation strategies marking an important step toward resilient and nature-positive futures.

## WATER TRANSVERSALITY IN ACTION- FOR ENERGY, ENVIRONMENT AND HEALTH NEXUS

At the side event on "Water Transversality in Action: For Energy, Environment and Health Nexus," held during the International Conference on ESG Transversality for a Sustainable Water, Energy, Health and Environment Nexus under the aegis of the Water Transversality Global Awards and Conclave 2026, organised jointly by India Water Foundation and India Water Partnership. The session brought together researchers, technologists, policy thinkers, and media professionals to explore integrated pathways for resilient futures. Moderated by Mr. Ashish Sharma, Junior Researcher, India Water Foundation, and chaired by Dr. Veena Khanduri, Country Director, India Water Partnership, the discussion underscored the urgent need to move beyond siloed governance and adopt a systems-based approach to the interconnected water, energy, health, and environment nexus.

Ms. Kavita Prasad, Senior Consultant, India Water Foundation, introduced HydroNet Delhi, an AI-driven framework designed to forecast floods, energy vulnerabilities, and health risks across the urban landscape, emphasizing explainable and ethically governed AI for climate resilience. Mr. Anoop Dongre and Mr. Gopal Prasad Patel from IIT-Delhi highlighted the deep interlinkages between groundwater depletion, irrigation stress, and energy demand, demonstrating how satellite-based soil moisture analytics, remote sensing, and GIS tools can support sustainable groundwater governance and agricultural water use.


Bringing an applied technology perspective, Ms. Hiranya Tallam, Business Development Lead, Real Tech GPS Systems, showcased IoT-enabled and solar-powered smart water infrastructure solutions that significantly reduced water losses, energy consumption, and public health risks in rural water supply systems. From the policy and diplomacy lens, Mr. Parth Bhatt emphasized planetary health diplomacy, systems thinking, and anticipatory governance as essential frameworks for addressing cascading climate, biodiversity, and water risks across sectors and borders. Concluding the deliberations, Ms. Shreya Pathak highlighted the critical role of public consciousness, environmental journalism, and grassroots community participation in translating policy intent into meaningful action.

The session offered valuable research insights, technological innovations, and policy pathways, reinforcing that sustainable futures depend on integrated, data-driven, and people-centric approaches to the water-energy-health-environment nexus.

## INTEGRATED PATHWAYS: OPERATIONALISING THE WATER–ENERGY–HEALTH–ENVIRONMENT NEXUS FOR RESILIENT FUTURES

The side event on "Integrated Pathways: Operationalising the Water–Energy–Health–Environment Nexus for Resilient Futures," curated by the S M Sehgal Foundation—Institutional Partner for the 2nd Edition of the Water Transversality Global Awards and Conclave 2026—brought together experts to deliberate on translating nexus thinking into actionable, community-centric solutions. Organised under the broader International Conference on ESG Transversality by the India Water Foundation, the session highlighted the urgency of integrated approaches to interconnected sustainability challenges.


Opening the session, Ms. Pooja O. Murada, Principal Lead (Outreach for Development), emphasized that climate change, resource scarcity, and environmental health risks are deeply interlinked and require coordinated, cross-sectoral responses. Moderated by Mr. Lalit Mohan Sharma, Advisor and water management expert, the discussion focused on moving the nexus approach from concept to practice. Mr. Depinder Kapur, Head – Climate Centre for Cities, National Institute of Urban Affairs, noted that infrastructure alone is insufficient without sustained behavioural change for long-term public health outcomes. Dr. Swayamprabha Das, Associate Vice President & Lead (Policy & Engagement), Development Alternatives, underscored the disproportionate impact of water and energy scarcity on women and girls, advocating for stronger grassroots representation in decision-making. Mr. Prabhjot Sodhi, Senior Programme Director, Centre for Environment Education, emphasized resource circularity and lifecycle thinking, while Mr. Chetan Aggarwal, Independent Forest and Environmental Services Analyst, highlighted the importance of biodiversity conservation through landscape-level planning and ecological zoning.

The session reinforced a shared message that resilient futures depend on integrating water, energy, health, and environmental priorities while strengthening community voices and inclusive governance mechanisms.

## “FROM BANKRUPTCY TO WATER RESILIENCE

At the 2nd Edition of the Water Transversality Global Awards and Conclave 2026, a compelling side event titled “From Bankruptcy to Water Resilience”, curated by BBC Media Action as the Knowledge Partner, brought into sharp focus the lived realities and urgent implications of “water bankruptcy.” Moderated by Ms. Soma Katiyar, Executive Creative Director, BBC Media Action, the session moved beyond statistics to humanize the crisis through powerful imagery, narratives, and experiential reflections. Panelists including Ms. Manjusha Manchala Founder, Urban Forge Labs, Mr. Debaranjan Pujahari, Partner - Agri Practice Area, Sattva Consulting, and Mr. Swapnil Chaturvedi, Director – Programmes, WaterAid India examined water scarcity across urban systems, agriculture, and vulnerable communities. Discussions highlighted how excessive groundwater extraction, misaligned cropping patterns, and weak economic incentives are accelerating water depletion, while marginalized populations face the harshest consequences from drying springs to complete disruption of traditional water access systems.


The session underscored that water bankruptcy is not merely a future risk but a present-day lived reality shaped by behavior, governance, and systemic inefficiencies. A key takeaway resonated strongly: building water resilience requires not just technological interventions, but a transformation in how societies perceive, value, and relate to water driven by storytelling, communication, and collective action.

## TOWARDS RESILIENT URBAN FUTURES: OPPORTUNITIES FOR FRESHWATER CONSERVATION IN INDIA THROUGH NATURE/ECOSYSTEM-BASED SOLUTIONS

At the side event titled “Towards Resilient Urban Futures: Opportunities for Freshwater Conservation in India through Nature/Ecosystem-based Solutions,” curated by the International Union for Conservation of Nature (IUCN) during the 2nd Edition of the Water Transversality Global Awards and Conclave 2026, a distinguished panel of experts came together to explore how nature-based solutions can transform urban water resilience in India.

Opening the session, Ms. Archana Chatterjee, Program Manager, IUCN set the context by underlining the urgency of integrating ecosystem-based approaches into urban planning to

address mounting freshwater stress. Mr Jaidev Joshi further highlighted IUCN's global and national efforts in advancing nature-positive urban development pathways.

Dr Mahreen Matto from (NIUA) emphasized the need for embedding water-sensitive urban design into policy frameworks, noting that cities must transition from extractive systems to regenerative ecosystems. Dr C. R. Babu, a leading voice in ecological restoration, stressed the importance of conserving urban biodiversity and restoring degraded ecosystems as foundational to long-term water security.


Bringing a programmatic perspective, Dr Uday Bhonde discussed how data-driven planning and institutional convergence are critical for scaling nature-based interventions across urban landscapes. Ms. Nidhi Batra from Agence Française de Développement (AFD) highlighted financing mechanisms and international collaboration as key enablers for mainstreaming blue-green infrastructure in Indian cities.

From a climate resilience standpoint, Dr Pushp Bajaj of CEEW underscored the need to align freshwater conservation strategies with broader climate adaptation goals, while Ms Yogita Lokhande from Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) emphasized capacity building, governance innovation, and community engagement as essential pillars for implementation.

The session collectively reinforced that resilient urban futures in India will hinge on integrating nature into infrastructure, restoring ecological systems such as wetlands and watersheds, and fostering cross-sectoral collaboration supported by robust policy, financing, and citizen participation frameworks.

# LEADERSHIP DIALOGUE 2 AND VALEDICTORY SESSION

The Leadership Dialogue 2 and Valedictory Session of an International Conference on ESG Transversality for a sustainable water, energy, health and environment nexus under the aegis of Water Transversality Global Awards and Conclave 2026 brought together diverse perspectives, with each speaker offering concise, action-oriented insights: **Dr. Arvind Kumar** President, India Water Foundation emphasized that the conclave's outcomes must transition from dialogue to sustained action through stronger multi-stakeholder partnerships across government, academia, industry, and civil society, while leveraging ESG governance and transversality for integrated solutions.



**Shri R. P. Singh**, National Spokesperson, BJP highlighted the intrinsic linkage between air, water, and earth through cultural and spiritual ethos, stressing that sustainable living requires behavioural change such as water conservation, reduced wastage, improved urban planning, and adoption of responsible consumption practices.


**Shri Rakesh Jain,** Akhil Bharatiya Paryavaran Sah Sanyojak, RSS drew attention to ecological degradation driven by deforestation, water mismanagement, and plastic pollution, advocating large-scale afforestation, water conservation (including check dams), and elimination of polythene through community-led initiatives.


**His Holiness Acharya Shri Lokesh Muni**, Founder, Ahimsa Vishwa Bharti provided a philosophical perspective rooted in Jain principles, emphasizing limited consumption, ethical living, and alignment of human desires with ecological limits, while underlining that both environmental and "inner" (mental/social) pollution must be addressed.

**Ms. Shweta Tyagi**, Chief Functionary, India Water Foundation delivered the vote of thanks, highlighting the scale and impact of the conclave and reaffirming its role as a platform for collaboration, policy dialogue, and advancing the water-energy-health-environment nexus through partnerships.


Overall, the session synthesized policy, practical, and philosophical dimensions—calling for a shift from awareness to implementation, driven by collaboration, lifestyle change, and integrated governance.


## FIRESIDE CHAT

At the fireside chat during an International Conference on ESG Transversality for a sustainable water, energy, health and environment nexus under the aegis of Water Transversality Global Awards and Conclave 2026 organised by India Water Foundation moderated by **Mr. Ronak Patel**, Journalist and Editor, Asmita Tv, ABP Network, distinguished speakers shared insights on governance, sustainability, health, and youth engagement within the water–energy–environment nexus.

**Shri Sampath Kumar**, CEO, Meghalaya Basin Development Authority, Government of Meghalaya highlighted Meghalaya's model of integrated environmental governance. He emphasized the role of the MBDA in building institutional capacity, fostering innovation, and

linking water, environment, and livelihoods. Initiatives such as Payment for Ecosystem Services (PES), spring rejuvenation, and community-led interventions have strengthened water security while incentivizing forest conservation. The state's policies on water and climate emergency reflect a proactive, ecosystem-based development approach.

**Shri Amit Ghosh**, Additional Chief Secretary, Government of Uttar Pradesh focused on strengthening health infrastructure and education in Uttar Pradesh. He noted the rapid expansion of medical colleges through public-private partnerships, increased healthcare capacity, and efforts to double emergency and trauma care facilities. The state is integrating health awareness into school curricula and implementing large-scale vaccination drives, demonstrating a strong linkage between public health systems and education.


**Dr Satya Tripathi**, Secretary General, Global Alliance for Sustainable Planet underscored the transformative role of youth and community-led movements in sustainability. He cited Andhra Pradesh's large-scale natural farming initiative as a global model, showcasing how ecological practices can enhance farmer incomes, improve yields, and reduce emissions. He also highlighted the potential of carbon markets and stressed the importance of value-driven leadership and grassroots participation in achieving climate goals.

The discussion reinforced that sustainable development requires strong institutions, community participation, youth leadership, and integrated policy frameworks that align environmental conservation with economic and social priorities.

## CONCLUSION

The conclave reinforced a clear and urgent message: while the science, frameworks, and solutions for sustainable development are well established, the defining challenge of our time lies in execution at scale. Transversality must now move beyond a conceptual framework to become an operational reality anchored in integrated governance, credible finance, technological innovation, and inclusive participation.

The way forward demands a paradigm shift from fragmented interventions to systems thinking, from compliance to commitment, and from dialogue to decisive action. By fostering collaboration across sectors and geographies, and by placing people and ecosystems at the centre of development, the global community can build resilient, equitable, and sustainable futures.

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## OUR INSTITUTIONAL PARTNER

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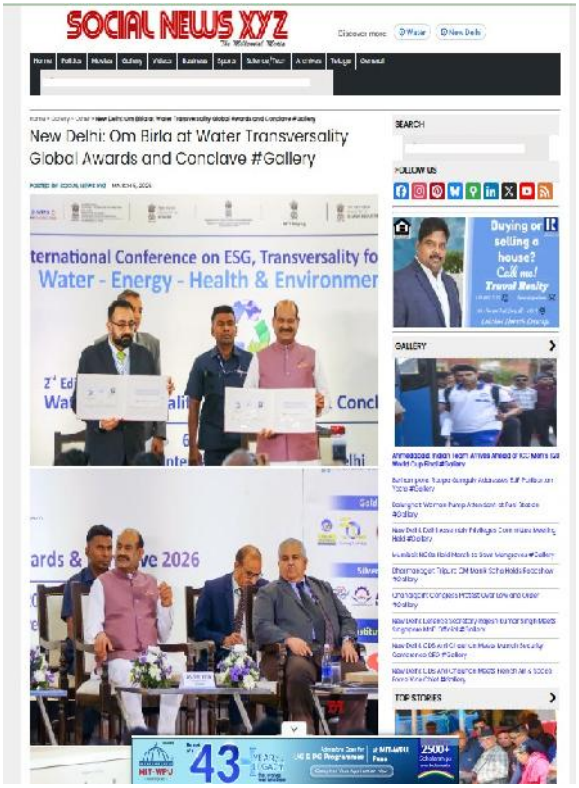


## INTERVIEW

# MS. HELENA THYBELL

### Executive Director, Stockholm International Water Institute (SIWI)

Ms.Helena Thybell, Executive Director, Stockholm International Water Institute (SIWI). She holds a bachelor's degree in social science from Lund University and has pursued studies in leadership, sustainability, and strategic development. From 2019 to 2023, she served as CEO of Save the Children Sweden, leading major organizational transformation and global strategy initiatives. Previously, she was Head of HR and People and Culture at H&M Group and CEO of both the H&M Foundation and the Swedish Postcode Foundation. With experience in the Swedish Red Cross and Save the Children International, she has championed social innovation, gender equality, and sustainable development worldwide.

*Excerpts from an interview of **Ms. Helena Thybell,** Executive Director, Stockholm International Water Institute (SIWI) by **Dr. Arvind Kumar**, Editor, Focus Global Reporter*

**EDITOR: Can you tell us a little about yourself, and how does it feel in your new role as Executive Director at SIWI?**

**MS. THYBELL**: It's an enormous privilege to lead SIWI at this moment in time. The organization has such a respected legacy and a remarkable team of experts who are genuinely driven by impact. Joining SIWI has confirmed for me how powerful it is when knowledge, credibility, and collaboration come together in one place. You feel the collective purpose immediately — and that's both humbling and inspiring.

My own background spans both the private and non-profit sectors. I spent many years at H&M Group as Head of HR and People & Culture, helping to shape global leadership and organizational transformation. More recently, I served as CEO of Save the Children Sweden, where we worked to ensure that children's rights were respected and protected in the most complex humanitarian and development contexts. These experiences have taught me the importance of purpose-driven leadership, partnership, and the ability to translate vision into measurable change.

At SIWI, my focus is on leading the organization through its next phase of renewal and focus. We're sharpening our strategy to make sure that our knowledge and convening power translate directly into improved water governance and resilience around the world. It's an exciting time — not only for SIWI, but for the water community as a whole — as water is finally being recognized as the connector across climate, nature, and development.

**EDITOR: As SIWI positions itself as a leading expert in creating spaces and facilitating critical collaborations for improved water governance, what are the key partnerships and collaborative frameworks you're prioritizing for 2025-2030?**

**MS. THYBELL:** Partnership is at the core of SIWI's identity — it's how we create real impact. Our two flagship frameworks, World Water Week and the Water for Climate Pavilion at the UN climate COPs, are central to that effort. They are where science meets policy, and where dialogue turns into collaboration and measurable action.

World Water Week has long been a world leading conference on water and cross-sectoral collaboration. In the coming years, we will strengthen its role as a bridge between global processes, including the Rio Conventions, and the implementation of national and local solutions. We're building stronger year-round engagement around the Week, connecting outcomes to climate, biodiversity, and desertification agendas so that water is recognized as a systems connector across all.

At the same time, the Water for Climate Pavilion at the COPs has become an increasingly important space for collaboration. At COP30 in Belém, the Pavilion will bring together governments, development banks, civil society, and the private sector to anchor water within climate action — from finance to adaptation. Both frameworks are underpinned by long-term partnerships with organizations such as UN-Water, AGWA, the European Investment Bank, and numerous regional networks.

In essence, SIWI acts as a bridge — connecting research and innovation with governance and implementation. By aligning our work across World Water Week, the COPs, and other global milestones, we ensure that water is not just part of the conversation but central to the solutions.

**EDITOR: World Water Week 2025 focused on "Water for Climate Action." How is SIWI translating this theme into concrete policy recommendations and actionable solutions for governments and international organizations working on Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs)?**

**MS. THYBELL:** The 2025 theme, Water for Climate Action, captures the growing realization that climate resilience begins and ends with water. People experience climate change through floods, droughts, and the loss of water security, yet adaptation planning often overlooks it. SIWI is working to change that by helping countries and partners systematically integrate water into their climate commitments and plans.

Through our policy and research work, we provide evidence-based guidance that supports governments in embedding water across their Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs). This includes tools for governance reform, financing strategies for nature-based solutions, and frameworks for multi-sector coordination. Our capacity development programmes also strengthen institutional readiness, ensuring that commitments made at the global level can be implemented locally.

At the same time, we use platforms like World Water Week and the Water for Climate Pavilion to translate knowledge into policy insights. For instance, at COP30, we are calling for the operationalization of the UAE–Belém Framework for Global Climate Resilience, which would set water-related adaptation targets and indicators. By aligning our convening work with policy processes, we help create a feedback loop, from science and innovation to national policy and back again.

Our goal is not just to produce recommendations but to co-create actionable solutions that countries can adopt and scale. In that sense, SIWI's work is about turning dialogue into delivery.

**EDITOR: The Water for Climate Pavilion, coordinated by SIWI, has become a significant platform at COP conferences. What specific outcomes and commitments are you targeting for COP30 in Belém?**

**MS. THYBELL:** COP30 is a milestone, not only for climate negotiations but for the integration of water as the foundation of resilience. SIWI's coordination of the Water for Climate Pavilion,

in partnership with leading organizations and networks, is about creating a dedicated space for solutions, partnerships, and accountability.

This year, our main goal is to ensure that water becomes fully embedded in the implementation of the Paris Agreement. Specifically, we are calling for three outcomes. First, the adoption and operationalization of global adaptation targets for water under the Global Goal on Adaptation, including clear indicators and measurable progress tracking. Second, recognition of water's central role in the new global climate finance goal — ensuring that funding for adaptation, ecosystem protection, and loss-and-damage avoidance directly supports water-related interventions. Third, stronger delivery mechanisms that connect finance to local action, empowering communities and Indigenous Peoples to lead adaptation where it matters most.

We're also emphasizing equity and inclusion. No climate transition can be just if communities are left without safe water. Through the Pavilion, SIWI and its partners are showcasing how justice and resilience are interconnected, from women's leadership in WASH and ecosystem restoration to inclusive, nature-based solutions.

Our ambition is that COP30 in Belém will move from words to implementation.

**EDITOR: India Water Foundation emphasizes localizing SDGs and working at grassroots levels, particularly with marginalized communities. How can SIWI's water governance expertise support South Asian countries, especially India, in implementing community-driven water solutions that align with climate adaptation strategies?**

**MS. THYBELL**: The challenges facing South Asia, from rapid urbanization to water scarcity and climate extremes, highlight why governance and community engagement must go hand in hand. SIWI's role is to help connect the dots between local innovation and national policy, ensuring that community-led water management becomes central to adaptation planning.

Our expertise lies in building governance capacity: strengthening institutions, facilitating inclusive dialogue, and co-creating tools that help decision-makers translate global frameworks into local realities. We work with partners to develop and share governance models that integrate human rights, gender equality, and transparency into water management.

In India and across the region, SIWI can support initiatives that enhance the enabling environment for community action. This includes designing policy frameworks that recognize local and Indigenous knowledge, strengthening the role of women and youth in decision-making, and developing financial mechanisms that allow local actors to access adaptation funding directly.

The goal is not to import solutions but to help scale what works, connecting bottom-up approaches with the national commitments under the Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs). In that sense, SIWI acts as both a knowledge partner and a bridge-builder, ensuring that community-driven water governance becomes a foundation for climate resilience across South Asia.

**EDITOR: What role does SIWI see in supporting transboundary water cooperation through initiatives like the Shared Waters Partnership?**

**MS. THYBELL:** Transboundary cooperation is at the heart of SIWI's mission. Through the Shared Waters Partnership, we help countries and regions transform potential water-related tensions into opportunities for collaboration and peacebuilding. Many of the world's river basins cross political boundaries, and as climate change increases variability and pressure, cooperation becomes not only beneficial but essential for stability.

This year, SIWI also supports the launch of the Routledge Handbook of Water Diplomacy, a global collaboration co-edited by SIWI's Dr. Martina Klimes with partners from Tufts University, UNC, and UNESCO. The handbook offers concrete, practice-oriented tools for turning water from a source of conflict into a catalyst for peace and resilience. It builds directly on lessons from the Shared Waters Partnership and other SIWI initiatives, emphasizing that trust, inclusivity, and dialogue are as vital as data and infrastructure.

Our experience shows that when water governance is transparent, participatory, and equitable, it builds the trust that underpins peace, economic development, and resilience, exactly the vision the Handbook and SIWI both promote.

**EDITOR: How is SIWI working to ensure that Indigenous Peoples, youth, and marginalized communities have formal roles in water governance processes, particularly given the successful Indigenous Peoples Focus at World Water Week 2025?**

**MS. THYBELL:** Inclusion is not an afterthought for SIWI, it's a guiding principle of how we work. Water governance must reflect the diversity of people and perspectives it affects. That's why we're taking active steps to ensure that Indigenous Peoples, youth, and marginalized communities have formal and meaningful roles in decision-making.

At World Water Week 2025, we were proud to host the strongest Indigenous Peoples Focus yet, highlighting the leadership, rights, and knowledge systems of Indigenous communities. These efforts are not limited to the Week itself. Across our programmes, we embed human rights-based and gender-responsive approaches to water governance, ensuring that participation is equitable and voices traditionally excluded are heard.

Our approach goes beyond representation. We are co-developing partnerships and knowledge products with Indigenous networks and youth-led organizations so that their priorities are integrated into global and regional dialogues. For instance, SIWI supports the development of accessible, multilingual content and capacity-building tools designed specifically for underrepresented groups.

Inclusion strengthens governance quality. By integrating diverse perspectives and local knowledge, water solutions become more effective, more just, and ultimately more sustainable. That is how we define meaningful participation at SIWI, not symbolic, but transformative.

**EDITOR: Looking at the international water landscape, where do you see SIWI focusing its efforts in the coming years?**

**MS. THYBELL**: The next few years will be decisive for global water action. Between COP30 in Belém, the Rio Convention COPs in 2026, and the UN Water Conference in 2026, we have a unique opportunity to elevate water as the connector between climate, nature, and sustainable development.

SIWI's focus will be on continuity and coherence, ensuring that these global milestones reinforce each other and that insights are captured and applied in practice. Our recent collaboration on the Routledge Handbook of Water Diplomacy reflects this vision: helping practitioners around the world apply the principles of dialogue, trust-building, and adaptive governance that SIWI has championed for decades.

Through World Water Week and the Water for Climate Pavilion, we will continue to bridge science, policy, and diplomacy. The coming years will be about scaling what works, empowering people, institutions, and governments to act together.

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# DR. VIRINDER SHARMA

**Member (Technical), Commission for Air Quality Management (CAQM), Government of India**

Dr. Virinder Sharma is presently Full-time Member (Technical) in the Commission for Air Quality Management in NCR and Adjoining Areas (CAQM), Government of India. Leading on the Air quality related policy, strategies and implementation in the Transport, Industries, Thermal Power Plants and R&D sectors.

Dr Sharma is an International Development Specialist with more than 30 years of professional, technical and management experience in the Asian Development Bank (ADB), Foreign, Commonwealth and Development Office (FCDO)/Department for International Development (DFID) of the UK Government and the Government of India/State Government.

*Excerpts from an interview of **Dr. Virinder Sharma**, Member (Technical), Commission for Air Quality Management (CAQM), Government of India by **Dr. Arvind Kumar**, Editor, Focus Global Reporter*

**EDITOR: As one of the three full-time technical members at CAQM, what does a typical day look like for you? Beyond the formal mandate, what aspects of your role do you find most challenging, and which give you the greatest sense of accomplishment?**

**DR. SHARMA:** As Member-Technical, my day is largely driven by review of targeted actions by the concerned agencies of Delhi and NCR. The first layer of work is monitoring daily air quality trends, compliance reports, satellite data on fire counts, and weather/meteorological conditions, air quality parameter trends and forecasts. This is followed by review meetings with other Ministries, technical divisions, state pollution boards, urban local bodies, transport, R&D agencies and field enforcement teams. A significant part of the day also goes into evaluating techno-economic feasibility of solutions proposed by industry, transport, TPPs startups, and research and development institutions, especially when the Commission is framing a new statutory direction.

The most challenging part of the role is also the most important one: ensuring uniform technical implementation across NCR, despite differing institutional capacities, and infrastructure gaps. What works in Gurugram does not automatically scale up in Bharatpur or Hapur. Building technical convergence and monitoring implementation across different departments, air quality sectors/sub-sectors is a constant task.

What gives the greatest sense of accomplishment is measurable change on ground, whether it is the significant reduction in stubble burning incidents, increase in biomass co-firing utilization by Thermal power plants, adoption of cleaner fuel standards in Delhi NCR and EV transition, the shift of 95 percent NCR industries to approved fuels, or the fact that Delhi saw 31 percent more good-to-moderate AQI days in 2024 compared to 2018. All actions take time to witness the change and every time data reflects improvement, on what has worked and what has not worked and why, the challenging task of air quality management feels worthwhile.

**EDITOR: How does CAQM incorporate cross-sectoral linkages between air quality, water resources, and energy systems in its policy framework? Can you share specific examples of how addressing air pollution has created co-benefits for water conservation or clean energy transition in NCR?**

**DR. SHARMA:** Air pollution mitigation cannot work in silos as it is multi-disciplinary, cross-sectoral across geographies and airsheds. Emissions are an outcome of how we manage energy, agricultural waste, dust, vehicles, land, etc. The 2022 Policy to Curb Air Pollution in NCR and the updated sectoral action plans embed this integrated approach.

A clear example is the biomass pellet mandate for brick kilns and thermal power plants. By shifting from coal to paddy straw-based pellets, the Commission is not only reducing PM, $SO_2$, and NOx emissions, but also diverting agricultural residue that would otherwise be burnt or left to decompose, releasing methane. The same intervention reduces groundwater stress because in-situ straw mulching improves soil moisture retention and reduces irrigation demand in wheat sowing.

Another linkage is visible in the DG set retrofit direction. By mandating dual-fuel and emission control devices, the transition is tied to improved energy efficiency standards, which directly reduce diesel consumption per kWh and therefore lower both $CO_2$ and PM emissions.

Similarly, the common industrial boiler clusters being planned in multiple NCR industrial areas are designed not only to cut point-source emissions by centralizing combustion, but also bolstering clean energy transition.

BS VI fuel standards adopted by various transport segments and restrictions on older BS standards has helped to transition vehicle fleets to cleaner fuels and reduction in vehicular emissions.

In all these cases, the engineering and technical design supported by innovative technologies like APCDs in industry pollution control, ANPR for identifying older BS standards in vehicles, is guided by cross-sectoral co-benefits: one intervention with multiple environmental dividends.

**EDITOR: CAQM has achieved remarkable success in reducing stubble burning incidents over 80% reduction in Punjab from 71,304 fires in 2021 to 10,909 in 2024. What innovative technical solutions, beyond traditional crop residue management machines, is CAQM exploring to achieve complete elimination by 2025-26? How are you addressing the challenge of optimum availability of CRM machinery and farmer awareness that continues to hinder ground-level implementation?**

**DR. SHARMA:** The first phase of stubble reduction was driven by conventional CRM machines and coordinated enforcement. The next phase demands deeper innovation in three streams: biomass utilisation, supply-chain to value chain enterprises, and farmer-side behavioural change.

CAQM is now prioritizing decentralised ex-situ utilisation models that reduce dependence on long-haul logistics. This includes village-level pelletizers, mobile briquetting units, and compact bio-ethanol plants designed for under-50 km feedstock radiuses. Torrefaction-based pellets, which have higher calorific value and water resistance, are being technically fast-tracked so they can fully replace coal in Thermal Power plants, brick kilns and cluster boilers.

On the in-situ side, CAQM is working with IARI and state agriculture universities to scale second-generation bio-decomposers that require less irrigation and work in lower temperature bands, as it is a major constraint in November.

The challenge is no longer proof of concept, but optimum allocation and scaling up utilization of machines. We are now moving toward GPS-tagging of machinery, real-time rental platforms, and block-wise harvest staggering to avoid peak congestion windows where machine availability drops sharply.

Farmer awareness is being shifted from "stop burning" messaging to "crop residue as an income stream". When straw becomes a tradable raw material instead of a disposal burden, elimination becomes automatic, not enforced.

**EDITOR: CAQM has mandated biomass pellet co-firing in thermal power plants and brick kilns, with targets reaching 50% by November 2028. From a technical perspective, what are the primary engineering challenges in scaling up torrefied pellet production and ensuring consistent quality standards? How is CAQM facilitating technology transfer and capacity building for paddy straw-based biomass pellet manufacturing across Punjab, Haryana, and UP?**

**DR. SHARMA:** The technical bottleneck is not in combustion, but in the front-end engineering of pellet quality, durability, and calorific consistency. Torrefied pellets need uniform bulk density, low moisture absorption, and ash characteristics to avoid slagging in kilns and corrosion in power plant boilers. The variability of raw paddy straw based on harvest timing, humidity, and storage creates quality instability unless processing lines are standardized.

CAQM is addressing this through a dual strategy. First, we are working to formalise graded quality standards for agro-residue pellets, similar to coal grading, so procurement contracts can be performance-linked. Second, the Commission is facilitating technology transfer workshops between pellet manufacturers and TPP/Industry engineering teams so boiler retrofit needs are understood at source.

To expand production capacity, CAQM has recommended state-led cluster models where land is pre-allocated in industrial estates for pelletisation units, with capital subsidy linked to minimum offtake agreements from power plants and brick kilns. The goal is to move from "produce and hope to sell" to assured demand backed mechanism.

Capacity building is being done through state nodal agencies, where engineers and aggregators are trained not just in pellet production, but in material science and storage logistics.

**EDITOR: Delhi is implementing AI-driven platforms and integrated monitoring systems for air quality management. What role does CAQM play in standardizing real-time emission monitoring systems across NCR industries, especially given that 2,010 out of 2,361 major industrial units have not connected their OCEMS to the CPCB server as of October 2025? How can emerging technologies like satellite monitoring, IoT sensors, and machine learning improve CAQM's predictive capabilities for pollution episodes?**

**DR. SHARMA:** CAQM's focus is not just on installing OCEMS but on interoperable, auditable data. We have mandated API-based connectivity to ensure plant-level emissions data is transmitted in real time to CPCB/CAQM servers. The 2,000+ major units that have not linked will also be linked to the CPCB server, data of which is being supervised by OCEMS Cell in CAQM.

The Commission is finalising a uniform API-based data protocol so emissions, meteorology, compliance status, and satellite layers can be viewed in a single decision-support system through the proposed Integrated Command and Control Centre. The Air Quality Early Warning System (AQEWS) already integrates forecasts from IITM, IMD, and SAFAR, the next upgrade includes machine learning models that use historical enforcement data to predict sector-wise contribution probabilities during different meteorological regimes.

Satellite monitoring of industrial plumes, IoT-based low-cost sensors in peri-urban and construction areas, and mobile-source telemetry portals from vehicular fleet aggregators will all feed into this common grid. The long-term goal is to shift from reactive enforcement to predictive prevention, if road dust, biomass burning, or NOx spikes are foreseeable hours in advance, orders can be enforced in a time-bound manner.

**EDITOR: CAQM's Direction No. 94 (June 2025) mandates exclusive CNG/EV induction for aggregators and e-commerce fleets, with complete transition targets by 2026-2030. What technical infrastructure gaps; charging networks, battery swapping stations, grid capacity pose the greatest barriers? How is CAQM coordinating with power distribution companies to prevent increased coal-based electricity generation from offsetting the emission benefits of EV adoption?**

**DR. SHARMA:** The biggest bottleneck is not vehicle supply but clean energy delivery infrastructure. EV fleet transition requires three parallel capabilities: fast charging stations at logistics hubs, battery swapping at high-frequency demand nodes, and distribution grid upgrades to handle clustered load without diesel genset fallback.

Many NCR cities still have 11 kV feeders operating near peak capacity during commercial hours. If EV charging demand is dumped on the same feeder, coal-based peaking plants ramp up and the emission benefit is lost. CAQM is therefore working with discoms to ring-fence EV charging load using renewable-backed open access and dedicated feeders where possible.

For CNG fleets, the issue is station density and pressure stability. Direction 94 on Vehicle aggregators, Delivery service providers and e-commerce entities is being monitored through Delhi and NCR policy guidelines, working with aggregators and ensuring portal for monitoring of cleaner vehicle induction in CNG and EV categories. This is matched with GAIL and city gas distributors' plans for 300+ new CNG stations and booster compressors by 2027.

The Commission has made it clear that EV adoption cannot become a backdoor for higher coal generation. Accordingly, a technical framework is being designed where discoms must maintain a minimum renewable-to-load ratio for sanctioned EV charging capacity, so emission benefits are real, not statistical.

**EDITOR : CAQM coordinates with over 40 government departments, pollution control boards, and district administrations across five states/UT. From your technical member perspective, what are the most significant inter-agency coordination challenges you face in ensuring uniform implementation of CAQM directions?**

**DR. SHARMA:** The technical challenge is not lack of intent, it is asymmetry in institutional readiness as we coordinate air quality management across 150 different departments and agencies. A single CAQM direction lands in five different administrative regions in Delhi NCR. Different departments run on differently: agriculture is seasonal, transport is annual-budgeted, municipal works are project-cycle based. Data systems are different, so compliance tracking becomes a difficult task.

CAQM addresses this through uniform standards, joint technical annexures, sectoral working groups, and shared compliance dashboards that combine OCEMS, satellite alerts, ANPR data, challan logs and field reports. Flying squads and the Enforcement Task Force provide a single-window inspection mechanism.

**EDITOR : CAQM recently issued an RFP seeking innovative technological solutions across nine pollution sources, with funding support for up to three years. What specific research gaps or technological innovations is CAQM most eager to support? How do you envision citizen science, community-based monitoring, and academic-industry partnerships contributing to actionable air quality solutions?**

**DR. SHARMA:** We are looking at solutions that close the last-mile gap between lab success and field deployment under our statutory R&D Sub-committee. Four priority research gaps stand out:

- Low-cost PM2.5/gas sensors with reliable field calibration
- Dust suppression solutions for low-humidity, low-evaporation conditions
- Scalable torrefaction chemistry for uniform pellets
- Industrial fugitive emissions control in cluster layouts

Citizen science will play a role, but only if devices meet minimum calibration standards. The RFP therefore encourages academia–industry–startup consortiums, where research depth, engineering scalability, and commercial deployment come together.

**EDITOR : Studies show that short-term exposure to $PM_{10}$ and $SO_2$ in Delhi significantly increases respiratory disease hospital visits, with $PM_{2.5}$ levels consistently exceeding WHO standards. Does CAQM maintain a comprehensive public health impact assessment framework that quantifies mortality and morbidity reductions achieved through specific interventions? How are health co-benefits being integrated into cost-benefit analyses for pollution control measures?**

**DR. SHARMA:** A health-linked cost-benefit framework is now embedded in CAQM's decision architecture. While the Commission is not a medical body, it relies on epidemiological baselines from ICMR, CPCB, and WHO to translate $PM_{2.5}$ reduction into avoided mortality, hospital admissions, etc. People perceive air pollution as dust or smoke and are not aware of the air quality monitoring technical PM parameters and thus vulnerable sections have to be made fully aware of the health impacts of different stages and their exposures to air pollution.

For example, the reduction of 24 percent "Poor to Severe+" AQI days since 2018 directly feeds into a model estimating respiratory OPD load reduction in NCR tertiary hospitals. Likewise, the EV fleet transition is evaluated not just on tailpipe emissions prevented, but secondary $PM_{2.5}$ avoided from coal displacement.

These values are built into cost-benefit assessments for decisions like fuel switching, EV timelines, or biomass incentives. The idea is to treat clean air as a preventive health investment, not a regulatory cost.

**EDITOR : The Centre doubled environmental compensation penalties for stubble burning in November 2024, yet the Supreme Court has criticized implementation gaps and delays in appointing adjudicating officers. What technical and administrative mechanisms is CAQM deploying to ensure effective collection and utilization of environmental compensation? How is the Commission using remote sensing, geo-tagging, and digital payment systems to strengthen the enforcement-penalty nexus?**

**DR. SHARMA:** The Commission is now moving away from manual FIR-based compensation to a geo-tagged, automated penalty matrix. Satellite fire counts are being cross-verified with block-level land records and burnt area cropland monitoring so that compensation is imposed even if violators are not physically caught in the act in addition to red entries in land records.

Adjudicating officers are being deployed in all districts with digital penalty dockets linked to direct bank transfer systems. The idea is to eliminate the enforcement lag penalty should follow within 72 hours of detection, not after harvest season ends.

**EDITOR : Looking ahead to 2030, what would successful air quality management in NCR look like from a technical standpoint? Beyond achieving AQI targets, what systemic transformations in urban planning, industrial ecology, agricultural practices, energy systems, and citizen behaviour does CAQM envision?**

**DR. SHARMA:** Success in 2030 is not just AQI below 100, it is sectoral transformation. Industries running on clean fuels, vehicle logistics fleets fully electrified or bio-CNG based, brick kilns operating on biomass, crop residue treated as raw material instead of waste, and dust control systems embedded into every infrastructure project.

Air pollution will stop being an issue only when peoples' behaviour, not just technology, governance and systemic change. Civil society will be critical in three roles:

- Localized monitoring and reporting: validating whether directions translate into ground reality.
- Behaviour change accelerators: from school-level campaigns on waste burning to farmer producer organisations trading straw.
- Co-owners of data: the more transparent the data, the stronger the accountability loop.

Air quality improvement will not come from regulatory enforcement alone, but a combination of incentives/disincentives that can build collective ownership for cleaner behavior for improvement in the various activities being practiced in the airshed.

**EDITOR : How can civil society organizations contribute to this transformational agenda through awareness, community mobilization, and integrated resource management approaches?**

**DR. SHARMA:** Civil society will be the bridge between policy and practice. There are three high-impact roles Civil Society Organisations (CSOs) can play: data & accountability, market & behaviour change, and local resource integration.

First, on data and accountability: calibrated community sensor networks run by trusted CSOs expand spatial coverage and flag hotspots. But calibration and QA are essential. CAQM welcomes partnerships where NGOs to manage air quality sensors under jointly agreed protocols and feed validated data into the Commission's compliance dashboard. CSOs can also run independent audits of local implementation (CRM machine utilisation, pellet hub offtake, OCEMS connectivity) and publish simple scorecards that drive corrective action.

Second, on market and behavioural change: CSOs are effective at converting "don't burn" into "make income from residue." They can incubate farmer producer organisations, aggregate straw for village-level pelletisers or CBG units, negotiate offtake contracts with brick clusters, and run demand-generation campaigns for biomass products. At the household level, targeted campaigns on clean cooking, waste segregation, and anti-burning norms accelerate social norm shifts.

Training modules, demo plots for bio-decomposer use, and machine-rental co-ops make technology adoption easier.

Third, on integrated resource management: CSOs can pilot circular-economy models — linking municipal organic waste to composting, pairing pellet-byproducts with local industry, and helping municipalities implement dust-suppression and greening plans. They can manage locally-earmarked penalty funds transparently by running community escrow committees that disburse subsidies for CRM equipment and pellet hubs.

Finally, CSOs are essential in convening multi-stakeholder platforms bringing farmers, industries, local bodies, vehicle aggregators and utilities together to co-design context-specific solutions. When civil society moves to partnership, interventions become socially acceptable, economically viable, and technically durable and that's when clean air stops being an enforcement task and becomes a community outcome.

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# MS. MADHUSHREE CHATTERJEE

**Secretary, UN-Water & Chief, Natural Resources and Interlinkages Branch, UN DESA**

Ms. Madhushree Chatterjee is the Secretary of UN-Water and currently serves as Chief of Natural Resources and Interlinkages Branch at the Division for Sustainable Goals of the Department of Economic and Social Affairs (DESA), United Nations, New York. Ms Chatterjee brings a combination of substantive experience in the implementation of the 2030 Agenda and the SDGs and understanding of the strategic direction of the Organisation to her role as Secretary of UN-Water.

Ms Chatterjee served as the Principal Economic Affairs Officer and later as Chief of the Strategic Planning and Communication Service at the Office of Under-Secretary General, DESA. She actively engaged programme managers on inputs to discussions on the 2030 Agenda, provided a leadership role in the Strategic Planning and Communication Services unit, and supported the DESA Editorial Board. Ms Chatterjee holds a PhD in Economics from the University of California Santa Cruz.

## *Excerpts from an interview of Ms. Madhushree Chatterjee, Secretary, UN-Water & Chief, Natural Resources and Interlinkages Branch, UN DESA by **Dr. Arvind Kumar**, Editor, Focus Global Reporter*

**EDITOR: Looking back at your career trajectory within the UN system, what has been the most significant shift you have witnessed in how the global development community perceives "water" from a siloed sector to a central development enabler?**

**MS. CHATTERJEE**: The United Nations has long acknowledged the vital role of water in all aspects of development. A diverse set of Conferences and Summits, as well as resolutions of the various Committees of the General Assembly, have addressed the role of clean water and sanitation and the multitude of socio-economic implications owing to a lack of it. However, discussions in the early 2000s were largely devoted to WASH (Water, Sanitation and Hygiene) or rather was seen through the WASH lens. In 2000 for example, when the eight Millennium Development Goals (MDGs) were agreed upon by the Member States of the United Nations, the accomplishment of Goal 7: Ensure Environmental Sustainability was dependent on, among others, four water related targets, all focused on access to drinking water and improved sanitation. As such, it is my understanding that water was addressed mostly within the confines of WASH ministries.

The transition from the Millennium Development Goals to the Sustainable Development Goals represented a major broadening of water-related priorities. While the MDGs focused primarily on ensuring basic water access through its Goal 7, the SDGs took a comprehensive approach with Goal 6 by addressing water management across its full cycle as reflected in its targets. With the adoption of the 2030 Agenda, and its 17 SDGs, we demonstrated that water is a fundamental connector across our priorities in sustainable development. Research, including that done by UN DESA, shows clearly how water is connected across the majority of SDGs. For instance, access to clean water is a key factor in reducing poverty (SDG 1). One reason is because of water's role in food production (SDG 2), Lack of water and sanitation limits the lives of women and girls disproportionately and is a barrier to gender equality (SDG 5); Clean water is also essential to all economic activity, including energy production (SDG 7), job creation (SDG 8), and industry (SDG 9). With growing water scarcity, water will be the key constraining factor in many parts of the world, requiring responsible consumption and production (SDG 12) and, therefore, water must be a key part of planning for sustainable cities and communities (SDG 11) and resilient landscapes (SDG 15) to name a few.

Finally, the 2023 UN Water Conference was a watershed moment where discussions centered around thematic dialogues that focused on these interconnections and as we look towards the 2026 UN Water Conference, Member States are building on these connections to accelerate implementation of our common priorities on water, leaving no one behind. The 2023 Conference

and the subsequent appointment of the Special Envoy on Water places water high on the global sustainable development agenda.

**EDITOR: It has been over a year since the operationalization of the UN System-wide Strategy on Water and Sanitation. From your perspective, how has this strategy concretely changed the way UN agencies collaborate on the ground? Are we finally breaking the silos?**

**MS. CHATTERJEE**: The UN System-wide Strategy on Water and Sanitation aims to make inter-agency collaboration fully operational and to use UN development system reforms and upscaled water initiatives to offer Member States support that is more strategic, effective, unified, and efficient. Following the Strategy's introduction, UN-Water created an implementation plan outlining key collaborative and continuing initiatives. This plan establishes common priorities and steps to improve coordination, synchronize organizational work schedules, and deliver more unified and impactful assistance to Member States. The Plan advances the Strategy's execution by:

Setting deadlines for actions that will achieve the Strategy's goals and results

- Emphasizing how UN organizations and partners can contribute to create synergies, fill gaps, and eliminate redundancy
- Offering a foundation for harmonizing institutional strategies and water programmes
- Acting as a collective framework for tracking advancement
- Facilitating the mobilization of extra resources for joint Strategy implementation

Beyond delivering coordinated and harmonized assistance to Member States, there's also a goal to unite and strengthen UN messaging on water matters. The objectives include promoting improved collaborative country-level programming across different government departments and sectors, integrating water issues throughout the Rio Conventions at every level, enhancing evidence accessibility and knowledge application to speed up progress, and building momentum to raise the aspirations of UN Water Conferences.

As for the challenge of eliminating organizational silos is concerned, it's important to recognize that each UN entity operates with unique mandates, governing bodies, separate funding mechanisms and approaches that cannot be easily restructured. At the operational level, the UN must work through comparable challenges while respecting national priorities. The system-wide strategy represents a meaningful initial step toward unified action.

**EDITOR: The SDG 6 Global Acceleration Framework emphasizes data. As we head into 2026, are you satisfied with the level of data transparency from Member States, particularly from the Global South, or is the "data gap" still our biggest hurdle?**

**MS. CHATTERJEE**: When Member States adopted the 2030 Agenda, countries took responsibility for collecting and sharing indicator data and metadata for the purpose of global reporting. The role of the United Nations is to support countries in their efforts to do so. UN-Water established the Integrated Monitoring Initiative-SDG 6 in 2015 which brings together the United Nations organizations that are custodians of the various SDG 6 global indicators, to that end.

Data on SDG 6 that is reliable, consistent and disaggregated (including by age and gender) are essential to stimulate political commitment and inform policymaking and decision-making. Such data helps identify those who are most vulnerable, enable well-targeted investments that maximize health, environmental and economic gains, and allow governments to make timely course corrections. While the data gap remains one of our most critical challenges, I want to emphasize that it is not simply about transparency or willingness—many governments need technical capacity, financing, and institutional infrastructure to collect reliable data. In some countries, we're asking for disaggregated water quality monitoring when they don't have functioning statistical offices.

Finally, the global South comprises of a variety of countries across regions, each navigating their own unique circumstances. Our role is to provide technical assistance, support capacity building, foster innovation, and increase financing for national statistical systems. It is therefore fitting that support for programmes that strengthen national data collection and statistics, especially on sustainable development, features prominently in the Sevilla Commitment.

**EDITOR: You have spoken previously about the "Blue Economy" as a frontier for sustainable growth. How can developing nations harness ocean resources without repeating the over-extraction mistakes made on land, and how does UN DESA support this balance?**

**MS. CHATTERJEE**: Estimates suggest the ocean economy generates between US $3-6 trillion annually and provides direct employment for no fewer than 150 million people worldwide. These jobs span diverse industries including fisheries, fish farming, maritime shipping, coastal tourism, offshore wind power, petroleum extraction, seabed mining, and marine biological research.

Each nation's ocean economy composition differs based on its geographic location, historical background, governmental systems, societal structure, cultural traditions, economic conditions, and the strategic priorities reflected in its national policies and vision. Ocean resources, therefore, are fundamentally connected to coastal nations' economic prosperity and are critical for reaching the Sustainable Development Goals.

A truly sustainable ocean economy must incorporate activities and sectors that achieve social fairness, environmental protection, and economic profitability—thereby harmonizing the three pillars of sustainable development.

In my view, this equilibrium among economic, environmental, and social dimensions depends heavily on which ocean-based sectors—both existing and emerging—are developed. Established industries like fishing, fish farming, tourism, and shipping can coexist with emerging sectors including ocean-based renewable energy, blue carbon capture, and marine biotechnology.

Furthermore, the blue economy offers particular promise for small island developing and coastal states to strengthen their resilience against external shocks while safeguarding and revitalizing their natural assets. However, building this resilience faces numerous obstacles, including threats like ocean acidification, plastic pollution, and declining biodiversity.

Bold initiatives must be undertaken to combat climate change and biodiversity loss, while ensuring that livelihoods are maintained and sustainable.

Frequently, employment concerns, environmental protection, and climate action are addressed separately. As we advance toward an ocean economy that tackles the interconnected crises of climate, pollution, and biodiversity, we must strengthen comprehensive ocean management systems and labor protections while elevating perspectives from coastal populations, including Indigenous groups, women, and youth. Integrated policies and coordinated management are necessary to restore ocean health while enabling responsible use of marine resources for human benefit.

UN DESA contributes by providing capacity-building support to help countries develop national strategies that incorporate these priorities in a unified and comprehensive way. Furthermore, DESA supports the implementation of SDG 14, including through conducting in-depth reviews of progress on its implementation, at the High-Level Political Forum on sustainable development, working closely with Member States on the same. UNDESA leads the substantive preparations and content of the Ocean Conferences and maintains a database of ocean commitments aimed at sharing best practices. UNDESA also conducts regular analysis of these voluntary commitments to assess their impact.

**EDITOR: SIDS are on the frontlines of both the water crisis and ocean degradation. What specific new initiatives is your branch championing to support SIDS in building resilience against sea-level rise and freshwater salinization?**

**MS. CHATTERJEE**: Small Island Developing States (SIDS) are at the forefront of the water crisis and face amplified challenges in reaching SDG 6 due to their distinct vulnerabilities. These include scarce fresh water, fragmented governance, and the intensifying effects of climate change, all of which threaten their sustainable development and resilience. Furthermore, climate change worsens water insecurity for SIDS. For example, inadequate sanitation, worsened by climate impacts, raises the risk of waterborne diseases. Investments in wastewater treatment and public health education are crucial to mitigate these threats. Financing remains a critical hurdle. Many SIDS depend on external, project-based funding, which is not sustainable for long-term

water management. Access to international climate finance is essential to close funding gaps and support resilient infrastructure.

Sea-level rise, saltwater intrusion, erratic rainfall, and extreme weather compromise water quantity, quality, and infrastructure. In its advisory capacity, UN DESA helps SIDS countries develop national plans and strategies that take into account requisite measures to address challenges. We recommend that adaptation measures are integrated into water-management strategies to protect livelihoods and ecosystems.

Gaps in policy and governance hinder progress. Fragmented policies and weak institutional coordination limit effectiveness. Adopting Integrated Water Resources Management (IWRM) approaches that reflect SIDS realities can improve governance, coordination, and resource allocation. We encourage building resilient water systems through innovative infrastructure. SIDS need support for decentralized, cost-effective solutions such as rainwater harvesting, renewable-energy-powered desalination, and nature-based approaches to boost ecological resilience and water security.

Empowering decision-making with data and knowledge systems is critical. Data gaps on SDG 6 in SIDS hinder evidence-based actions; about 49% of SDG 6 indicators in SIDS lack adequate reporting, higher than the global average which hampers targeted interventions. As requested, UN DESA helps build technical capacity and helps strengthen institutions to close these gaps and track progress.

UN DESA also helps foster global partnerships to leverage expertise and resources. Strengthening ties among SIDS, regional organizations, and international bodies can enhance knowledge exchange, access technical expertise, and mobilize financial resources more effectively.

Finally, we help elevate SIDS voices on the world stage. The vulnerability of SIDS in the global water crisis calls for greater visibility. UN DESA has served as the Secretariat for several UN Conferences that focus on SIDS where UN DESA leverages its analytical skills, convening power and intergovernmental acumen to ensure that challenges specific to SIDS are addressed. We are also working closely with the Special Envoy on Water to advocate for stronger political will, dedicated funding, and technical support for SIDS.

**EDITOR: While we are focused on 2030, discussions are quietly beginning about the post-SDG agenda. Do you believe we need a standalone "Water Goal" again in the future framework, or should water become a mandatory cross-cutting indicator across all future development goals?**

**MS. CHATTERJEE**: This is a timely and important question, and I don't have a definitive answer to it, which perhaps reflects the complexity of the matter itself. The Member States of the United Nations will determine how water is reflected post-2030. Without pre-empting the

outcome, I would like to stress that the case for either option that you state in your question is compelling.

Having a standalone goal (SDG 6) created political visibility, enhanced advocacy, engaged a diverse group of stakeholders, promoted research leading to innovative ideas and solutions at all levels. It has also led to the establishment of mechanisms and frameworks, (no doubt, with imperfections) that have been critical in bringing about a coordinated approach to water. In short, SDG 6, despite its shortcomings, significantly elevated water in national, regional and global agendas. There is also the practical reality that without a dedicated goal, water may be deprioritized when governments face trade-offs.

The case for mainstreaming water is equally strong. If, water is a connector, why should we create artificial silos and sectorize it? I would propose a focused water goal, with a mandatory cross-cutting element across all other goals, which would recognize the importance of water in sustainable development.

We know that the world is off track to achieve SDG 6 by 2030 and the world must accelerate up to four times the current rate to have a chance to achieve SDG 6 by 2030. Therefore, tracking progress on our water related priorities will be critical. What this would look like ultimately would depend on decisions that Member States take on the post-2030 Agenda itself: i.e., would the current goal structure be maintained or would it take the shape of an approach that acknowledges interlinkages across our common objectives.

**EDITOR: As we enter 2026, a critical year for global water governance, what is your one key message to non-state actors—civil society, NGOs, and the private sector—on how they can best support the UN's mandate right now?**

**MS. CHATTERJEE**: The United Nations has a strong history of partnership with a variety of stakeholders including civil society, NGOs and the private sector. We recognize that we cannot achieve SDG 6 on our own and neither can national governments working in isolation. Right now, the UN's water mandate most needs non-state actors to align and coordinate their efforts around shared goals, common data, and country-led priorities, and to demonstrate impact at scale.

Concretely, this means:

- Civil society and NGOs should advocate for water via compelling evidence. They must amplify marginalized voices and support governments to implement informed, science and data driven policies.
- The private sector must move beyond pilots and pledges to transparent investment, risk-sharing, and disclosure that supports universal access, ecosystem protection, and climate resilience.

- All non-state actors should use compatible metrics, open data, and accountability mechanisms so progress can be aggregated, trusted, and acted upon.

With barely four years to go, the UN alongside its partners must move beyond commitments and deliver results on the ground. The UN can convene and set norms but only coordinated, outcome-focused partnerships will close the growing gap between global water ambition and reality.

As we approach 2026, my key message to non-state actors, including civil society, NGOs, and the private sector, is to engage proactively with the UN's initiatives and contribute to collaborative efforts. Your involvement is vital in advocating for sustainable water management, implementing innovative solutions, and amplifying the voices of communities that are directly impacted. Together, we can build a stronger global partnership for water governance and sustainable development.

# REPORTS

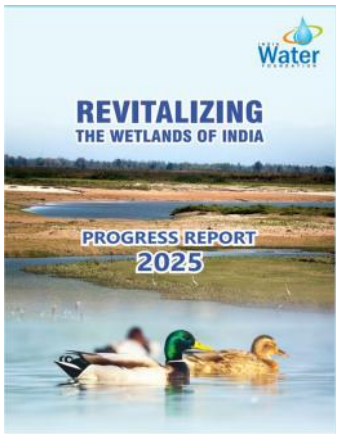
## Multi-sectoral Partnerships for the Conservation and Restoration of Marine and Coastal Ecosystems


As part of its contribution, the India Water Foundation (IWF) hosted a high-level official side event titled "Multi-sectoral Partnerships for the Conservation and Restoration of Marine and Coastal Ecosystems." The event brought together global experts and stakeholders to advocate for science-based, inclusive, and rights-oriented marine ecosystem restoration.

Key themes included the integration of ocean-climate biodiversity linkages, expansion of blue financing, marine spatial planning, and the need for community-driven and equitable marine governance. Innovations and best practices from UNEP, FAO, ADB, WorldFish, INCOIS, and others enriched the dialogue with regional and local success models—from coral restoration and women-led seaweed farming to digital ocean services and regenerative aquaculture.

https://indiawaterfoundation.org/wp-content/uploads/2025/06/REPORT-of-the-High-level-Policy-dialogue-On-Multisectoral-Partnerships-for-the-Conservation-Restoration-of-Marine-and-Coastal-Ecosystems-1.pdf

## Revitalizing the Wetlands of India – Progress Report 2025




The report "Revitalizing the Wetlands of India- Progress report 2025" presents a comprehensive and data-rich assessment of the current state of wetlands across India, underscoring both progress and persisting challenges. India's wetlands ranging from high-altitude Himalayan lakes and riverine floodplains to mangroves, coastal lagoons, and man-made reservoirs cover approximately 16.89 million hectares, or 5.12% of the country's landmass. India now boasts 91 Ramsar Sites, the largest number in Asia and third globally, reflecting its growing international leadership in wetland conservation. These ecosystems provide critical services including water purification, groundwater recharge, carbon sequestration, biodiversity conservation, disaster risk reduction, and cultural value. However, the report highlights alarming trends: nearly 40% of wetlands have been lost over the past three decades, and 50% of those remaining are ecologically degraded due to encroachment, pollution, unsustainable land use, and climate change.

Looking forward, the report calls for a paradigm shift in wetland management towards basin scale planning, cross-sectoral integration, legal enforcement, and inclusive governance. It recommends accelerating national inventories, protecting small and seasonal wetlands, leveraging space-based monitoring technologies, and adopting adaptive management approaches. The WISER 2025 framework Wetland Inventory, Science, Economics, Restoration provides a roadmap that links data, policy, and practice. India's wetland future depends on timely and transformative action: reclaiming wetlands is no longer a conservation choice but an ecological necessity to build a water-secure, climate-resilient, and inclusive future. To read the full report please click here: https://indiawaterfoundation.org/wp-content/uploads/2025/08/Status-of-Wetlands-2025-_FB.pdf

# Report - World Water Week 2025

The most significant water event of September was actually World Water Week 2025, which took place from August 24-28, 2025, in Stockholm, Sweden, under the theme "Water for Climate Action". This premier global conference, organized by the Stockholm International Water Institute (SIWI), focused on addressing the linked emergencies of climate change, environmental degradation, and biodiversity loss. During the event, India's National Mission for Clean Ganga (NMCG) was recognized as a global inspiration for river revival and community-driven efforts, participating in the session "River Cities Reimagined: Climate-Smart and Basin-Centric Urban Development".


Read the full report here:

https://focusglobalreporter.org/water-at-the-heart-of-climate-action/

# Report Release: Multi-Stakeholder Partnerships for Accelerating Climate Action through Water Transversality

The India Water Foundation is pleased to announce the release of the official report from its COP30 Side Event held in Belém, Brazil, in November 2025, on the margins of the 30th UN Climate Change Conference of the Parties (COP30). Convened as a blended session, the event was co-organised with key partners including the BAIF Development Research Foundation, ARTPORT_making waves, CPRD Bangladesh, and the Government of Meghalaya. The discussion focused on moving beyond climate rhetoric toward tangible, on-the-ground delivery and outcomes.

The deliberations reaffirmed that water is the primary medium through which climate change impacts are experienced. From heatwaves and floods to droughts and disruptions in food systems, climate shocks manifest largely through stressed water systems. The session emphasised that water must be recognised not merely as a sectoral issue, but as a critical development connector and a core indicator of economic resilience and sustainability.


The report advances Water Transversality as the unifying framework required to integrate climate mitigation and adaptation efforts with food and nutrition security, biodiversity conservation, and livelihood resilience—within and across national boundaries. Read the full report here: https://indiawaterfoundation.org/wp-content/uploads/2025/12/COP30-SIDE-EVENT-Report.pdf

# REPORT: World Economic Forum 2026


The World Economic Forum Annual Meeting 2026, held in Davos, Switzerland, brought together global leaders from governments, international organisations, industry, academia, and civil society to deliberate on the most pressing challenges shaping the future of humanity. The 2026 meeting was strongly anchored in rebuilding global trust, strengthening multilateral cooperation, and accelerating collective action across climate resilience, sustainable development, digital transformation, and inclusive economic growth. A central theme of the discussions was the recognition that fragmented global responses are inadequate to address interconnected systemic risks such as climate change, water scarcity, biodiversity loss, geopolitical instability, and widening economic inequalities. A major focus of the Forum was sustainability-driven transformation, with climate action, water security, energy transition, and resilient infrastructure identified as foundational pillars of future development. Read the full report here: https://focusglobalreporter.org/report-on-world-economic-forum/

# REPORT: India Energy Week 2026


India Energy Week 2026 (IEW 2026), held from 27–30 January 2026 at the ONGC Advanced Training Institute, Goa, served as a strategic platform reinforcing India's leadership in shaping the global energy transition. The event convened policymakers, global energy leaders, financial institutions, technology innovators, and multilateral organizations to advance dialogue on energy security, sustainability, and inclusive growth. At a time of accelerating climate challenges and geopolitical uncertainty, IEW 2026 highlighted India's commitment to balancing energy access, affordability, sustainability, and security. Read the full report here: https://focusglobalreporter.org/report-on-india-energy-week-2026/

# REPORT: India AI Impact Summit

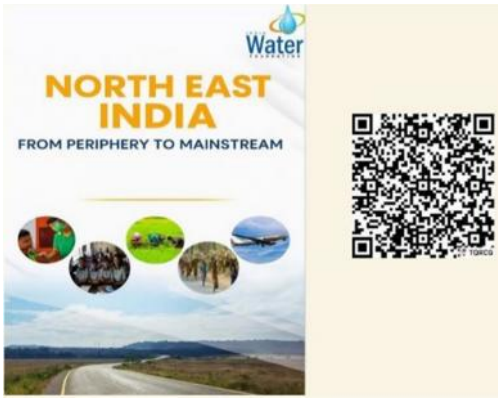

The AI Impact Summit India 2026 represents a pivotal moment in the nation's technological evolution, bringing together policymakers, industry leaders, researchers, development institutions, and civil society to shape a responsible and inclusive artificial intelligence ecosystem. As India accelerates its digital transformation, the summit serves as a strategic platform to examine how artificial intelligence can be harnessed to drive sustainable development, strengthen governance, and enhance societal resilience. Read the full report here: https://focusglobalreporter.org/india-ai-impact-summit-report/

# ACTIVITIES OF INDIA WATER FOUNDATION

## GLOBAL INPERSON

### High Level Policy Dialogue on "From Periphery to Mainstream: North East India's Development Pathways"

During the 60th session of the UN Human Rights Council in Geneva, the India Water Foundation convened a high-level policy dialogue on "From Periphery to Mainstream: North East India's Development Pathways". Dr. Arvind Kumar highlighted the region's decade-long transformation through strategic investments, community participation, and sustainable practices, citing milestones like Assam's cancer care network, Mizoram's full literacy, and Sikkim's organic farming. Dr. Pema Gyamtsho emphasized ecosystem-based solutions, including forest conservation, water security, and cross-border learning initiatives. Prof. Eddy Moors focused on water management as a driver for cooperation and biodiversity linked human rights. Ms. Mikiko Tanaka highlighted opportunities in regional trade and connectivity, while Mr. Vinod Mishra shared progress on SDGs, health, and sanitation. Mr. Satheesh Kumar Damodaran underscored cooperative federalism and knowledge-sharing models, and Ms. Shweta Tyagi showcased infrastructure, social reforms, and youth empowerment initiatives. The dialogue concluded that Northeast India's development success stems from community-driven, sustainable, and inclusive approaches, offering replicable models for other regions while emphasizing the need to address climate risks, unemployment, and infrastructure gaps.




https://www.youtube.com/watch?v=cg0fRf-z9H8

**Key Takeaways**

- Community-driven development is essential for long-term sustainability.
- Infrastructure investments should prioritize both connectivity and resilience.
- Water cooperation can serve as a platform for peace, health, and economic growth.
- Indigenous knowledge must be integrated into planning processes for context-specific solutions.
- Trade partnerships with neighbouring countries offer vast potential but require addressing systemic bottlenecks.

# Interactive Dialogue with the Special Rapporteur on the Right to Development


India Water Foundation (IWF) also played a proactive role in amplifying the voices of communities, advancing climate justice, and spotlighting sustainable development pathways. During the Interactive Dialogue with the Special Rapporteur on the Right to Development, Dr. Arvind Kumar, President, IWF, delivered a powerful intervention titled "From Polluters to Payback: A Call for Climate Equity." He held the Global North accountable as historical polluters and stressed that climate justice must be gender-responsive, adequately funded, and anchored in international solidarity to ensure an equitable sharing of both burdens and benefits. He highlighted how India's policies integrate gender considerations, enabling women's leadership in water management, renewable energy, and climate-resilient agriculture. Initiatives such as the National Adaptation Fund on Climate Change and targeted financing for women farmers and entrepreneurs were cited as strong examples. Calling for scaled-up climate finance beyond the USD 100 billion commitment, Dr. Kumar emphasized South-South cooperation through affordable renewable technologies, disaster risk reduction expertise, and naturebased solutions, while urging that climate justice must move from being an abstract aspiration to a funded, inclusive, and practical reality that safeguards the planet while advancing the right to development for all https://www.youtube.com/watch?v=4IEIhOLop08

# General Debate under Agenda Item 5 on Human Rights Bodies and Mechanisms


In the General Debate under Agenda Item 5 on human rights bodies and mechanisms, Ms. Shweta Tyagi, Chief Functionary, IWF, underscored the indispensable role of civil society in advancing human dignity and accountability. She welcomed the Secretary-General's report on intimidation and reprisals and urged Member States to foster enabling environments where experts, defenders, and communities can engage freely with UN mechanisms. Stressing IWF's role in bringing voices from fragile ecosystems, indigenous groups, and rural populations, she highlighted how cross-learning between local realities and international frameworks enriches policy outcomes. Ms. Tyagi called for stronger synergies between the Human Rights Council and its mechanisms, ensuring that civil society knowledge is not only acknowledged but also translated into tangible action aligned with the 2030 Agenda, positioning cooperation with UN mechanisms as a cornerstone of effective multilateralism. https://www.youtube.com/shorts/YccdXZZap0Y

# IWF's Photo Exhibition at UN Highlights Northeast India's Transformative Journey

Complementing these interventions, IWF also reached beyond formal deliberations by hosting a photo and poster exhibition on 16 September 2025 at Broken Chair Square, Palais des Nations, Geneva, showcasing the remarkable transformation of India's Northeast region. The exhibition highlighted how the region, long challenged by isolation, fragile ecosystems, and limited resources, is embracing locally tailored, sustainable development models driving progress in education, healthcare, infrastructure, and livelihoods. With recent momentum fuelled by Hon'ble Prime Minister Shri Narendra Modi's visits to Mizoram, Manipur, and Assam, and over ₹36,000 crore worth of projects in connectivity, clean energy, and welfare, the Northeast is fast integrating into India's mainstream growth story. From Mizoram's first-ever rail link to Aizawl and expanded roads, to healthcare advancements in Manipur and industrial growth in Assam, these initiatives are reshaping the region's socio-economic landscape. By offering global delegates and opportunity to explore these achievements, IWF spotlighted the resilience, innovation, and determination of the Northeast, underscoring how localized, context-specific solutions can drive inclusive and sustainable progress https://www.youtube.com/watch?v=k-rJOJ1OuhQ

## IUCN World Conservation Congress 2025: Charting a Unified Future for Nature

The IUCN World Conservation Congress 2025, held in Abu Dhabi, brought together over 10,000 participants from 189 countries to shape the global conservation agenda under the theme "Nature 2030: One Nature, One Future." The Congress adopted the Abu Dhabi Call to Action, setting ambitious goals for biodiversity protection, climate resilience, and inclusive governance. A major highlight was the launch of India's first National Red List of Endangered Species, marking a milestone in biodiversity assessment and monitoring. India also inaugurated the Dugong Conservation Reserve in Tamil Nadu and gained greater representation in the IUCN Species Survival Commission, showcasing its growing leadership in environmental stewardship. Dr. Arvind Kumar, President, India Water Foundation, played a key role, sharing India's innovations in water governance, wetland conservation, and ecosystem

based adaptation. His interventions emphasized the vital interlinkages between water security, climate action, and biodiversity conservation. The Congress also hosted the first World Summit of Indigenous Peoples and Nature, embedding traditional knowledge into global conservation strategies. The event, certified for sustainability under ISO 20121:2024, reaffirmed the power of collaborative, multi-stakeholder action in building a sustainable future for the planet. Overall, the IUCN World Congress in Abu Dhabi stood out not only for its forward looking policy outcomes and technical innovations, but also for reaffirming the essential role of multi-stakeholder action in securing the future of the planet.

# Second World Summit for Social Development, 2025

India Water Foundation (IWF), led by its President Dr. Arvind Kumar, actively participated in the World Summit on Social Development (WSSD) 2025 in Doha, joining over 14,000 global stakeholders including Heads of State, ministers, international organisations, civil society, and youth leaders. The IWF delegation comprising Dr. Kumar, Chief Functionary Ms. Shweta Tyagi, and Junior Goodwill Ambassador Master Dhananjay Kumar engaged in key thematic discussions on social protection, climate resilience, and inclusive development, reflecting India's commitment to accelerating SDG progress.

As part of these engagements, the delegation held significant bilateral meetings, including an insightful interaction with H.E. Ms. Amina Mohammed, UN Deputy Secretary-General, who emphasised placing people at the centre of development, strengthening regional cooperation, and expediting efforts with only five years left for the 2030 Agenda. Dr. Kumar highlighted India's advancements in poverty alleviation, gender equality, education, health, and Global South cooperation, and Ms. Mohammed appreciated IWF's contributions, particularly acknowledging the thoughtful reflections shared by Master Dhananjay Kumar.

The IWF delegation also held a productive bilateral meeting with Ms. Katinka Weinberger, Chief of the Sustainable Socioeconomic Transformation Section at UN ESCAP, and her team at the ESCAP booth in the exhibition hall. Discussions focused on strengthening collaboration in social-sector initiatives and aligning efforts under the Common Country Analysis (CCA) framework, in which IWF plays an active role. Dr. Kumar reaffirmed IWF's commitment to advancing inclusive, sustainable, and socially equitable development across South and South-West Asia in partnership with ESCAP and other UN agencies. Both sides expressed interest in deepening joint efforts aimed at enhancing community well-being, regional resilience, and people-centric development outcomes further solidifying IWF's expanding global footprint and collaborative engagement in driving progress toward the 2030 Agenda.

# 21st UNIDO General Conference and Global Industry Summit


At the Global Industry Summit 2025 in Riyadh, the 21st session of UNIDO's General Conference, Dr. Arvind Kumar, President, India Water Foundation (IWF), joined hundreds of global leaders, policymakers, industry experts and development partners convening to shape the future of sustainable industrialization. The Summit, with its theme "The Power of Investment and Partnerships to Accelerate the Sustainable Development Goals," spotlighted how inclusive and resilient industrial growth can drive poverty reduction, job creation, climate resilience and equity.


During the session, Dr. Kumar expressed that it was profoundly moving to see Global South nations long marginalized now emerging as architects of industrial transformation, driving inclusive growth without compromising the planet. He underscored that real progress lies in creating dignified employment, enabling resilient growth, and ensuring that green industrialization benefits all communities, aligning perfectly with the Summit's vision.

By participating in Riyadh, IWF reaffirmed its commitment to building strategic partnerships, promoting sustainable manufacturing, and supporting the global agenda for inclusive and climate-resilient industrial transformation. Dr. Kumar's presence symbolized the bridge between grassroots water-centred development and broader industrial sustainability signalling hope for a future where development, equity and environmental stewardship go hand in hand.

# Sub-Regional Workshop on Water and Climate Resilience in the Hindu Kush Himalayas: Advancing SDG 2030 Agenda through Science and Cooperation


At the Roundtable on Water–Climate Nexus: National Perspectives, held on 5th December 2025 in Kathmandu, Nepal, as part of the HKH Water & Climate Resilience Workshop – Advancing the SDG 2030 Agenda through Science and Cooperation, Dr. Arvind Kumar, President, India Water Foundation, underscored the urgent need to overcome fragmented water governance in South Asia. He emphasized that water-related decision-making is often dispersed across multiple ministries with limited coordination among water, agriculture, energy, urban development, environment, and disaster management sectors. Dr. Kumar highlighted the

importance of establishing robust national mechanisms that bring together line ministries, basin authorities, disaster and meteorological agencies, local governments, and finance ministries around shared risk assessments and coordinated investment plans to strengthen resilience and sustainability.


The roundtable was co-moderated by Ms. Mikiko Tanaka, Head of the ESCAP South and South-West Asia Office, and Professor Mahendra P. Lama of Jawaharlal Nehru University, and featured a special address by Ms. Rizwana Hasan, Honorable Advisor to the Interim Government of Bangladesh and Minister of Environment, Forest and Climate Change. The session convened senior policymakers and experts from across the region, including Dr. Kalyan Rudra (West Bengal Pollution Control Board, India), Dr. Debolina Kundu (National Institute for Urban Affairs, India), Mr. Sanjeeb Baral (Water and Energy Commission, Nepal), Mr. Pema Thinley (Office of the Prime Minister & Cabinet, Bhutan), and Dr. Md Abdul Hossen (Joint Rivers Commission, Bangladesh). Organized by UNESCAP in collaboration with ICIMOD, the UN Water Convention (UNECE), and IUCN, the roundtable generated practical, actionable insights to enhance water governance, improve climate resilience, and deepen intra- and inter-country cooperation—laying the foundation for sustainable and secure water futures across South Asia. **https://www.unescap.org/events/2025/water-and-climate-resilience-hkh-advancing-sdgs-and-2030-agenda-through-science-and**

# GLOBAL ONLINE

## 9th South and South-West Asia Sub-regional Forum for Sustainable Development: Advancing SDG 6

The 9th South and South-West Asia Sub-regional Forum for Sustainable Development convened by UNESCAP on 25th August 2025, opened with the first Sub-regional Consultation on Advancing SDG 6 – Clean Water and Sanitation. Serving as a preparatory meeting for the Asia-Pacific Forum on Sustainable Development (APFSD) and the global High-Level Political Forum (HLPF), the consultation brought together government representatives, experts, and think tanks from across South and South-West Asia, including India, Pakistan, Bhutan, Bangladesh, Maldives, and Nepal.

Dr. Arvind Kumar, President of the India Water Foundation, presented the region's progress and challenges, cautioning that none of the SDG 6 targets are currently on track for 2030. He stressed that water must be recognized not just as a resource but as a policy priority, a community concern, and a catalyst for resilience—central to both climate action and the wider 2030 Agenda.

Discussions showcased national progress: India's integrated programmes such as Jal Jeevan Mission, Swachh Bharat Mission, AMRUT, and river rejuvenation efforts; Pakistan's National Water Policy and Flood Protection Plan; Nepal's remarkable 95% population coverage with safe drinking water; Bhutan's community-driven water management; and Bangladesh's focus on climate-resilient planning and Integrated Water Resource Management. At the regional level, BIMSTEC cooperation on technology transfer and capacity building was highlighted as a model of collaboration.

At the same time, participants acknowledged persisting challenges—climate-induced disasters, financing gaps, service delivery inequities, governance fragmentation, and the need for stronger accountability. Calls were made for multidimensional reforms, innovative financing tools, last-mile inclusion, and integrated river basin management supported by science and technology.

The forum reaffirmed ESCAP's pivotal role as a connector, mobilizer, and enabler in scaling up best practices and strengthening regional cooperation. It was widely agreed that progress on SDG 6 requires breaking sectoral silos, reinforcing water–climate–energy–health linkages, and advancing public–private–community partnerships.

# COP30 SIDE EVENT: Multi-stakeholder Partnerships for Accelerating Climate Action through Water Transversality

At COP30 in Belém, where the Amazon served as a living reminder of both planetary fragility and global responsibility, world leaders, negotiators, scientists, civil society, and Indigenous communities gathered to accelerate climate action during a decisive decade. With the conference sharply focused on closing adaptation gaps, scaling nature-based solutions, and strengthening global cooperation, water emerged across negotiations as the defining connector of climate impacts. It was in this context that the Side Event on "Multi-Stakeholder Partnerships for Accelerating Climate Action through Water Transversality"—cohosted by India Water Foundation, BAIF, UNESCAP, OSCE, WorldFish, FAO Mountain Partnership, ARTPORT_making waves, CPRD Bangladesh, and the Government of Meghalaya—made a


timely and strategic contribution. Bringing together a diverse coalition of global experts, government representatives, scientific institutions, and cultural practitioners, the session advanced the perspective that climate change expresses itself fundamentally through water: from intensifying floods and droughts to rapid glacier loss, salinity intrusion, groundwater depletion, and cascading disruptions across food, energy, and ecological systems. Structured through five recorded messages and a high-level panel, the event presented a comprehensive framing of water transversality as the backbone of integrated climate action.

Among the panelists, Dr. Arvind Kumar (India Water Foundation) delivered a compelling intervention grounded in field experience and policy engagement. He emphasized that water is the first interface through which communities experience climate disruption, and therefore must move from being treated as a sectoral concern to becoming a transversal principle guiding national climate governance. He stressed the need for coherence between SDG 6 and the interconnected SDGs on climate, ecosystems, gender, food systems, and partnerships, arguing that countries must institutionalize water transversality within NDCs, national adaptation plans, and development strategies. Building on Dr. Kumar's framing, the panel showcased operational models: Meghalaya's springshed rejuvenation and participatory watershed approaches; BAIF's long-term watershed and community resilience work; Bangladesh's coastal climate adaptation and salinity management; and OSCE's innovative experience in transboundary water diplomacy.

Cultural voices enriched the discourse by demonstrating how art, storytelling, and creative practice translate scientific knowledge into public consciousness shaping behaviour, accelerating local ownership, and strengthening social acceptance of new governance approaches. The session concluded with a detailed roadmap for the post-COP30 period, calling for integration of water transversality into national climate plans, blended finance models for natural infrastructure and blue-food systems, basin-level governance reforms, co-developed FEW Nexus decisionsupport tools, regional water diplomacy platforms, and community-led monitoring systems. Collectively, these recommendations articulate a robust pathway for elevating water governance as a catalyst for climate resilience reflecting the integrated, systems-thinking approach championed by Dr. Arvind Kumar and coalition partners at COP30.

# High-Level Policy Dialogue on "Water Transversality for Poverty Alleviation and Social Inclusion

High-level policy dialogue on "Water Transversality for Poverty Alleviation and Social Inclusion" organized by the India Water Foundation as an official side event of the 64th Session of the UN Commission on Social Development. The event spotlighted water not as a mere utility, but as a transformative force weaving through health, livelihoods, gender equity, and climate resilience especially in a nation where rural poverty and water stress intersect dramatically. He painted a vivid picture of India's water revolution under the leadership of Prime Minister Narendra Modi, spotlighting Jal Jeevan Mission's leap from 60% to over 81% rural tap water coverage, reaching 15 crore homes.

There is an urgent need to adopt a transversality approach to water governance, one that breaks sectoral silos and embeds water at the centre of planning for poverty reduction, health, agriculture, energy, and climate resilience. Traditional, single-sector strategies are no longer adequate in the face of complex and socioeconomic inequalities. Instead, we need integrated policy frameworks that bring government, industry, civil society, and communities together to co-create solutions that benefit both people and the planet" highlighted Sh. Raj Bhushan Chaudhary, Minister of State for Jal Shakti, Government of India, captivating over 500 online participants, experts, and global participants

Echoing this urgency, Sh. Amit Gosh, Additional Chief Secretary for Health, Medical Welfare, and Family Welfare, Uttar Pradesh, shared a stark personal tale: as a young trainee, contaminated village water hospitalized him yet locals endured it daily. In UP, where 53% of female adolescents' battle anaemia tied to waterborne ills, Gosh framed water transversality a "pro-poor poverty intervention. He called for convergence: linking water to nutrition, health surveillance, and even medical colleges for evidence-based inclusion, declaring poverty "the biggest polluter."

# High-level side event on Accelerating SDG 6 through science based solutions and enabling frameworks across the water climate nexus

High-level side event on Accelerating SDG 6 through science based solutions and enabling frameworks across the water climate nexus. Convened by India Water Foundation in collaboration with UNESCAP, UN-Habitat, and UNESCO during the Asia-Pacific Forum on Sustainable Development, the session brought together leading policymakers and experts to advance integrated, scalable solutions for water security across the Asia–Pacific region. During the discussion, Dr. Arvind Kumar, President, India Water Foundation highlighted the urgent need to move beyond fragmented pilots toward systemic action through integrated water–climate frameworks, innovative finance, and strong multi-stakeholder partnerships. The dialogue reinforced a clear message: achieving SDG 6 will require policy coherence, data sharing, nature-based solutions, and stronger regional collaboration to secure water, climate resilience, and sustainable development by 2030.

# NATIONAL INPERSON

## Water Sustainability Summit 2025

The Water Sustainability Summit 2025, organized by the PHD Chamber of Commerce and Industry (PHDCCI) in association with Water Today, convened in New Delhi on August 21, bringing together leaders from government, industry, academia, and civil society to deliberate on India's pressing water challenges. With changing rainfall patterns, recurring floods, shrinking rivers, and fast-depleting groundwater, the summit highlighted the urgent need for collective action and long-term strategies for water security.


Speaking at the summit, Dr. Arvind Kumar, President of the India Water Foundation, underscored that circularity in water management is no longer an option but a survival imperative. He cautioned that while policies increasingly mention recycling, reuse, and Zero Liquid Discharge (ZLD), actual implementation remains fragmented and compliance-driven. Citing India's water stress—18% of the global population but only 4% of freshwater resources, and a demand–supply gap expected to cross 70% this year—he emphasized that linear industrial models of "take-use-dispose" are unsustainable in the face of climate change, droughts, and glacial retreat.

Drawing from his national and international engagements, Dr. Kumar pointed to three urgent gaps: policy incoherence, where governance is fragmented and lacks a uniform framework; economic misalignment, where wastewater reuse and ZLD are seen as costs rather than opportunities; and weak ESG accountability, where superficial disclosures allow greenwashing to persist. He urged that India must begin treating circular water practices as strategies for resilience, not just compliance. Without systemic reform, he warned, India risks undermining progress on SDGs 6, 12, and 13, putting both economic growth and national stability at stake**.**

# World Summit on Disaster Management

Dr. Arvind Kumar, President, India Water Foundation, delivered an insightful address at the World Summit on Disaster Management (WSDM) during the Special Technical Session on "Himalayan Water and Climate Disasters: Building Resilience in a Changing World." He highlighted the alarming transformation of Himalayan wetlands due to rapid warming three to five times faster than the global average leading to accelerated glacier melt, expanding glacial lakes, shifting monsoon patterns, and escalating risks of floods, landslides, and droughts. Emphasizing that wetlands serve as natural infrastructure for disaster resilience, he underscored the urgent need to reverse India's rapidly declining wetland ecosystems. Dr. Kumar strongly advocated for ecosystem-based adaptation (EbA) as a cost-effective, community-centric strategy, and outlined eight priority actions encompassing robust enforcement, hydrological monitoring, pollution control, integration of traditional knowledge, and convergence of policies across sectors. Citing successful models such as IWF's partnership-driven work in Meghalaya, he stressed that solutions exist and must now be implemented with political will, coordinated action, and a unified commitment to safeguarding lives and livelihoods in the Himalayan region and beyond.

https://www.youtube.com/watch?v=L3DDbRYWSDU

# International Workshop cum Training Programme on "Land and Water Resource Management for Sustainable Development and Rural Livelihoods"

Dr. Arvind Kumar, President, India Water Foundation, addressed the International Workshop-cum-Training Programme on "Land and Water Resource Management for Sustainable Development and Rural Livelihood," jointly organized by NIRDPR and AARDO. In his remarks, he emphasized that water lies at the heart of climate disruption and sustainable development, shaping agriculture, livelihoods, health, and resilience. He highlighted the growing pressures on land and water systems, the accelerating impacts of climate change, and the urgent need for integrated governance to secure long-term sustainability for rural communities.

Dr. Kumar underscored the importance of adopting systemic approaches such as the Water–Energy–Food Nexus, Integrated Water Resources Management (IWRM), and ecosystem-based adaptation (EbA) to address emerging challenges. He stressed that only through holistic planning, community-led action, and strong institutional coordination can countries build resilient rural economies. His address set the tone for the workshop, encouraging participants to rethink water as a strategic resource that drives rural development, environmental security, and inclusive growth.

# All India Radio's 'Surkhiyon Mein' program

Dr. Arvind Kumar, President, India Water Foundation, speaking on All India Radio – Akashvani, highlighted the far-reaching impact of the Jal Jeevan Mission and India's broader water governance vision, emphasizing how assured tap water supply is transforming rural life by improving public health, reducing child mortality, enhancing livelihoods, and empowering nearly 9 crore women through time saved and leadership roles in village water governance. He underscored the significance of the National Water Awards as a whole-of-society platform that incentivizes action across states, districts, panchayats, institutions and individuals, reinforcing India's mission of Jal Samridh Bharat. Dr. Kumar also stressed that water must be treated as a strategic national resource amid rising demand, climate pressures and declining groundwater, calling for large-scale recharge efforts, efficient agricultural water use through schemes like PMKSY, and responsible industry–community action to protect water bodies. He urged every citizen to adopt household-level conservation practices rainwater harvesting, greywater reuse, and eliminating wastage reminding that water security is both a national priority and a collective responsibility.


https://www.youtube.com/watch?v=OmkqIyHcbMs&list=PLcDghvQhYD9Is__9ul9bJoN2qpBe_0IF5&index=14

# ‘Where Water Flows Equality Grows’


The World Water Day 2026 workshop, themed “Water and Gender – Where Water Flows, Equality Grows,” Organised by UNOPS in collaboration with NITI Aayog, Government of India, during their Panel Discussion 2 on Sustainability, Resilience, Water Quality, and Operation & Maintenance , Dr. Arvind Kumar, President, India Water Foundation underscored the critical disconnect between well-defined policy frameworks and their implementation at the grassroots level in rural water management.

He noted that participatory mechanisms such as Village Action Plans are often bypassed due to pressure to achieve rapid coverage targets, resulting in limited community ownership and accountability. Dr. Kumar emphasised that without meaningful involvement of local communities in planning, decision-making, and monitoring, long-term sustainability of water systems remains at risk. His intervention highlighted the need to strengthen governance processes and prioritise inclusive participation to ensure enduring outcomes under the Jal Jeevan Mission.

# Water Stewardship & Environmental Resilience Award to India Water Foundation at Bio-Tex Fashion & Circularity Awards 2026

The India Water Foundation was honoured with the Water Stewardship & Environmental Resilience Award at the BioTex Fashion & Circularity Awards 2026 in Gurugram. The recognition highlights IWF’s leadership in promoting sustainable resource management and environmental responsibility across industries, including textiles. The award acknowledges its contributions to policy advocacy, climate action, and advancing circular production systems. This milestone reinforces IWF’s role in driving integrated, future-ready approaches to environmental governance and sustainable development.

# NATIONAL ONLINE

## Recalibrating Environment Law for Good Governance, Justice and Sustainability

As part of the observance of Samvidhaan Diwas, the Centre for Public Policy and Good Governance (CPPGG), Dr. B.R. Ambedkar National Law University (DBRANLU), Sonepat, organised a special online lecture on 1 December 2025, delivered by Dr. Arvind Kumar, President & Founder, India Water Foundation. The lecture brought together students, scholars, and practitioners to reflect on the constitutional and governance dimensions of environmental protection in India.

Speaking on the theme "Recalibrating Environmental Law for Good Governance, Justice and Sustainability," Dr. Kumar presented a comprehensive and timely analysis of India's evolving environmental governance framework. He traced the constitutional foundations of environmental protection, examined the judiciary's pivotal role in advancing environmental rights, and highlighted the expanding scope of environmental laws, regulatory institutions, and enforcement mechanisms that shape contemporary governance.

Dr. Kumar further discussed key policy directions, including reforms in Environmental Impact Assessment (EIA), waste management rules, climate commitments, nature-based solutions, and the growing role of the National Green Tribunal. Emphasising the need for integrated, transparent, and future-ready governance, he underscored that environmental justice, sustainability, and climate resilience require not only strong legal frameworks, but also robust institutions, empowered citizens, and effective multi-sectoral collaboration.

**https://www.youtube.com/watch?v=eASVqZTsTlI**

# MEETINGS

## Meeting with Dr. G Narendra Kumar, IAS, DG, NIRDPR

Dr. Arvind Kumar, President, India Water Foundation, met with the Director General of NIRDPR Dr. G Narendra Kumar, IAS during his visit to Hyderabad for the International Workshop-cum-Training Programme organized in collaboration with the African-Asian Rural Development Organisation (AARDO) on "Land and Water Resource Management for Sustainable Development and Rural Livelihood." During the interaction, he presented his latest publication, Friday Musings, and discussed IWF's initiatives focused on water security, sustainability, and strengthening rural resilience.

## Meeting with Shri Kamlesh Paswan, Hon'ble Minister of State, Ministry of Rural Development

Dr. Arvind Kumar, President, India Water Foundation, met Shri Kamlesh Paswan, Hon'ble Minister of State, Ministry of Rural Development, to discuss strengthening rural water security, ecosystem restoration, and community-led development. He presented his publication Friday Musings, the report Revitalizing the Wetlands of India, and the proceedings of the Water Transversality Global Awards & Conclave 2024. The meeting highlighted shared commitment toward advancing sustainable rural development and environmental stewardship.

## Meeting with Ms. Mikiko Tanaka, Head, UN ESCAP South and South-West Asia Office

The successful convening of the First Advisory Council Meeting for the Second Edition of the Water Transversality Global Awards and Conclave 2026, held in hybrid mode on 4th July 2025 at the India Water Foundation's corporate office. The meeting marked the official launch of strategic planning for the upcoming conclave, setting the tone for an ambitious and collaborative event. Discussions centered on several key themes, including institutional partnerships, thematic sessions, stakeholder engagement, ESG integration,

and international collaboration. Participants shared valuable insights that will guide the next phases of preparation and execution.

The following esteemed members were present in person: Dr. Arvind Kumar, President, India Water Foundation (IWF); Ms. Mikiko Tanaka, Director and Head, UNESCAP-SSWA; Dr. Ajeet Tyagi, Patron and Chairman, Committee on Climate Change, IWF; Mr. M. P. Singh, Chief Advisor, IWF; Mr. Sunny Pandya, Chief Advisor, National Strategy & State Leadership, IWF; Ms. Shweta Tyagi, Chief Functionary, IWF

Joining virtually were: Sh. Ranjit Kumar Pachnanda, Honorary Patron & Chairman, Committee on WaterEnergy-Food Nexus, IWF; Prof. Ashok K. Keshari, Department of Civil Engineering, Indian Institute of Technology Delhi; Mr. Ruchir Mishra, Legal Advisor, IWF

The meeting reaffirmed the collective commitment of the Advisory Council to shape a more inclusive, impactful, and globally relevant second edition of the Conclave. We express our sincere gratitude to all members for their meaningful participation and look forward to continued collaboration as we move forward in our mission to promote water transversality for sustainability and resilience

# Strategic Preparations underway for the Water Transversality Global Awards and Conclave 2026

Preparations are gathering strong momentum for the Second Edition of the Water Transversality Global Awards and Conclave 2026, scheduled for 6–7 March 2026 in New Delhi. In this context, the India Water Foundation (IWF), together with its Knowledge Partners, convened a strategic planning meeting on 23 December 2025 to advance collaborative planning and programme development. The discussions focused on strengthening partnerships with state governments, industry leaders, academic institutions, and key government entities. The meeting reviewed thematic tracks covering technological innovation, disaster risk management, and climate adaptation, and mapped a prospective list of national and international speakers. Key decisions included expanding collaborative partnerships, engaging additional global agencies and award nominees, and extending the abstract submission deadline to 20 January 2026 to encourage wider research and knowledge participation. The meeting was attended by senior members and advisors of IWF and partner institutions, including Dr. Arvind Kumar, President, IWF; Ms. Shweta Tyagi, Chief Functionary, IWF; Mr. Rishi



Spaces, 17th Floor, Max Towers, Sector 16B, DND Flyway Noida-201301, India

Srivastava (ICID); Prof. Anil Kumar Gupta, IIT Roorkee and Principal Advisor, IWF; Dr. S. K. Sharma, Principal Advisor, IWF; Dr. Niranjan Prasad, Principal Advisor (New and Renewable Energy), IWF; Mr. Mahendra Pal Singh, Chief Advisor, IWF; Prof. A. K. Keshari, IIT Delhi; Mr. Ruchir Mishra, Legal Advisor, IWF; and Ms. Kavita Prasad, Senior Consultant, IWF. The collective emphasis remained on deepening multi-stakeholder collaboration, fostering knowledge co-creation, and recognising leadership and innovation that advance sustainable water management and ecosystem stewardship at national and global scales.

# VIDEO MESSAGES

## World Wetlands Day 2026


On World Wetlands Day2026, Dr Arvind Kumar, President India Water Foundation highlights why wetlands must be recognised as strategic natural infrastructure central to **India's water security**, **biodiversity**, **livelihoods**, **nutrition**, **climate resilience**, and **cultural heritage**. This year's theme, **Wetlands and Traditional Knowledge**: **Celebrating Cultural Heritage**, reminds us that community-led wisdom, integrated with modern science and policy, offers scalable solutions for sustainable development. As India reaches 98 Ramsar Sites, the call is clear: protect wetlands not just as ecosystems, but as foundations of economic resilience and human well-being**.** https://youtu.be/WehwaMqA6M8


## 30-Day Countdown to the Water Transversality Global Awards & Conclave 2026 Begins

**Dr. Arvind Kumar**, **President and Founder** of the **India Water Foundation**, invites global leaders, policymakers, industry partners, researchers, and practitioners to unite at the **Second Edition of the Water Transversality Global Awards & Conclave**. Set against the backdrop of the triple planetary crisis the Conclave will champion **ESG Transversality** to advance a **sustainable Water–Energy–Health – Environment Nexus**. The focus moving from dialogue to decisive action through policy innovation, collaborative governance, and scalable, real-world solutions

https://youtu.be/WehwaMqA6M8

# ARTICLES

# Toward a Greener Horizon: Strategic Pathways for India's Industrial Transition by 2047

**Dr. Arvind Kumar,**
President India Water Foundation

## Abstract

At this historical moment, India has a favourable opportunity to redefine its industrial pathway towards sustainable and greener pathways by the Viksit Bharat @2047. Therefore, the purpose of this paper is to examine how the opportunities created by green industrialization can promote not only inclusive growth but also energy security and India's competitiveness in a global economy undergoing decarbonization. Drawing insights from India's policy regime, emerging technologies, and sectoral potential in renewables, electric mobility, and circular manufacturing, the study outlines the strategic imperatives for transitioning to low-carbon industrial development. Emphasis is placed particularly on MSME adaptation, climate finance mobilization, and regulatory innovation to stimulate green ecosystems. This paper lays down the enablers and institutional reforms that India would require to ensure that green industrialization becomes a development opportunity rather than just being a climate obligation. India.

## 1. Introduction

India's industrial aspirations have been given a boost under the Viksit Bharat @2047 vision, a goal to be realised for the centenary of independence. Thus, manufacturing remains at the heart of the transformation, acting as a lever of inclusive growth, employment generation, and strategic autonomy. Manufacturing value addition is expected to grow from $717 billion in 2024 to $1.45 trillion in 2030, thus contributing to the gargantuan GDP projection of $7.5 trillion (Sharma, April 4, 2025), as according to the *India Industrial Development Report 2024-25*. Hence, the Production-Linked Incentive (PLI) scheme, Make in India 2.0, and PM Gati Shakti are the three overarching aids that place the development of infrastructure and FDI attraction into the policy framework to elevate India among the top-five manufacturing hubs of the world (IBEF, 2025).

The Viksit Bharat roadmap visualizes an industrial transformation that also addresses sustainability, digitalization, and global competitiveness. The Union Budget 2025-26 has identified the clean-tech sectors as solar PV modules, EV batteries, and high-voltage grid infrastructure, alongside other priorities included under the National Manufacturing Mission (BDO India, 2025). These are in line with India's renewable energy target of 500 GW by 2030 and its long-term vision of 1,800 GW by 2047, as stated by Joshi (January 29, 2025). Infrastructure projects, such as multimodal logistics parks and dedicated freight corridors, will be established to reduce logistics costs, which account for over 13 per cent of GDP. Digital

integration in supply chains and industrial parks further strengthens the ecosystem, enabling MSMEs to make meaningful contributions to the global market.

Intending to raise current expenditure from 1.25% to above 2% of GDP by 2030, India's industrial strategy also emphasizes innovation and research and development. Driving this momentum requires a partnership with the business community. The India Semiconductor Mission hopes to generate about one million jobs by 2026, spread across six manufacturing sites and several OSAT units (HRNXT, July 11, 2025). Furthermore, by 2030, India's digital economy is expected to account for over 20% of national income, therefore, surpassing total agriculture and manufacturing (IBEF, 2025). More than a need for growth, the strategic shift to high-tech manufacturing sets India up to dominate the world in digital industrialization, artificial intelligence integration, and sophisticated manufacturing.

With 30.1% of GDP, over 35% of manufacturing output, and almost 46% of exports, the MSME sector remains a backbone of India's industrial ambition (Manjhi, 2023). MSMEs are being enabled through updated categorization standards, credit schemes, and targeted programs like SAMARTH and PM Vishwakarma, housing over 6.5 crore registered units and employing 28 crore persons. A 10,000 crore Fund of Funds was launched in the Union Budget 2025–26 to promote entrepreneurial expansion, increase investment ceilings, and credit guarantees to speed up formalization. These initiatives aim to position MSMEs as vital participants in India's evolving industrial landscape, rather than merely supplementary ones. Inclusive and resilient India's industrial change toward Viksit Bharat results from a combination of the pillars of sustainability and innovation.

For India, trying to find a balance between rapid economic growth and environmental sustainability, green industrialization has become a strategic imperative. The rationale is founded on the impetuous necessity to decarbonize industries with the highest emissions, such as cement, steel, and oil & gas, which together account for around 23% of India's total greenhouse gas emissions (EY, 2025). Industrial emissions are expected to reach 2 gigatons of $CO_2$ annually by 2040, making green technologies a necessity for long-term resilience. In addition, sudden policy changes all over the world and shifting consumer preferences are accelerating the rise in demand for low-carbon goods, hence rendering green industrialization a competitive advantage rather than a constraint (UNIDO, 2025).

Green industrialization has the power to be transformative economically by creating new markets, generating innovations, and providing jobs in new industries. According to the report of LSEG on the Green Economy (2025), the global green economy now comprises 8.6% of listed equities, with a market capitalization of $7.9 trillion, thus making it the fourth-largest by sector. In the case of India, green manufacturing and clean energy are truly significant to the projected $7 trillion GDP by 2030 (EY, 2025). An investment in green hydrogen, circular manufacturing, and renewable infrastructure will indeed reduce fossil fuel dependence but will also stimulate inclusion, enhance energy security, and enable industrial self-reliance.

The paper bases its foundation on two interconnected research questions: (i) What strategic pathways can India pursue to accelerate green industrialization within the Viksit Bharat @2047 framework? and (ii) How do policy, innovation, and sectoral readiness come together to maximize economic and environmental benefits? Hence, the paper tries to answer these questions using a mixed-methods approach that combines policy analysis with the interpretation of secondary data and comparative case studies in the late industrialization sphere. Government reports, economic forecasts, and sustainability indices are systematically reviewed to identify trends and gaps. Further sectoral analyses around MSMEs, renewables, and manufacturing clusters provide complementary, granular insights into the implementation challenges and options faced along India's industrial development path.

## 2. Global Trends and Lessons from Late Industrialisers

Currently, the global green industrialization trend is shaped by circular economy, decarbonized supply chain, and finance mechanisms (UNIDO, 2025). Renewable energy, green AI, and nature-positive means are being brought into the industrial policy framework with a view that the circular economy might reach $2.88 trillion by 2031 (Economist, January 10, 2025). Instances such as China and Brazil as late industrialisers bring into focus the question of the importance of the sequencing of innovation, domestic market formation, and alignment between industrial and climate policies (ISID, 2022). Early steps in e-mobility and the manufacture of renewables in China offer its example of techno-industrial planning and state-coordinated implementation in the gleaning of first-mover advantages in developing green industries.

### 2.1 Comparative insights from China, Brazil, and South Africa

Currently, the global green China's green industrialization is a primarily state-centred and innovation-driven approach that intertwines environmental concerns with economic competitive concerns. Initially, renewable energy, clean electric mobility, and green manufacturing systems took a substantial amount of investment after the "Made in China 2025" plan had been put in place, and now, these factors are becoming more involved in grand-scale green transformations. Approximately 40 percent of the GDP growth was accounted for by the green economy in 2024, implying the green economy acts as a growth engine rather than a constraint (East Asia Forum, 2025). China is the leading country in solar and wind capacities, with installation expected to cross the 1,800-GW mark by 2025, along with the top supply chains for lithium-ion batteries and solar modules (Li & Du, 2025). The Green and Low-Carbon Development Action Plan (2025–2027) has picked circular economy concepts, green hydrogen, and carbon capture technologies for policy coordination and investment incentives (GPP, 2025). It is the creation of synergistic ecosystems wherein industrial upgrading, environmental governance, and technological innovation complement and reinforce each other that makes China great. On the contrary, defensive trade remedies by the countries have succeeded amid concerns of overcapacity and trade imbalance, coupled with escalating geopolitical tensions, thus calling for a transparent and cooperative framework on the global level without delay.

According to Brazil's perspective, the green industrialization strategy operates with the assumption of an abundant natural capital base and renewable energy base that meet almost 90% of electricity demand (FT, May 13, 2025). Hard-to-abate sectors—steel, cement, and chemicals—are transformed through the implementation of the NIB policy and ENDI into bioenergy, electrification, and circular economy options (GoB, 2025). These Brazilian green steel and aluminium are four and seven times less carbon-intensive than global averages, respectively, thus hinting that the country may become an international hub for low-emission commodities (BCG, 2025). Brazil secured USD 250 million from CIF for decarbonization activities, the foremost being blended finance, hydrogen hubs, and industrial innovation (Demirkol, June 20, 2025). What Brazil follows is an approach for inclusive growth, job integration, and regional equity, marked by very strong cooperation between the private and public sectors and institutional reforms. Yet there remain sticky structural issues ranging from financing shortfalls, infrastructure bottlenecks, to policy fragmentation. The opportunity open to Brazil lies in scaling up its green industrial ecosystem and then shaping international standards through its COP30 presidency, thereby aligning concretely with global climate goals.

South Africa's green industrialization course of action is moving towards policy reform, building of infrastructure, and regional integration. That, by the Green Hydrogen Strategy and the $20 billion green ammonia project at Hive Coega, declares intent for continental superiority of clean energy exports (EA, 9 July 2025). Transition financing is the $474.6 million loan for infrastructure governance and green growth from the African Development Bank (MSN News, 2 July 2025). South Africa's industrial policies seem to increasingly favour PGMs, which are crucial to hydrogen fuel cells and sustainable aviation fuel, thus bringing global attention to the country's mineral resources concerning rising demand for green technologies (Mining Weekly, 2025). The KwaZulu-Natal Industrial Technology Exhibition, KITE 2025, features automation, energy efficiencies, and innovations in circular manufacturing, which are positive indicators for the emerging industrial modernization ecosystem (Zawya, 7 July 2025). Energy costs and skills development continue to be sore points, with the harmonization of regulations still far-fetched. Amidst all challenges, there lies a great opportunity under the G20 South Africa presidency to canvas for inclusive green industrial policy and regional value chains in tandem with an Africa agenda that is bolder still (CDH, 27 May 2025). South Africa has shown advancements in dealing with unity, sustainability, and structural transformation, such that it hopes to be an agent towards Africa's greener industrial future.

### 2.2.Key success factors and missteps

China's green industrialization has been a successful story owing to the central planning system, heavy public capital investment, and strategic coordination between the country's industrial and climate policies, to dominate international supply chains of solar, EV, and green hydrogen (OEF, February 2025). But trade frictions have come about from capacity-related issues on the supply side for solar modules, and from concerns over transparency and sustainability (Li & Du, 2025). In turn, Brazil derives its strength from its renewable-energy platform and low-carbon

commodities, with the implementation of inclusive policies such as Nova Indústria Brasil and the National Industrial Decarbonization Strategy (GoB, 2025). However, these have faced several delays due to issues relating to financing gaps and fragmented governance (BCG, 2025). South Africa's green transition hinges upon hydrogen and mineral beneficiation, with flagship endeavours such as Hive Coega and regional integration under its G20 joint presidency (EA, July 9, 2025). Yet, persistent high energy costs, regulatory incoherence, and poorly developed skills development mechanisms keep struggling barriers to making things smooth in this regard, which thus highlight the need for coherent policy ecosystems and adaptive governance for a sustainable green transition.

### 2.3.Applicability to India.

Projections suggest that India would, on one hand, forge ahead toward becoming a developed economy by 2047 and, on the other, enjoy the status of being a country with net-zero emissions by 2070. Therein lies massive applicability for environmental industrialization in the country. On the one hand, fast becoming the fastest-growing large economy, India faces increased pressure to decarbonize its industrial sector. On the other hand, in a country like India, steel, cement, and oil & gas, as the largest emitters, are responsible for more than 30% of the country's emissions collectively (EY, February 18, 2025). To further demonstrate its intent toward the sustainable model for industrial development, the government foresees the achievement of 500 GW of renewable power capacity by 2030, along with the National Green Hydrogen Mission and the PLI schemes for clean technology manufacturing (EY, February 18, 2025; ISID, 2022). However, since the very beginning, it has proved difficult but not impossible to integrate the green intention into this largely time-bound and targeted implementation-oriented framework of Indian industrial policy (ISID, 2022). A Green Industrial Strategy has also emerged to ensure a balance between competitiveness, climate obligation, and inclusiveness in light of the changing ESG regulatory environment and global trade configurations (Mondaq, June 10, 2025). Above politics, the sectors of technology and industry must walk united into India's green industrialization, where current competitiveness must be balanced with climate commitment and inclusiveness. The successful operationalization of this balancing framework will mark either the success or failure of India.

## 3. India’s Policy Landscape and Industrial Readiness

India’s policy landscape for green industrialization is fast-changing, with ambitious targets and sector-specific interventions. The National Green Hydrogen Mission, PLI schemes, and the PAT program are building upon a strategic shift to decarbonize industries that are highly emission-prone, like steel, cement, and oil & gas (EY, February 18, 2025). India has achieved more than 209 GW of renewable capacity as of January 2025 and is, therefore, in the process of accomplishing the target of 500 GW by 2030 (EY, February 18, 2025). Industrial readiness, however, is not at par—large firms are moving toward green tech, while MSMEs face severe financial and technical constraints. These gaps can be bridged through targeted incentives and ecosystem development.

### 3.1.National Manufacturing Policy, PLI schemes, Make in India

The National Manufacturing Policy, first introduced in the year 2011 and watered down through the 2025–26 Union Budget, is considered to be the heart of the Indian industrial framework in the broader Viksit Bharat @2047 vision. The Policy envisages enhancing the share of manufacturing in GDP to about 25%, concomitant with the generation of employment opportunities for nearly 100 million people through globally competitive industrial ecosystems. The newly instituted National Manufacturing Mission will extend this ambit of vision to include clean-tech priorities, MSME empowerment, and digital infrastructure. The five corollaries to this are ease and cost of doing business, future-ready workforce development, MSME dynamism, technology availability, and product quality enhancement (PIB, February 1, 2025). The mission supports small medium and large industries through policy road maps and governance frameworks, focusing on industries of interest, namely Solar PV Cells, EV Batteries, and High Voltage Transmission Equipment, amongst which are also targeted schemes such as the Focus Product Scheme for Footwear and Leather, envisaged to generate a turnover of ₹4 Lakh crore and employment to 22 lakh (ET, February 1, 2025). The policy focus on clean-tech manufacturing and regional industrial clusters is a big signal of the intended shift towards sustainable and inclusive industrialization; however, coordination between the central ministries and the state governments shall be the determining success factors.

After the launch of the Production-Linked Incentives scheme in 2020, the production-based incentive has been enlarged enormously in the 2025-26 budget to enhance domestic manufacturing. With the massive allocation of ₹1.97-lakh-crore across 14 sectors, the PLI regime is targeted at industries such as electronics, pharmaceuticals, autos, textiles, and renewable energy (PIB, February 1, 2025). The 2025-26 budget raised the allocations greatly, from ₹5,777 crore to ₹9,000 crore for electronics and IT hardware and from ₹346.87 crore to ₹2,818.85 crore for automobiles (India Briefing, March 5, 2025). These incentive schemes had, by August 2024, actually attracted investments of ₹1.46 lakh crore, with a few forecasts suggesting investments exceeding ₹2 lakh crore in the upcoming year. Such effects can be witnessed in mobile manufacturing, where India was a net importer before the scheme, but it has now turned a net exporter with the production of 33 crore units in 2023-2024 (PIB, February 1, 2025). The pharmaceutical industry is also witnessing an increase in exports and a decrease in dependence on bulk drugs. Still, challenges remain in areas such as IT hardware and specialty steel, with low value addition and international competitiveness being fully attained. PLI 2.0 is, therefore, envisaged to work on these fronts by tying the incentives to domestic value addition and export performance so that deeper integration is realized with global supply chains.

The Make in India scheme has played a major role in changing India's industrial face over the past decade since it was launched in 2014. However, the legacies are mixed. The initiative has indeed brought an instantaneous enhancement of India's ranking in terms of ease of doing business and has been able to attract foreign direct investment above 600 billion dollars between 2014 and 2023, while the very chief purpose remains somewhat fulfilled. The share of

manufacturing in GDP has remained stagnant at around 17 percent, an abysmal contrast to the desired 25 percent by 2025 (PIB, September 25, 2024) Employment generation too, failed to keep pace, saddled by structural impediments like vexatious land acquisition, multiplicity of labor laws, and lack of supply chain coordination. Comparatively, the ones who shine with huge success are mobile and defence manufacturing, while textiles and electronic components suffer from negative R&D investment and a lack of scale. Unfortunately, for the entire scheme with a wide and general approach, the focus of strategy has been derailed, allowing much sharper and narrower methods of intervention, such as the National Manufacturing Mission and the PLI schemes. As India goes forward, Make in India must gradually change into being an exabyte, an innovation-oriented scheme that ties industrial development with sustainability, regional equity, and global competitiveness.

### 3.2.Regulatory incentives and fiscal challenges

India's regulatory incentives for green industrialization have evolved into a multi-tiered framework aimed at accelerating sustainability across sectors. Key instruments include the National Action Plan on Climate Change (NAPCC), the Perform, Achieve, and Trade (PAT) scheme, and the National Green Hydrogen Mission, each designed to reduce energy intensity and promote clean technologies (EY, 2025; Dutta, February 8, 2025). The PAT scheme alone has saved approximately 17 million tonnes of $CO_2$ equivalent emissions in its first three cycles, incentivizing energy efficiency through tradable certificates (Dutta, February 8, 2025). Additionally, the Union Budget 2025 introduced tax exemptions on critical minerals and capital goods for EV and battery manufacturing, alongside concessional wheeling charges and open access for renewable energy under the Electricity Act (EY, February 18, 2025). These incentives are complemented by ESG mandates and sustainability-linked procurement policies, which are reshaping industrial compliance norms. However, enforcement gaps and limited SME inclusion remain persistent challenges, necessitating streamlined regulatory processes and stronger institutional capacity to ensure equitable adoption of green practices.

While bold policy commitments can be made, India is undoubtedly at the biggest frontline of fiscal challenges for scaling up green industrialization. In contrast, the allocation for renewable energy by the Union Budget stands at ₹1.5 lakh crore and ₹600 crore for the Green Hydrogen Mission in 2025, but remains glaringly inadequate for the environment sector when compared with the overall increase in budgets (TERI, February 1, 2025). Funding in the Ministry of Environment, Forest, and Climate Change was only a measly 2.5% boost, putting essential sectors like biodiversity, waste management, and climate resilience at risk (TERI, February 1, 2025). The unavailability of an integrated framework for green budgeting, along with dispersed fiscal incentives across ministries, also severely limits strategic coherence. Small and medium enterprises, which contribute almost 45% of industrial output, are denied access to green finance, while many of their technologies require sizable upfront costs. Environmental degradation annually costs about $80 billion in India, making a strong fiscal plan an economic necessity requiring the funds (World Bank, March 6, 2014). All these gaps need to be filled, from targeted

subsidies to blended finance models to budgetary allocations linked to outcomes, for green industrialization to be scaled up and still be inclusive.

### 3.3.Institutional Capacity for Green Transitions

The budding initiation of India's green transition for ambitious climate objectives has all happened so far at the policy formulation level, where lies unevenness and fragmentation in institutions. There have, in the past, been national bodies such as MoEFCC and NITI Aayog as well as the Apex Committee for Implementation of Paris Agreement (AIPA), which have functioning debates regarding the coordination of climate action. However, inter-ministerial cooperation as a spirit thing is a very rare phenomenon(Singh & Kolluri, 2025). Such sector-wise legislations like the Electricity Act raise doubts about the coherence concerning mitigation and adaptation efforts in the absence of a National Climate law. Moreover, precisely these institutions at the state level lack the technical capacity and fiscal autonomy required to implement climate programs tailored to region-specific vulnerabilities, especially in cases like flood-prone Assam or drought-prone Maharashtra. Climate adaptability scorecards and decentralized planning frameworks have also been suggested, but implementation is uneven. The problem is said to be worsened with a weak monitoring and evaluation system, which weakens accountability and transparency concerning climate expenditures and impacts(Singh & Kolluri, 2025).

The gaping holes concerning capacity-based financing and gap-in-implementation pose very serious problems. The IEEFA's latest reports (July 9, 2025), saw that the fault lines of a poor Just Transition programme were apparent among stakeholders at the ministries' levels, regulators, and financial institutions concerning the design and imposition of instruments, as an outcome of proper coordination, training provisions, and data systems being absent. Although Business Responsibility and Sustainability Reporting (BRSR) and green bonds are gaining momentum, their integration with mainstream resource mobilization is still in the nascent stages. A lag in climate-related disclosures on the side of institutional players, with specific reference to MSMEs and subnational levels, has been noted by the Reserve Bank of India and SEBI. Strengthening institutional capacities will require an equal focus on the national curriculum, inter-agency coordination, and performance-based incentives, to eventually be environmentally sound, socially inclusive, and economically resilient in its green transition in India.

## 4. Sectoral Opportunities and Technology Pathways

India's green industrialization gives attractive opportunities in various sectors, viz., renewable energy, electric mobility, and circular manufacturing. By January 2025, India had stepped up to cross the 209 GW mark in renewable power generation. And now in solar PV, wind, and green hydrogen, infrastructure is quickly getting aligned on a scale that is adequate to meet the 500 GW targets by 2030 (EY, February 18, 2025). Steel and cement use low-carbon production, electric arc furnace, green cement blends, solar-powered machinery, and digital energy audits in one set of technologies. Carbon capture utilization, storage, and AI-based resource optimization,

and green hydrogen-based blending in refining and fertilisers are creating new technological frontiers for the ecosystem of low-industry contamination.

### 4.1Renewable Energy (Solar, Wind, Green Hydrogen)

Offering a venue by which to isolate growth from environmental degradation, renewable energy stands as the powerhouse of green industrialization in India. As of July 2025, renewables contributed nearly half of the total installed power capacity in the country, set to achieve a 500 GW non-fossil installation capacity by 2030 (GreenLeaf, July 10, 2025). It, therefore, implies that the nature of the transition is not only ecological but also economic and strategic. Importantly, the imported fossil fuel dependence that renewable energy can curb ensures price stability and energy security. Moreover, it facilitates industrial upgradation through low-carbon manufacturing, digital infrastructure, and decentralized energy systems. Assuming cumulative investments to the tune of $300 billion by the year 2070, renewable energy will lie at the very heart of India's sustainable development model (PTI, July 9, 2025).

There is almost 50 percent of the total renewable capacity of solar power in India, which is said to be the lifeblood of renewable energy. Installed solar capacity in India is 97.86 GW, as of March 2025, and is expected to breach the threshold of 280 GW by 2030 (NetZero India, 14 April 2025). In the last decade, this sector saw a 4,000 percent increase backed by policies like PM Surya Ghar Yojana, PLI schemes, and customs duty exemption on some components (Economic Times, July 10, 2025). In FY 2025, installations consisted of 17.4 GW of utility solar and 5.15 GW of rooftop solar installations, with Rajasthan, Gujarat, and Maharashtra being the major contributors (JMK Research, 2025). While net metering and subsidy support through the rooftop segment are gradually unlocking energy access for rural households and agriculture alike, floating solar and agrivoltaics are further increasing space usage for the sector. A 38-fold increase was seen in module manufacturing capacity while cell capacity received a 21-fold increase obvious testimony to the push for Atmanirbhar Bharat in India (PTI, July 9, 2025). The solar sector now synergistically combines with clean technologies, green hydrogen, EVs, and smart grids. However, land acquisition, grid integration, and solar waste remain identified challenges. The Union Government committed ₹10,000 crore for solar infrastructure, ₹1,500 crore for R&D, and announced plans for further simplification on the approval side in the 2025 Budget (Energetica India, 2025). Given this, solar will take a big step up from market development and start powering India's industrial clusters, MSMEs, and export-oriented manufacturing.

Wind energy is complementary to solar generation in the sense that wind energy is generated in non-solar hours and more or less fits India's demand curve. By March 2025, India had 51 GW of wind capacity installed. The target is 140 GW by 2030 (Das, June 16, 2025). The resurgence has added 3.5 GW in the first half of 2025, an 84% increase on a year-on-year basis, with 17 GW more expected by the year-end (ET, July 10, 2025). Capacity additions are led by Gujarat, Tamil Nadu, and Karnataka, supported by power wind corridors and power ecosystems. India's wind turbine manufacturing capacity is robust, with 18 GW of production annually and 64%

leadership in the local value chain. Offshore wind generation, with a potential of 70 GW, is getting traction under the support schemes of VGF and SEZ-based projects in Gujarat and Tamil Nadu (Das, June 16, 2025). Procurement policies are encouraging wind-solar hybrids and wind coupled with energy storage systems to boost grid stability and reduce costs. However, bottlenecks in the grid, the lengthy process of land acquisition, and the underutilization of manufacturing capacity are some issues faced by the wind sector. There has been a cutback in allocations to wind in the Union Budget 2025, raising apprehensions about policy attention (Eninrac, 2025). Opportunities are unfolding via repowering of old turbines, regional integration on the back of India's G20 presidency, and export avenues to Europe and Australia. Wind is an important arm for RTC power solutions, especially as industrial electrification and green hydrogen production scale up in India. A level playing field with solar, targeted PLIs, and grid modernization has to be ushered in to maximize wind's potential in India's green industrialization (Tanti, July 3, 2025).

Green hydrogen is entering quickly as the source of clean energy generation in India for the hard-to-abate industrial sectors. Under the National Green Hydrogen Mission scheme, 5 MTPA green hydrogen production is proposed for 2030, investing around 19,744 crores in public and strategic interventions for manufacturing electrolysis and hydrogen production (MNRE, 2025). As of July 2025, there were announcements related to projects of 9.2 MTPA green hydrogen; among them, Odisha, Gujarat, and Karnataka constituted 82% of the announcements (PTI, 8th July 2025). Apart from steel, fertiliser, and refining, mobility and shipping projects are also piloting green hydrogen. Landed prices of green hydrogen are currently at least 2 to 4 times costlier than those of fossil-based hydrogen, but falling renewables tariffs coupled with domestic electrolyzers manufacturing may bring down the price to ₹1.37/kg by 2030. Port infrastructure is being developed in Kandla and Tuticorin for exports in a joint effort with the EU, Japan, and Gulf countries; this enhances the credibility of the hydrogen slogan for India (Invest India, July 6, 2025). The availability of water, grid integration, and a certification framework are some of the constraints; yet, India's staggered rollout of projects, demand aggregation under SHIP, and R&D will usher the country closer to transforming into a global green hydrogen power to reckon with.

### 4.2.Electric Mobility and Clean Transportation

Even so, electric mobility and clean transport shall be enabling fast-track endeavours of India's green industrialization process, catering, without doubt, to the decarbonization of the transport sector, which in itself contributes about 13.5% of the nation's greenhouse gas emissions (Insights on India, April 19, 2025). The major schemes of the Government, namely-FAME-II, PM E-DRIVE, and Electric Mobility Promotion Scheme, are all pushing towards persuading electric mobility into acceptance; 1.15 million electric two-wheelers and 159,000 electric three-wheelers were sold in FY 2024-25, growing by 21% and 57 % Year-on-Year respectively (PIB, April 1, 2025). The Union Budget 2025 has waived the customs duty on EV battery components to incentivize domestic manufacturing and make the products affordable (IndBiz, February 12,

2025). The launch of India's first truck subsidy scheme for electric trucks with a subsidy of ₹9.6 lakh per vehicle further incentivizes freight mobility, especially in high-emission sectors such as steel, cement, and logistics (Fortune India, 2025). Such initiatives shall thus reduce emissions, foster industrial innovations, create jobs, and provide energy security.

The emphasis on green transport and green logistics has now been further amplified with ten dedicated freight-level green corridors equipped with ultra-fast EV charging and hydrogen fueling stations servicing the major ports and industrial clusters. The Multi-Modal Logistics Parks are also being fitted with EV infrastructure to decrease logistics costs and promote India as a clean transport hub (Devdiscourse, July 10, 2025). At the forefront of urban sustainability, Bengaluru is promoting electric bikes and ecological awareness through the "Green Pledge 2025." The emergence of e-mobility can also be observed through the market introduction of advanced EV models such as Kia Carens Clavis EV and MG Cyberster, which have a longer range and smarter features and indicate consumer inclination toward sustainable transport (Hans India, July 11, 2025). These major developments further cement clean transportation as a key facet of India's industrial policy, in conjunction with the overarching targets of Viksit Bharat @2047 and net-zero emissions by 2070.

### 4.3.Circular Economy Innovations in Textiles, E-waste, Agriculture

Circular economy interventions changing resource flows into textiles and e-waste increasingly lead to shaping green industrialization in India. In the textiles sector, several brands pioneer fibre-to-fibre recycling and closed-loop manufacturing systems supported by eco-design principles and waterless dyeing, such as Doodlage and B Label, as illustrated under Bharat Tex 2025 (Textile Insights, 2025). This turnaround was also brought about by government measures such as the Production Linked Incentive (PLI) scheme and EPR laws, which are pushing for traceability and sustainable sourcing. On the other hand, India's e-waste sector, which was earlier ruled by informal dismantling, is being decked with several technologies like smart recovery, blockchain tracking, and consumer-friendly platforms for disposal like Epicircle that incentivize responsible disposal through digital rewards. Thus, they look forward to opening a circular battery economy worth $ 3.5 billion by 2030, while decreasing toxic pollution and creating green jobs (ET, July 9, 2025).

Circular agriculture is composed of practices such as bio-composting, wastewater reuse, and AI crop monitoring. The Google AMED API performs precise and timely field analyses and provides inputs for climate-resilient precision agriculture. Agricultural wastes are treated and converted into biocarbon, fodder, and biofuels, over 500 million tonnes produced in India per annum, and thereby supporting regenerative rural economies. Treated wastewater was valued at ₹630 million per day in 2021, which is set to triple with further investment towards irrigation and industrial reuse by 2050 (CEEW, 2024). Such sector transitions do not lie isolated from each other; instead, they lie alongside Mission LiFE and India's commitments under UN SDGs in the way forward to embedding circularity into the economic DNA of the country (Misra, July 1, 2025). Thus, these circular innovations are sharing the economy's transition, which intends to

lessen carbon intensity and resource dependency in our economy while aiding inclusive growth and industrial resilience, and ecological practices.

### 4.4.Role of Digitalization and Industry 4.0

In India, digitalization and Industry 4.0 are rapidly becoming important instruments in the quest for green industrialization, helping facilitate the transition from resource-intensive manufacturing processes to smart, low-carbon production. Since 2021, digital technology has represented on average about 20% of the total manufacturing expenditure, rapidly convertible into smart factories and data-driven operations by 2025, when it is estimated to represent no less than 40% of total expenditure (Invest India, 2024). By reducing wastage of energy and material with AI-based robotic arms, IoT-based tracking, and predictive excellence, automotive, electronics, and pharmaceutical industries, among others in India, find this transformation extraordinarily relevant (CII & KPMG, 2025). Crucially, within these programs, there are many supportive initiatives such as SAMARTH Udyog Bharat 4.0 and Digital India to further the cause of adoption among MSMEs, amongst other channels, including financial incentives and infrastructure support (CII & KPMG, 2025). Such technologies, while underpinning sustainability agendas, have a strong focus on enhancing operational efficiency through real-time tracking of emissions and the circular flow of resources.

In India, through digital supply chains and traceability mechanisms based on blockchains, e-waste and resource recovery have undergone significant restructuring. Recykal and Epicircle utilize AI and IoT interplay for reverse logistics and enforce ET to promote formal recycling and avert environmental hazards (ET, July 3, 2025). Industries engaged in agriculture and energy-intensive sectors see the use of smart sensors and edge computing for precision resource management, with digital twins and simulation models forecasting carbon footprints and production cycles optimizations (EY & FTCCI, 2025). These mechanizations are more of a drastic overhaul of industrial processes; sustainability, thus, gets embedded in the digital architecture of production. With Industry 4.0 and green industrialization merging, this avenue promises inclusive, resilient, and climate-conscious growth as India proudly brands itself a global manufacturing hub.

## 5. Role of MSMEs and Labour-Intensive Industries

Micro and small medium enterprises (MSMEs), along with labour-intensive industries, will form a fulcrum for sustainable green industrialization in India to scale and include both aspects of sustainable manufacturing. With 6 crore MSMEs contributing nearly 30% towards GDP, along with employing above 110 million people, this makes them an ideal tool for greening growth through their wide dispersion in rural and urban landscapes (NetZero India, June 2025). All the sectors with a labour-intensive nature, like textiles, leather, food processing, and toy making, are gradually adopting more energy-efficient technologies, approaches towards circular production, and eco-certifications like ZED (Zero Defect Zero Effect) through schemes such as MSE-GIFT and the National Manufacturing Mission. While other hurdles like limited access to green

finance/ upfront cost challenges have also emphasized targeted policy interventions like credit guarantee schemes, incentives for clean technology development, and skill training, per the agenda for net-zero India. Thus, the changes are bringing both ecological and socio-economic dimensions by creating green jobs as well as building resilient supply chains.

### 5.1.Opportunities and Constraints for MSMEs in Green Transition

It is the ability for rapid adoption of clean and sustainable practices unique to the MSME sector that fosters green industry promotion in India. Besides having over 6.3 core small businesses, these MSMEs provide around 30% of the GDP and employ more than 110 million workers. They, therefore, become a crucial participant in climate actions (NetZero India, June 2025). Renewable energy opportunities in a circular design of production and energy-efficient technologies are fast being considered in many sectors, such as textiles, food processing, and packaging. By 2025, it is predicted that 21% of MSMEs are going to tap into solar energy, while the energy-efficient machinery is going to be adopted by 31% in a bid to maximize their operational cost savings and minimise their carbon footprint (ET, June 16, 2025). There are several more incentive schemes like the ZED Certification Scheme, MSE-GIFT Programme, and the SIDBI Green Finance Scheme that facilitate clean tech upgrading and ESG compliance, all done by the government. MSMEs have further been supported through the digital implementation of Breathe ESG and Carbon Minus for emission monitoring and automated sustainability reporting to enhance their competitiveness in the international supply chain (NetZero India, June 2025).

Take on the challenges as many as ever to stay an environmentally sustainable option. High capital investments, no formal access to credit, and a lack of awareness of ESG benefits continue to be the key barriers. Hence, with funds already committed, the absence of direct subsidies and structured carbon transition-based frameworks limits the scope for most MSMEs to purchase energy-efficient or circular systems (Outlook Business, 2025). Furthermore, there is severe skills scarcity, especially in Tier II and III towns. Only 5% of MSMEs are engaged in cleantech R&D (ET, June 16, 2025). Fragmented infrastructure and difficult compliance processes also negate the incentive to adopt. Currently, less than 10% of MSMEs rely on formal green finance, while 33% do not even know of the various schemes like ZED. This green transition, without any target interventions such as ESG tool kits, sustainability accelerators at the regional level, and sectoral experts, stands the chance of becoming too big to tackle for an average citizen. Politically and strategically, making inroads in bridging such gaps is the most immediate requirement for the realization of India's net-zero ambitions.

### 5.2.Skill Development and Capacity Building

The handicraft-based MSMEs of India are increasingly acting as a potential agent for decentralized innovation and employment in the country's green transition. Slow movement has been witnessed to steady the pace of sustainability in this sector: by 2024, 21 percent of the

establishments were solar-powered and 31 percent used energy-efficient machinery, particularly those in the textiles and chemicals industries (ET, June 16, 2025). Government schemes such as Zero Defect Zero Effect (ZED), MSE-GIFT, and PM Surya Ghar encourage cleantech upgrades and ESG compliance (YourStory, 2025). Digital platforms like Breathe ESG and Carbon Minus are also tracking emissions of MSMEs and automating their sustainability reporting, helping their competitiveness in world supply chains (NetZero India, June 2025). Such developments showcase ever-growing consciousness among organizations that sustainability is no longer being viewed merely from a regulatory angle but as a topmost cost-cutting strategy, brand value-enhancing, and export-readiness perspective.

The structural and financial impediments in the green transition impede MSMEs. The very high initial investments for green technologies, other major hindrances being the lack of access to formal credit and disconnected infrastructure, particularly in tier-II and III cities, continue to be their growth-inhibiting factors. These allocations have been made, yet there are almost no subsidies or carbon transition roadmaps for the MSMEs concerned; thus, most MSMEs are unable to invest in renewable energy or circular systems (Outlook Business, 2025). Availability of technical expertise is another big challenge; only 5% of MSMEs are into clean-tech R&D, while 33% have no idea about schemes like ZED. Already, much awareness is building up and intent is growing, but implementation is stymied by the complexity of compliance and grievously inadequate green financing avenues per the 2025 Sustainability Perspective Index (SPeX) (SIDBI & D&B, 2025). So, unless targeted interventions like developing workable ESG tools, regional sustainability accelerators, and advisors based on sectors are developed, the green transition will remain a pipe dream for most. Bridging this gap is both a policy-enforced obligation and a strategic nudge towards India's net-zero ambitions.

### 5.3.Inclusive Growth and Employment Prospects

The green transition holds a promise to redefine the contours of inclusive growth and employment, thus constituting a truly transformative road to sustainability. As stated in Insights on India (June 3, 2025, it is projected that by 2047, 35 million green jobs will be created, and by 2030, the green economy will be worth almost $1 trillion. Thus, the entire employment landscape is undergoing a structural shift. Renewable energy, sustainable agriculture, electric mobility, and waste management are some of the newer sectors creating employment, with Tier II and Tier III cities expected to produce 35-40% of green jobs by FY28 (NLB Services, 2025). This dispersion of employment opportunities catalyzes regional equity and reverses urban migration. Conversely, the ongoing development of climate-resilient infrastructure and DRE favours local entrepreneurship and community-based livelihoods, especially in tribal and aspirational districts. The Skill Council for Green Jobs has so far trained over 560,000 people; meanwhile, PM Surya Ghar and National Green Hydrogen Mission initiatives are creating further demand for technicians, installers, and clean energy professionals (CEEW, January 2022).

The urgency for inclusivity in growth considers the need to take immediate cognizance of the imminent structural challenges, on which the World Bank holds that only about 5.9% of jobs in India today can be considered green, while 89.5% are neither green nor carbon-intensive. It is this very revenge that speaks strongly towards urging mass reskilling and big undertakings for reforms in the education sector (World Bank, 2025). The current Jobs Report of the World Economic Forum predicts that by 2030, up to 39% of the core job skills will change, which in turn necessitates collaboration among all stakeholders in the industry and academia in harmonizing the curricula towards sustainability (WEF, 2025). Gender and social inclusion remain two pressing dimensions, with green jobs heavily tilting toward men while the unequal access to training privileges predominantly the already deprived in far-flung locations. Thus, India should build inclusive systems for skill development, digital infrastructure, and special support to marginalized communities so that they may benefit from their rightful participation. Such convergence between climate ambition and job strategy offers avenues to inject social justice into economic growth; however, if this is to happen, it will rely upon innovations in policy, private sector partnerships, and engagement of civil society.

## 6. Climate Finance and Private Sector Engagement

Climate finance aids the green industrialization in India by acting as a catalyst for low-carbon technologies, resilient infrastructure, and clean energy generation. Meanwhile, private sector engagement contributes through capital, innovations, and scale: the conversion of climate commitments into operating realities. Climate finance thus tries to marry profit and sustainability through mechanisms including green bonds, blended finance, and public-private partnerships. It offers incentives for industries to cut emissions and invest in resource-efficient production. Also, regulatory reforms and subsidies direct the private players to work in unison with India’s climate goals. Hence, climate finance, on the other side, along with the vibrancy of the private sector, paves the way for inclusive industrial development in India, which is equitable and environmentally sustainable.

### 6.1 Domestic and International Financing Channels

The mobilization of national and international financing channels is of utmost importance when considering the green transition in India, as both play distinct but relevant roles in sustainable development. Nationally, public sector banks, NBFCs, and green finance funds have initiated the process of environmental criteria being entered into the capital deployment process. This transition was catalyzed by the Reserve Bank of India's draft framework instituting climate risk assessment and green taxonomy (KPMG, June 12, 2025). Policy-driven investment was primarily responsible for this increase in capacity, as it pushed an additional 24.5 GW in solar and 3.4 GW in wind capacity in 2024. The sovereign green bond issuances under the sustainable finance framework of the government are aimed at financing renewable and clean transport projects at the private capital level. But these are limited in scale by high costs of debt and poor ESG awareness.

The estimated $10 trillion is expected to be filled in green investments by 2070, and international finance channels play an important role in this end (Khanna et al., 2024). Funds like these can be dispensed from multilateral institutions under concessional terms with or without technical assistance (like the World Bank) or from bilateral agencies (like JICA and KfW). In 2024, India overtook China to be the second-largest climate finance recipient in the world, attracting a whopping $5.1 billion in international capital (Ernst and Young, February 18, 2025). With a promise to retire 500 GW of non-fossil fuel capacity by 2030 and with India now being one of the top 10 green bond markets, global investors are responding in a big way to responding (NetZero India, 2024). However, to maximize the potential of international capital flows, India must standardize green definitions, increase the clarity of regulations, and improve the pipelines of projects. Thus, international capital has to move in tandem with the domestic reform agenda for an equitable, inclusive, and scalable green transition.

### 6.2.ESG Mandates and Green Bonds

In India, ESG expectations are overpowering the country towards green industrialization that would move from voluntary codes of self-regulation towards commands of law. Recently, SEBI has extended the Business Responsibility and Sustainability Reporting (BRSR) to the top 1000 listed companies, which includes RSVB teamwork and value-chain biodiversity consideration for oversight (IndiaCSR, April 17, 2025). So, this basically stands for a commitment by a wide variety of institutions toward corporate accountability, and further, it goes hand in hand with national sustainability directives. Emerging ESG could be a hope that can instill an independent entitlement to standardize metrics, whereby further disclosures will pave the path for transparency improvement at the board level to regain investor confidence. Such advancement shall not be seen just as compliance but as strategic tools for decarbonization, resource efficiency, and just growth passed down the supply chain of ESG expectations to catalyze change across the industry, Tata Steel, JSW, among others, being the big corporates that have signed on to this net-zero facility (NetZero India, May 21, 2025).

Green bonds provide capital for environmentally sustainable activities and therefore dovetail with ESG mandates in the operationalization of India’s climate ambitions. The Government of India started issuing sovereign green bonds in 2023 for a total worth of ₹477 billion (≈ USD 5.7 billion), creating a local yield curve for green instruments, and hence a crystal clear policy signal (CBI, June 27, 2025). These instruments are being used to fund renewable energy, clean transportation, and afforestation projects that directly enable industrial decarbonization. While a lack of demand from investors and thin premiums have been deterrents, in recent years, tax incentives for investors in IREDA bonds under Section 54EC have stimulated greater participation from investors, thereby lowering capital costs. ESG and green bonds thus form a synergistic partnership, where the former brings sustainability into corporate governance, while the latter mobilizes funds for India's green industrial future.

### 6.3.PPP Models and Investment Ecosystem

Public-private partnerships (PPPs) have come to be seen as an essential set of tools in the green industrialization agenda of India, along with bridging the chasm that exists between policy ambition and ground-level translation. The recent Indian-first PPP green waste processing plant in Indore, sanctioned under the Swachh Bharat Mission-Urban, is a clear indication of the changing landscape of waste management, wherein 30 to 70 tons of green waste are converted into wooden pellets and biodegradable packaging each day (PIB, March 18, 2025). This model, therefore, helps to simultaneously reduce urban pollution and improve air quality while also generating revenue for municipal bodies, with the Indore Municipal Corporation charging ₹3,000 per tonne of waste processed. The PPP model facilitates the sharing of responsibilities between the public sector, which provides land and logistical support, and private parties, which develop and operate infrastructure to promote innovation, efficiency, and scalability. In addition, the government's push for targeted sector-wise PPP pipelines and revival of the Viability Gap Funding (VGF) scheme does indicate a strategic intent to mainstream PPPs into green infrastructure development (PPP in India, 2025).

However, with a really handsome momentum building up behind this PPP evolution, the investment ecosystem across India complements these models, wherein catalysis, accelerating green industrialization takes place very effectively. The SBI report states that investment announcements for the first nine months of FY25 have been the highest at ₹32.01 lakh crores, portraying a 39 percent increase compared to previous levels, out of which nearly 70 percent comes from private sources (SBI, January 22, 2025). This further propounds the viewpoint that the corporates are very much optimistic about the green transition within India, having been policies and reforms incentivized, as well as a growing renewable energy market. The Union Budget 2025–26 has boosted this spike further with a pledge of ₹1.5 lakh crore in interest-free loans to States for capital expenditure and kick-starting the second phase of the Asset Monetization Plan to unlock ₹10 lakh crore to finance new projects. Thus, these PPPs, together with this highly dynamic investment ecosystem, create a concrete platform for creating infrastructure, deeply embedding sustainability into the industrialization narrative of India.

## 7. Need for Institutional and Regulatory Reforms

Targeted industrial and regulatory reforms are required to accelerate India's green industrialization by taking away legacy inefficiency and encouraging climate-resilient growth. Obsolete industrial standards often hamper low-carbon options, while fragmented sets of regulations slow the promotion of green technology. Such a tangled regulatory setup needs to be simplified, set with strong standards, and given period-bound compliance mechanisms, to attract investments and bring industries on the sustainability track. Institutional capacity should also be enhanced to incentivize clean production and integrate green metrics into industrial policy. India's climate pledges call for systemic transformation rather than the slightest of tinkering. Reform in a gradual fashion will allow for the conversion of these industrial frameworks into largely carbon-intensive ones, into a more socially and resource-efficient future.

### 7.1Strengthening inter-ministerial coordination

The prime goal of inter-sectoral integration under centrality is aimed at fast-tracking India's transition to green industrialization while ensuring consistency in policies, best utilization of resources, and timely implementation of cross-sectoral initiatives. India has a federal architecture. Every ministry works independently, while the mandates of energy, environment, industry, and finance intersect with each other. Platforms like PRAGATI and IMCG fill in the gaps, but some systemic challenges still exist. At the Green Hydrogen Summit, FICCI argued that a joint initiative at the ministry level between Petroleum, Steel, and Heavy Industries would also spur green hydrogen deployment (FICCI, 2025). Unlike other revenues, the AIPA, however, lacks some strong state engagement; thus, it calls for reforms in institutional structures. Few governance models created using shared digital infrastructure, joint task forces, and clear accountability will transform India's great ambitions on climate change into industrial outcomes.

### 7.2.Policy Coherence and Cross-Sectoral Governance

Coherence across policies and cross-sectoral governance sets a fundamental premise for speeding up India’s green industrialization transition, ensuring environmental policies are not working at odds with industrial and economic policies. In the absence of coherence in governance, renewable energy and clean manufacturing industries have seen poor growth due to resultant conflicting mandates and the security of inconsistent implementation across various ministries. A coordinated approach would thus allow these national missions-Pli scheme, National Hydrogen Mission, and state industrial policies— to be aligned for synergistic outcomes with common planning frameworks and integrated policy instruments. The NITI Aayog’s insights also brought forth underscore that the quality of data and interoperability of institutions remain critical to fostering trust levels and achieving precision in green governance (NITI Aayog, 2025). Chinese techno-industrial sequencing experience teaches the need for horizontal coordination amongst ministries and vertical coherence between central and state governments (ISID, 2022). Lacking such coherence, India will see policy contradictions that hinder their impact and hinder their climate commitments.

## 8. Challenges and Risk Landscape

The increasing dependence on technology and vulnerability of supply chains signal towards green industrialization on this side. Globally, by 2025, it is expected that 6.25% of data centres will fall under the high-risk category due to climate-induced hazards, with Uttar Pradesh, Maharashtra, and Tamil Nadu in India being the highest risk exposure hubs (Roy, July 12, 2025). Risk scenarios, which are import-linked from solar PV and other battery storage systems, currently take precedence because of geopolitical tensions in their respective markets. The local sourcing of components is being debated; however, a strong domestic manufacturing ecosystem indeed impedes resilience in supply chains. Combined with an approximate 30% increase in

cyber incidents being recorded by Q2 of 2024, the necessity to strengthen digital infrastructure and establish anti-fragile AI-powered systems is definitely further obfuscated (Seqrite, 2025).

In India's green transition, a significant challenge arises out of the reluctance to change policy, coupled with the deep-rooted legacy systems that have been entrenched for a long time. Reforms such as the Forest Conservation (Amendment) Act 2023 and the Energy Conservation (Amendment) Act 2022 are indeed there, but at times, these reforms leave the implementation at subnational levels, where success varies across regions. Legacy systems include COBOL-mainframe infrastructures and thermal power plants, not functioning well currently, still hindering innovations. About seventy percent of leaders attribute the main barriers to fragmentation and lack of interoperability, with only twenty-seven percent saying their data infrastructure gives complete visibility of their operations (GTM, January 13, 2025). There still exists tremendous inertia within bureaucracies to change and, in doing so, hinder institutional modernization. Thus, another impediment arises to reform.

Borne as an imperative of development, balancing India's growth aspirations and, rather crucially, its climate obligations. In the Climate Change Performance Index, India's ranking continued to plummet from the 7th to 10th positions in the year 2025, owing to the continued dependency on coal. In another exhibit of great intention with promises to follow, the Union Budget 2025-26 provided for ₹26,549 crore for the Ministry of New and Renewable Energy and ₹20,000 crore for the Nuclear Energy Mission. Prolong delays in investments and near about 24.7% of India's GDP would be in jeopardy due to climate risks by 2070. Renewable installations did not change much, as it was about 475 GWh, but with increasing emissions from transport and industry sectors, electricity consumption remained highly unusual (NITI Aayog, 2025). Fiscal creativity, along with inclusive planning and ecological wisdom, will be tested in enabling climate resilience to be placed at the core of India's industrial architecture in this transition process.

## 9. Conclusion

India thus stands now at a very short pass, which can now define more clearly the trends that can determine its industrial future along the lines of Viksit Bharat @ 2047, when green industrialization becomes a growth concept increasingly socially inclusive and strategically beneficial. It brings out how the changing Indian policy regime looks combined with clean technology advancement and promising sectors like renewable energy, e-mobility, and circular manufacturing as propellants for economic competitiveness and energy resilience in an ever-decarbonizing framework globally. Going forward, the paper then offers an industrial regeneration-sustainable development path through MSME adaptation, unlocking key climate finance, and innovating regulatory frameworks. Then the paper argues that green industrialization could be an opportunity beyond just the climate call-it could be a vibrant national opportunity with the right institutional change and cross-sector coordination that will feature India in the decades to come as a social equity leader, innovation, and relevance globally.

It aims to pursue green industrialization in an integrated trajectory toward Viksit Bharat 2047, wherein economic aspirations find themselves balanced with ecology. With a strategic first motion, India starts its journey with accelerated renewable energy deployment leading to 500-GW non-fossil capacity by 2030, with parallel sectoral reforms in e-mobility, green hydrogen, and sustainable manufacturing. At the same time, empower MSMEs through climate finance, technology transfers, and capacity-development programs. Policies must accelerate decarbonization via innovation toward compliance with the newly emerging ESG standards while minimizing regulatory burdens on the private sector. Inter-ministerial coordination and coherent policy frameworks will need to first unlock investments and then streamline project execution. Circular economy practices have to be ramped up, and digitized supply chains should support them for long-term resource efficiency. Institutional reform, along with inclusive planning, can change the landscape for green industrialization. This can outline an opportunity development model in which India will prove its business case in 2047 as a competitive, resilient, and equitable industrial power rather than catching up with green claims.

Around 2047, establishing a truly greener industrial development pathway for India would require an agile policy framework and multi-stakeholder alignment. Policymakers should integrate climate–industrial policies that have sector-specific objectives, be it energy, transport, manufacturing, or finance. This also includes deregulation of archaic frameworks, providing fiscal support such as tax credits for green inventions, and strict enforcement of ESG compliance standards that are quantifiable. Further, to open climate finance windows, the government should work toward promoting blended finance, besides having project-preparation facilities catering to MSMEs and state actors. Industry leaders, civil society members, financiers, research agencies, etc., must foster arenas for the joint design of low-carbon solutions and the exchange of best practices. Scaling such PPPs to the implementation of infrastructure promises sustainability, and digitizing supply chains produces resilience and accountability. Building institutional capacity and creating transparent data systems will, in turn, provide and uphold the conversation-witness accountability. Coherent policy mechanisms together with inclusivity among stakeholders could convert green industrialization for India from a burden of climate concerns to a proud opportunity of national development, with a global appeal.

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# Wars, Warming, and the Theatre of Global Priorities

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There is a peculiar irony defining our times, while the planet warms steadily and silently, humanity appears increasingly preoccupied with making it burn faster. Sometimes literally.

Across continents, conflicts simmer and erupt, stretching from Eastern Europe to the Middle East, from fragile African regions to rising tensions in Asia. The world today is not merely witnessing isolated wars; it is experiencing a fragmentation of global attention, resources, and moral clarity. And somewhere in this geopolitical theatre, climate change, the defining challenge of our era, waits backstage, increasingly neglected.

The environmental cost of war has always been profound, but in the current era of industrial warfare, it is staggering. Bombings release massive quantities of greenhouse gases; burning infrastructure, oil depots, and forests inject carbon and toxins into the atmosphere; and the destruction of ecosystems disrupts biodiversity in ways that are often irreversible. War is, in essence, an accelerant of environmental degradation.

Yet, unlike industrial emissions, these are rarely accounted for in national climate inventories. The carbon footprint of conflict remains conveniently invisible perhaps because acknowledging it would force uncomfortable questions about priorities. Beyond emissions, wars dismantle environmental governance. Protected areas become battlegrounds, environmental regulations collapse, and conservation efforts are abandoned. In fragile ecosystems, this can undo decades of progress in mere weeks. When institutions fail, illegal mining, deforestation, and wildlife trafficking thrive in the chaos. The environment, as always, becomes the silent casualty.

**Mounting ripple effects**

The ripple effects do not stop at ecosystems. They extend into the social and economic fabric of societies, creating a cascade of crises that reinforce each other. Conflict displaces millions. Migration, already exacerbated by climate stress is intensified by war. Families flee not only violence but also the collapse of water systems, food supply chains, and livelihoods. Soon refugee camps will emerge in environmentally fragile zones, placing additional stress on scarce resources such as water and land. What begins as a humanitarian crisis soon becomes an ecological one.

Hunger follows close behind. Agricultural lands are destroyed, irrigation systems disrupted, and supply chains fractured. Fertile fields turn into battlefields, and food insecurity spreads far beyond the immediate conflict zones. In a world already grappling with climate-induced crop failures, war acts as a cruel multiplier. Unemployment and economic instability deepen the crisis. Industries collapse, investments vanish, and reconstruction demands enormous resources. Governments divert funds from development and climate action to defence and recovery. The opportunity cost is immense, every dollar spent on conflict is a dollar not invested in renewable energy, water conservation, or climate resilience.

Disease, too, finds fertile ground in war-torn regions. Damaged sanitation systems, polluted water sources, and overcrowded refugee settlements create conditions ripe for outbreaks. Climate change, with its shifting disease vectors, further compounds these vulnerabilities. The nexus of water, health, environment, and conflict becomes starkly visible yet rarely addressed in an integrated manner.

**Image source- https://www.fawco.org/global-issues/environment/environment-articles/4767-impact-of-war-on-our-natural-environment**

And then, of course, there is the geopolitical spectacle.

The global climate architecture, painstakingly built over decades through forums such as the UN and the UNFCCC, increasingly resembles a stage where actors occasionally forget their lines. Commitments are made, applauded, and quietly diluted. Multilateralism, once the cornerstone of climate action, is now under strain.

The imagery of a major power theatrically stepping away from global climate commitments echoing past withdrawals and political posturing captures a deeper malaise. It is not merely about one leader or one country; it reflects a broader retreat from collective responsibility. When influential nations prioritize short-term geopolitical gains over long-term planetary survival, the signal sent to the rest of the world is unmistakable.

One might imagine a scene almost satirical where global leaders debate emissions targets inside a conference hall, while outside, the echoes of conflict grow louder. And just as consensus begins to emerge, a prominent figure exits dramatically, leaving behind a trail of uncertainty and a room full of unanswered questions. It would be amusing if it were not so consequential.

The fragmentation of global cooperation has direct implications for climate action. Trust erodes, negotiations stall, and ambition weakens. Developing countries, already bearing the brunt of climate impacts, find themselves navigating a world where promised finance and technology transfers remain elusive. The gap between rhetoric and reality widens.

**Transversality, the answer?**

In this context, the concept of integrated approaches, what may be termed "transversality" becomes not just relevant but essential. Water, energy, environment, and health cannot be addressed in silos, particularly in a world where conflict and climate risks intersect so profoundly. For instance, water scarcity can exacerbate tensions, while cooperative water management can serve as a bridge for peace. Renewable energy can reduce dependence on contested fossil fuel resources. Climate-resilient agriculture can mitigate food insecurity in fragile regions. These are not abstract ideas; they are practical pathways that link sustainability with stability.

However, such approaches require political will, sustained investment, and above all, a recognition that security in the 21st century is inseparable from sustainability. The current trajectory raises uncomfortable questions. Are we, as a global community, inadvertently undermining our own survival? Are we prioritizing immediate geopolitical gains over long-term planetary health? And perhaps most critically, can we afford to treat climate action as secondary in a world increasingly defined by conflict?

The answer, quite simply, is no.

Climate change does not pause for wars. Rising temperatures, melting glaciers, and extreme weather events continue unabated, indifferent to human conflicts. In fact, they often exacerbate them, creating a vicious cycle where environmental stress fuels instability, and instability, in turn, accelerates environmental degradation.

Breaking this cycle requires a fundamental shift in perspective. Climate action must be seen not as a competing priority but as a foundational element of global security. Investments in sustainability are investments in peace. Conversely, neglecting the environment undermines stability.

**Way Ahead**

There is a need for greater accountability. The environmental impacts of conflict must be measured, reported, and addressed. International frameworks should incorporate mechanisms to assess and mitigate the ecological consequences of war. Ignoring these impacts does not make them disappear; it merely delays the reckoning. Equally important is the role of innovation. Science and technology offer tools to monitor environmental damage, restore ecosystems, and build resilience. From satellite-based tracking of emissions to community-led water management systems, solutions exist. The challenge lies in deploying them at scale and ensuring that they reach the most vulnerable populations.

Ultimately, the story of our times is not just one of conflict and crisis. It is also one of choices. We can choose to continue on the current path, where wars drain resources, fragment cooperation, and push climate action to the margins. Or we can choose a different trajectory, one that recognizes the interconnectedness of our challenges and responds with integrated, forward-looking solutions.

The stage is set, the actors are in place, and the script is still being written.

The question is whether we will rise to the occasion or exit, stage left, leaving the planet to bear the consequences.

# ARTICLE PUBLISHED

## North East India – From Periphery to Mainstream: Precedent for Global South


Once seen as a remote frontier, Northeast India is now emerging as a model of peace, progress, and prosperity. At the 60th Session of the UN Human Rights Council in Geneva, the India Water Foundation hosted a high-level policy dialogue spotlighting the region's transformation. Eminent speakers highlighted milestones such as Sikkim's organic farming, Mizoram's full literacy, Assam's cancer care network, and growing cross-border trade opportunities underscoring sustainable development, water security, climate resilience, and inclusive growth as the cornerstones of this progress. The article "North East India: From Periphery to Mainstream – A Precedent for the Global South" has been authored by Dr. Arvind Kumar, President, India Water Foundation.

Click on the link ahead to read the complete article: https://lawstreet.co/vantage-points/north-east-india-from-periphery-to-mainstream-precedent-for-global-south

## Reimagining Water Governance in South Asia: Beyond Borders

Published in the 12 December 2025 issue of Daily News Now.


"South Asia must learn to see itself as a shared hydrological and socio-economic space rather than an assortment of isolated national water economies" was something I stressed on during the round table organised by UN ESCAP on Roundtable on Water–Climate Nexus national perspectives as part of the HKH Water & Climate Resilience Workshop held in Kathmandu on 4–5 December 2025, organised by UNESCAP in collaboration with ICIMOD, UNECE, and IUCN.

Click on the link ahead to read the complete article: https://dailynewsnow.in/reimagining-water-governance-in-south-asia-beyond-borders/

## Doha Summit 2025: Grand Social Justice Blueprint Falls Short on Financing and Real Reform


Published on 4th December 2025 in The Law Street Journal.

The article highlights the widening gap between global rhetoric and lived realities across the Global South, stressing the urgent need for non-repayable adaptation finance, genuine climate justice, strengthened social protection systems, and transformative reforms in global governance. Dr. Kumar positions the Doha Summit as a missed opportunity that nonetheless underscores what must change if international commitments to social justice are to translate into real, people-centred development outcomes.

Click on the link ahead to read the complete article: https://lawstreet.co/vantage-points/doha-summit-2025-grand-social-justice-blueprint-falls-short-on-financing-and-real-reform


## Shared Waters, Shared Fate

Published on 2nd January 2026 in Millennium Post

The article calls for a new regional water ethic rooted in basin-level cooperation, ecosystem restoration, and negotiated trust among riparian states. Emphasising shared responsibility and collective stewardship, Dr. Kumar presents a compelling case for cooperative water governance as the foundation for long-term resilience, regional stability, and sustainable development.

Click on the link ahead to read the complete article:

https://www.millenniumpost.in/opinion/shared-waters-shared-fate-642393

# ANNOUNCEMENT

## India Water Foundation Felicitated For Integrated Transversality Leadership

The India Water Foundation (IWF) was honoured with a prestigious award by the Nurserymen Association of India in recognition of its outstanding contributions across diverse domains including water conservation, environmental sustainability, climate resilience, and community empowerment. The award was presented during "Prakriti Diwas" organised by Nurserymen Association of India on 12 February 2026 at the India International Centre. The recognition reflects the shared vision between the two institutions in promoting ecological restoration, strengthening green livelihoods, and advancing sustainable natural resource management. The award acknowledges India Water Foundation's integrated aligned with national priorities and global sustainability goals. The event was graced by eminent dignitaries including Ramesh Pokhriyal Nishank, Former Minister of Education, Government of India and Former Chief Minister of Uttarakhand; K. C. Tyagi, Former Member of Lok Sabha; and Sunita Narain, Director General of the Centre for Science and Environment. Addressing the gathering, Shri Ramesh Pokhriyal Nishank appreciated the India Water Foundation for its sustained efforts in integrating water security with environmental stewardship. https://economicindia.co.in/lifestyle/india-water-foundation-felicitated-for-integrated-transversality-leadership/


## World Water Leadership Congress and Awards 2026

We are pleased to share that Dr. Arvind Kumar, President, India Water Foundation was felicitated with the Leader's Award for the Most Impactful Water Management Water Management, conferred by the World Federation of CSR Professionals, recognizing his outstanding contributions to sustainable water management and policy leadership. We are also proud to share that Dr. Kumar delivered an insightful presentation titled"**Deciphering the Ripple Effects of Climate Change on Water Resources**" at the **World Water Leadership Congress** & **Awards**, themed "**The Changing CSR Landscape**: **Sustainable for the Future**," **on 19 February 2026 at Taj Lands End**, Mumbai. In his presentation, he highlighted how climate change is

intensifying water stress, altering hydrological cycles, and creating cascading impacts on ecosystems, public health, and economic stability. He also emphasized the critical role of integrated water governance, climate-resilient infrastructure, and responsible CSR investments in safeguarding future water security.

https://www.ahmedabadmirror.com/architect-of-water-transversality-honoured-at-world-water-leadership-congress/81908625.html

# Become a Direct Member!

At the India Water Foundation (IWF), we're more than just a network—we're a movement for sustainability and resilience. By becoming a member, you become part of a community of individuals, organizations, and institutions committed to environmental conservation, policy advocacy, and transformative change.

**Why Join Us?**

**As a member, you'll gain opportunities to:**

- Shape Policies with us – Participate in advocacy initiatives that influence sustainable development strategies.
- Learn and Grow Together – Access exclusive workshops, training programs, and thought-leadership events.
- Connect with Change-makers – Collaborate with a global network of experts, innovators, and leaders.
- Make a Grassroots Impact – Support and engage in community-driven projects that enhance resource efficiency and resilience.
- Be Recognized for Your Efforts – Get featured, awarded, and celebrated for your contributions at IWF events.

**Who Can Join?**

**Membership is open to:**

- **Organizations** – Companies, institutions, NGOs, government bodies, and intergovernmental organizations.
- **Individuals** – From young professionals to experienced leaders and retirees—anyone passionate about sustainability.

Whether you're a policymaker, innovator, or community advocate, there's a place for you here at IWF. Together, let's shape a sustainable and inclusive future.

**Apply Now - https://indiawaterfoundation.org/direct-membership/**

# Become a Jal Mitra – Join the Social Outreach Membership

Be part of a people-powered movement dedicated to water conservation, ecosystem restoration, and sustainable living. The Jal Mitra Outreach Program is a mass initiative of the India Water Foundation (IWF) that seeks to inspire awareness, nurture grassroots action, and foster behavioural change for a more sustainable future across India and the Global South.

**Why Become a Jal Mitra?**

**By joining, you:**

- **Support Sustainability** – Play your role in reducing ecological footprints and advancing national and global sustainability goals.
- **Drive Action on the Ground** – Participate in plantation drives, cleanup campaigns, and community awareness programs.
- **Be Part of a Movement** – Join a vibrant network of individuals committed to water conservation, climate action, and ecosystem resilience.

**Membership Benefits (Free of Cost)**

**As a Jal Mitra, you will:**

- Receive regular updates on IWF's activities and impact.
- Get invitations to conferences, seminars, and symposia organized by IWF.
- Actively participate in conservation and community development campaigns.
- Be acknowledged through certificates and featured stories on our platforms.
- Contribute directly to grassroots initiatives that create lasting change.

**Apply Now- https://indiawaterfoundation.org/jal-mitra/**

# FRIDAY BLOGS

**Reimagining Water for Climate Action?**

At Stockholm, the message was clear: water must move to the heart of climate governance not as a side issue but as the bloodstream of sustainable development. Unlike earlier years of polite echo chambers, 2025 felt edgier and more political. UN leaders spoke with unusual bluntness, civil society pressed with urgency, and financing gaps were laid bare.……Read more https://focusglobalreporter.org/reimagining-water-for-climate-action/

**Reweighing Climate Finance: Equity or Illusion?**

Climate finance lies at the heart of climate justice, yet inequities and broken promises persist. Developing nations face trillion-dollar needs but receive little support, while high borrowing costs and political backtracking erode trust. India, despite major progress, struggles to balance ambition with affordability as its draft taxonomy overlooks national realities. Closing these gaps demands fairer credit systems, innovative financing, transparent carbon markets, and equity-driven frameworks.……Read more https://focusglobalreporter.org/reweighing-climate-finance-equity-or-illusion/

**Reimagining Climate Emergency due to Deluge and Despair**

It's no longer a meteorological aberration; it is indeed a climate crisis in real time, deserving immediate attention, scientific foresight, and political will, lest resilience give way to loss, beyond repair., The global empirical evidence shows that many disaster risk reduction and management (DRRM) interventions and policies have been plagued with top-down approaches and highly technocratic and exclusive measures that, instead of delivering just outcomes, have only marginalized some segments of the population, especially the vulnerable. Despite their developmental objectives, DRRM policies and interventions have unintended impacts and consequences that we should vigilantly review and learn from……..Read more https://focusglobalreporter.org/reimagining-climate-emergency-due-to-deluge-and-despair/

**Is biofuel the Green Alchemy?**

India's biofuel revolution is not merely about industrial scaling, it represents a profound shift in agriculture, energy, and rural livelihoods. Production capacity has soared from 38 crore litres in 2014 to 661.1 crore litres in 2025, driven by flagship schemes like the Pradhan Mantri JI-VAN Yojana, which promotes advanced bio-ethanol from crop residues, forestry waste, and algae.….Read more https://focusglobalreporter.org/is-biofuel-the-green-alchemy/

**From St. Victoria to Abu Dhabi : A Clarion Call for Wetlands?**

n light of this accelerating crisis, global attention turned to COP15 of the Ramsar Convention, held recently at Victoria Falls, Zimbabwe. More than just another diplomatic gathering, this milestone event served as a turning point an urgent call to shape the next decade of bold, coordinated action to protect one of the planet's most threatened ecosystems under the theme "Protecting Wetlands for Our Common Future,"……..Read more https://focusglobalreporter.org/from-st-victoria-to-abu-dhabi-a-clarion-call-for-wetlands/

**Reimagining Climate-Aligned Industrialization for Shared Prosperity**

The recent Global Industry Summit in Riyadh, the 21st session of the United Nations Industrial Development Organization (UNIDO) General Conference was more than a mere convergence of multilateral stakeholders. It was a crucible where 173 member states subjected the extant models of industrial development to intense scrutiny, ultimately forging a manifesto for industrial redemption. The desert wind that swept through the Saudi capital carried not just sand, but the seeds of a new industrial paradigm, culminating in the unanimous adoption of the Riyadh Declaration. This pivotal document serves as a covenant for transformation, demanding that industrial progress transcend the narrow pursuit of GDP metrics and embrace planetary stewardship and social inclusion.……Read more https://focusglobalreporter.org/reimagining-climate-aligned-industrialization-for-shared-prosperity/

**Reweighing progress to catch up with reality: UNEA-7**

The seventh session of the United Nations Environment Assembly (UNEA-7), which concluded yesterday in Nairobi, will likely be remembered less for the number of resolutions it adopted and more for what it revealed about the current state of global environmental governance. Convening over 6,000 delegates from 186 countries, UNEA-7 delivered 11 resolutions, three decisions, and most notably a ministerial declaration adopted through negotiated consensus for the first time in the Assembly's history…….Read more https://focusglobalreporter.org/reweighing-progress-to-catch-up-with-reality-unea-7/

**Reimagining India–Africa Relations in the New World Order**

The India–Africa partnership is increasingly embedded within a wider geo-economic and geopolitical architecture. As global supply chains are reconfigured through friend-shoring and diversification away from concentrated dependencies, India's manufacturing ambitions align with Africa's industrialization drive. Cooperation in pharmaceuticals, textiles, automotive components, digital services, and critical minerals processing offers mutual gains while reducing exposure to external shocks. Maritime security in the Indian Ocean, energy transit routes, and counter-terrorism cooperation further bind Indian and African strategic interests…….Read more https://focusglobalreporter.org/reimagining-india-africa-relations-in-the-new-world-order/

**Aravallis: From Fragmented Vision to Ecological Hotspot**

The Aravalli Range stands today at a decisive inflection point; one where an unfolding ecological crisis can be transformed into a generational opportunity for India's environmental security and economic resilience. Recent judicial interpretations that narrowly define the Aravallis as landforms rising more than 100 metres above local terrain have, in effect, placed nearly 90% of India's oldest mountain system outside meaningful protection, exposing vast stretches to mining, real estate expansion, and irreversible ecological degradation. Yet history demonstrates that moments of acute vulnerability often present the clearest opportunity for strategic reimagining……Read more https://focusglobalreporter.org/aravallis-from-fragmented-vision-to-ecological-hotspot/

**UNGA 80: Is it still Shared Vision, Shared Prosperity?**

Trump's speech was more than a provocation; it was a stark marker of Washington's growing estrangement from multilateralism, signalling to allies and adversaries alike that the world's largest economy was unwilling to shoulder the responsibilities of collective climate action. But is this the kind of shared vision and prosperity the UN was founded upon? Is this how the world is expected to function through unilateral dictates of a fading unipolar order rather than through collective responsibility? And can humanity afford to ignore Vasudhaiva Kutumbakam the eternal wisdom of India that reminds us the world is one family at a moment when climate chaos and conflict demand unity above all?……Read more https://focusglobalreporter.org/unga-80-is-it-still-shared-vision-shared-prosperity/

**Echoes from Geneva: Bridging the gap in Human Rights Action**

This session may yet seal historic precedents landmark genocide reports, sea-level resolutions, but as the world watches, the real test will be whether these declarations become law, protection, redress, not just echoes in Geneva's halls. Because while the Council meets, people on the frontlines are already drowning, starving, silenced. And until their experience matches diplomatic resolutions, rights will continue to melt like icebergs; dramatic, visible, but inexorably vanishing unless anchored……Read More https://focusglobalreporter.org/echoes-from-geneva-bridging-the-gap-in-human-rights-action/

**Catapulting Northeast India from Periphery to Mainstream**

What if the Northeast of India was not the periphery, but the pulse beating at the edge of India's emergence? Imagine a place where mountains are not barriers, but connectors; where rivers do not divide, but deliver promise. What happens when isolation becomes opportunity, when remoteness gives birth to resilience? These are not just rhetorical questions they are the lived…… Read more

https://focusglobalreporter.org/catapulting-northeast-india-from-periphery-to-mainstream/

**Is Tianjin Heralding a New World Order?**

The Tianjin SCO Summit 2025 signalled more than regional diplomacy, it hinted at a shifting world order shaped by climate disruptions, tariff wars, and multipolar alignments. For India, it underscored both opportunities and risks: securing Eurasian energy and connectivity, leveraging SCO–BRICS convergence for financial alternatives, and countering terrorism while navigating China's dominance. The Summit reflected the rise of flexible, issue-based multilateralism, gradual de-dollarization, and alternative financial systems. India's way forward lies in smart balancing bridging democracies and authoritarian powers alike while positioning itself as a leader of the Global South and a voice for inclusive, future-ready collaborations.……..Read more https://focusglobalreporter.org/is-tianjin-heralding-a-new-world-order/

**Redefining Sustainability for a Greater Good: A Wakeup Call?**

Be the change you wish to see in the world." As the world observed Gandhi Jayanti, this eternal thought echoes more strongly than ever, for the crises facing humanity today are not only environmental, but also moral and civilizational. When Gandhi spoke of simplicity, trusteeship, and sarvodaya, he was not imagining a utopia but laying down a political philosophy of responsibility toward the Earth and its people. The Indian Constitution too carries forward these ideals, embedding justice, equality, fraternity, and environmental responsibility as guiding principles. Yet, as we look at the recent outcomes of the 60th Session of the UN Human Rights Council and the 80th Session of the United Nations General Assembly, one is compelled to ask: have we strayed from these ideals, and if so, how do we find our way back?.……Read more https://focusglobalreporter.org/redefining-sustainability-for-a-greater-good-a-wakeup-call/

**Redefining Intent with Impact for inclusive social development**

When the Second World Summit for Social Development convenes in Doha, Qatar (4–6 November 2025), the world will gather not merely for commemoration, but for collective reckoning. Three decades after the original 1995 Copenhagen Summit, WSSD2 emerges as more than a milestone; it stands as a critical inflection point in humanity's ongoing struggle for social justice. In an era of widening inequality, climate disruption, digital upheaval, and fractured geopolitics, the summit confronts a fundamental question: can the world renew its faith in social progress, or will the promises of international cooperation dissolve under mounting pressures? ……read more https://focusglobalreporter.org/redefining-intent-with-impact-for-inclusive-social-development/

**From Abu Dhabi to Belem: Redefining the Rules of Conservation**

The Congress, convened under the banner "Powering Transformative Conservation," represented a decisive shift from diagnosing crises to designing cures. With over 10,000 delegates from more than 160 nations, it was one of the largest environmental gatherings in history. But what distinguished it from its predecessors was not its scale it was its urgency. The Congress adopted 148 motions and resolutions, crafting what many are calling the most ambitious conservation roadmap in decades a twenty-year Strategic Vision 2045 that seeks to embed ecological resilience at the core of global governance……...Read more https://focusglobalreporter.org/from-abu-dhabi-to-belem-redefining-the-rules-of-conservation/

**From Copenhagen to Doha: Reimagining Social Development in an Age of Disruption**

The summit arrives at a moment when the scaffolding of social contracts appears to be crumbling under the weight of relentless crises, where over half the global population reports little to no trust in their governments, and where 673 million still experience the gnawing pain of hunger despite producing enough food to feed every inhabitant of this planet. This gathering is not merely a diplomatic ritual but an existential reckoning with the question of whether multilateralism can still deliver on its foundational promise of leaving no one behind. Three decades after Copenhagen's historic convergence placed people at the centre of development, the paradox persists: over 690 million remain trapped in extreme poverty, inequality has widened in two-thirds of countries, and 2.4 billion face exclusion while the pandemic exposed how fragile our progress truly was.……Read more https://focusglobalreporter.org/from-copenhagen-to-doha-reimagining-social-development-in-an-age-of-disruption/

**India redefining the Global Narrative**

The hallowed halls of Johannesburg witnessed history unfold recently, as the G20 Leaders' Summit convened for the first time on African soil; a watershed moment that crystallised the shifting sands of global geopolitics. It emerged not merely as another congregation of world leaders, but as a profound declaration that the architecture of global governance is undergoing an irreversible metamorphosis. For India, the Johannesburg Summit represented far more than diplomatic attendance; it was an affirmation of New Delhi's ascendant role as the conscience-keeper of the Global South and the indispensable bridge between the developed and developing worlds. Hon'ble Prime Minister Narendra Modi's participation in it carried the gravitas of continuity, building upon the historic foundations laid during India's transformative presidency in New Delhi in 2023.…….Read more https://focusglobalreporter.org/india-redefining-the-global-narrative/

**COP 30: The Climate Summit of Consensus Paradoxes**

The curtains have fallen on COP30 in Belém, and the Amazon rainforest that hosted this monumental gathering now stands as a silent witness to what was promised, what was partially delivered, and more importantly what remains unfinished on humanity's urgent journey toward climate justice. As the world reflects on the 30th UN Climate Change Conference, which concluded yesterday we find ourselves navigating a labyrinth of contradictions: significant momentum alongside structural paralysis, genuine action commitments paired with diplomatic hedging, and commitments to equity repeatedly undermined by geopolitical calculations. ……Read more https://focusglobalreporter.org/cop-30-the-climate-summit-of-consensus-paradoxes/

**Geopolitics of Restructuring the United Nations**

With eight decades since its inception, the United Nations is in a rather precarious position as its operations are fogged by uncertainty. Its birth can be traced back to the post-Second World War era, thus entails the building of an institution from an era that has since vanished: an age in which those who had won were not fairy abstractions but had real, few, and simpler poles in the international order. Gradually, the world has come to be dominated by the convoluted complexities of multi-polarity, regional assertiveness, and transnational crises. Therefore, very few of the so-called found…….Read more https://focusglobalreporter.org/geopolitics-of-restructuring-the-united-nations/

**Reclaiming Breathable Air for a Sustainable Planet**

Air pollution today stands as one of humanity's most pervasive and deadly challenges; an invisible pandemic that unites health, economy, and climate in a single crisis. The WHO warns that nearly every person on the planet now breathes air that fails to meet safe standards, with fine particulate matter ($PM_{2.5}$) contributing to over eight million deaths annually. The State of Global Air 2024 further notes that global $PM_{2.5}$ levels remain nearly five times higher than WHO guidelines, showing no signs of abatement……..Read more https://focusglobalreporter.org/reclaiming-breathable-air-for-a-sustainable-planet/

**People First or Nation First: Mantra for New World Order?**

As we reflect on 2025 from the vantage point of January 2026, a defining paradox becomes impossible to ignore. The year opened with an unprecedented density of global convening's; leaders spoke at length about water security, sustainable industrialization, social protection, gender equality, and climate action. Declarations were issued, roadmaps unveiled, and commitments reaffirmed across nearly every Sustainable Development Goal. The machinery……..Read more https://focusglobalreporter.org/people-first-or-nation-first-mantra-for-new-world-order/

**Reweighing Energy Security in a Fragmented World**

The global energy system in 2025 is marked by a stark contradiction. Renewable energy is scaling at an unprecedented pace, yet fossil fuels continue to dominate overall consumption. As UN Secretary-General António Guterres has observed, "The energy transition is unstoppable, but it is not yet fast enough or fair enough." With carbon emissions reaching a record 38.1 billion tonnes of $CO_2$ in 2025, it is evident that current progress falls well short of what climate stability requires. This imbalance is not simply a matter of technology or economics; it is fundamentally geopolitical, shaped by power asymmetries, structural dependency, and the erosion of effective collective global governance..……..Read more https://focusglobalreporter.org/reweighing-energy-security-in-a-fragmented-world/

**A Call to Re-energise ESG Ecosystem**

UN Secretary-General António Guterres has been a vocal advocate for integrating ESG principles into global finance, often emphasizing that sustainability is not just a moral issue but a necessity for economic survival. He frequently critiques "greenwashing" and calls for transparent, science-based commitments to net-zero. In 2026, ESG is no longer a reputational add-on or a voluntary reporting exercise. It has become the operating grammar through which risk, value creation, and long-term competitiveness are evaluated across markets and sectors. Climate, biodiversity and pollution are deeply interconnected, and it enables these linkages to be embedded into governance and capital allocation. In India the ESG policy has been formulated on the basis of the assessment that environmentally friendly and relatively low-polluting industries are suitable for the State's industrial ecosystem. Kerala has now become the first State to implement a comprehensive ESG policy.……Read more https://focusglobalreporter.org/a-call-to-re-energise-esg-ecosystem/

**Charting a New Era in Global Ocean Governance**

The scale of what the BBNJ Agreement governs is hard to overstate. The high seas constitute roughly two-thirds of the world's oceans, covering more than 40% of the planet's surface and over 90% of Earth's marine habitat by volume. These waters are home to deep trenches, seamount chains, vast midwater ecosystems, and life forms from microscopic plankton to migratory whales that play central roles in nutrient cycling, climate regulation, and global biodiversity. Yet prior to this treaty, less than 1.5% of these areas were formally protected, and human pressures such as overfishing, shipping, deep-sea mining exploration, and climate-driven change were advancing faster than the rules governing their impacts.……Read more https://focusglobalreporter.org/charting-a-new-era-in-global-ocean-governance/

**Mother of all Agreements, will it be a Blockbuster?**

The proposed India–EU Free Trade Agreement (FTA) is unprecedented in scale and ambition. Over its implementation period, the European Union is expected to eliminate import duties on roughly 99.5% of traded goods from India, while both partners together will liberalise 96–99% of their mutual goods trade. European exporters stand to save billions of euros annually, while Indian firms would gain preferential access across a wide range of sectors, including textiles, apparel, leather, chemicals, engineering goods, base metals, gems and jewellery, pharmaceuticals and food products. If India's growth trajectory materialises as projected, this agreement could underpin a free-trade space accounting for nearly a quarter of global GDP and close to a third of world trade within the next decade……...Read more

https://focusglobalreporter.org/mother-of-all-agreements-will-it-be-a-blockbuster/

**Heralding Indo-America Relations in New Perspective**

Barely a year after the United States imposed a punishing 50% tariff wall on Indian exports, India has negotiated its way out of what many described as Washington's trade penalty box. The tariff reduction to 18% lower than what some Asian competitors face is being celebrated in New Delhi as a diplomatic and economic breakthrough. It is also a notable retreat from the harsher 26% reciprocal rate that had earlier been floated under US President Donald Trump's protectionist trade push. On the surface, this is a public relations victory for Prime Minister Narendra Modi, reinforcing his government's narrative that strategic patience and diplomatic engagement can deliver results. ……Read more https://focusglobalreporter.org/heralding-indo-america-relations-in-new-perspective/

**Is It Time to Rethink Planetary Health Diplomacy Through a Nexus Approach?**

The age of treating climate and health as separate policy silos is rapidly ending. From overcrowded emergency wards during heatwaves to vector-borne diseases expanding into new geographies, the evidence is clear: the climate crisis is fundamentally a health crisis. WHO estimates that 3.6 billion people currently live in areas highly susceptible to climate change, and between 2030 and 2050, climate impacts could cause an additional 250,000 deaths annually from undernutrition, malaria, diarrhoea, and heat stress. Direct health damages alone are projected to cost between 2 and 4 billion US dollars annually by 2030, excluding losses linked to agriculture, water security, and livelihoods. As WHO Director-General Tedros Adhanom Ghebreyesus has repeatedly emphasised, the most urgent reasons for climate action lie not in distant projections but in immediate and escalating health consequences.……Read more

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**Recalibrating ESG-Aligned Finance & Governance to Combat Greenwashing**

In an era where sustainability has moved from boardroom rhetoric to regulatory mandate, the battle against greenwashing has become one of the defining challenges of global finance and governance. As corporations, financial institutions, and governments pledge their allegiance to Environmental, Social, and Governance (ESG) principles, the gap between promise and practice has never been more scrutinized. Leaders of major international organizations have been vocal in their call to end greenwashing. United Nations Secretary-General António Guterres has been particularly forthright, "We must have zero tolerance for net-zero greenwashing. It is rank deception. This toxic cover-up could push our world over the climate cliff. The sham must end"……Read more

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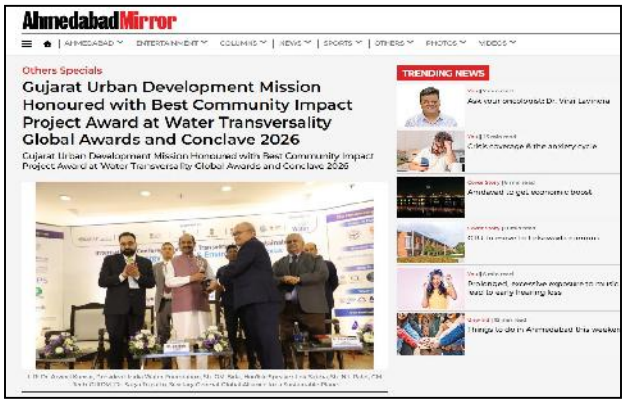



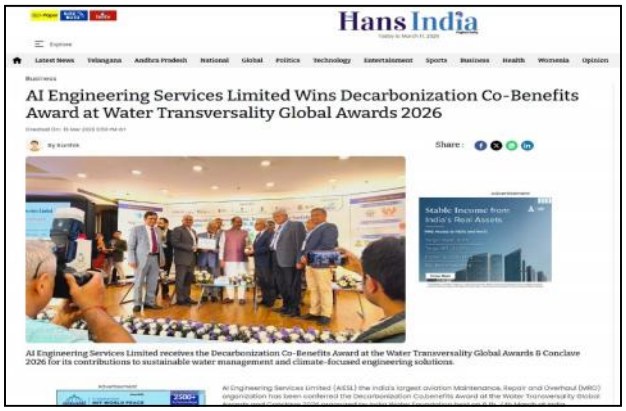


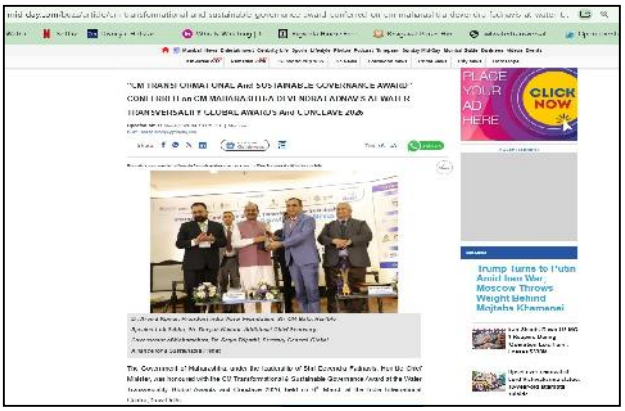


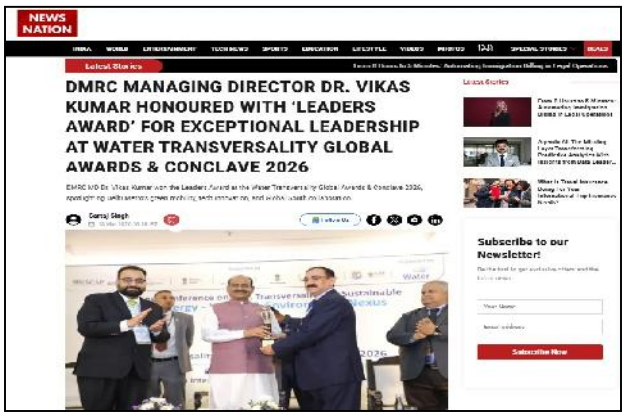


The Tribune

Satya Tripathi Receives Lifetime Achievement Award at Water Transversality Global Awards & Conclave 2026

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# Conclave honours leadership in water and sustainability

Dr Arvind Kumar, President of the foundation, Om Birla, Speaker of the Lok Sabha, Dr Satya Tripathi, Secretary General-Global Alliance for a Sustainable Planet and Neeraj Kumar Jha, Postmaster General, Delhi Postal Circle

A call for integrated solutions echoed through the halls of the India International Centre as the Water Transversality Global Awards & Conclave 2026 brought together global leaders and policymakers for an international conference on the ESG transversality of the water, energy, health and environment nexus. Organised by the India Water Foundation with the support of the UN ESCAP SSWA Office, NITI Aayog and key ministries, the conclave emerged as a platform for reimagining governance through the lens of sustainability.

The organisers said, "The highlight of the inaugural evening was the presence of chief guest Om Birla, Speaker of the Lok Sabha, who presented the honours. A special cover was released by India Post to commemorate the event. Among other attendees were Raj Bhushan Chaudhary, MoS, Jal Shakti, and Harsh Malhotra, MoS, Corporate Affairs, Road Transport & Highways."

"The conclave concluded in the presence of Lokesh Muni, Rakesh Jain and RP Singh. Forty-nine Water Transversality Global Awards were conferred upon distinguished leaders for good governance, including Devendra Fadnavis, Conrad K Sangma and Harish Sanghvi, as well as various organisations," they said.

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# Conclave honours leadership in water and sustainability

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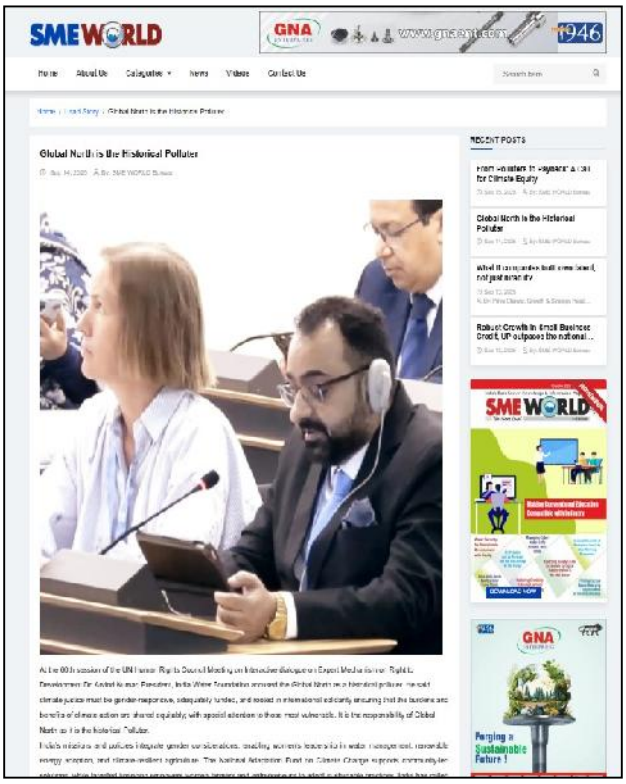

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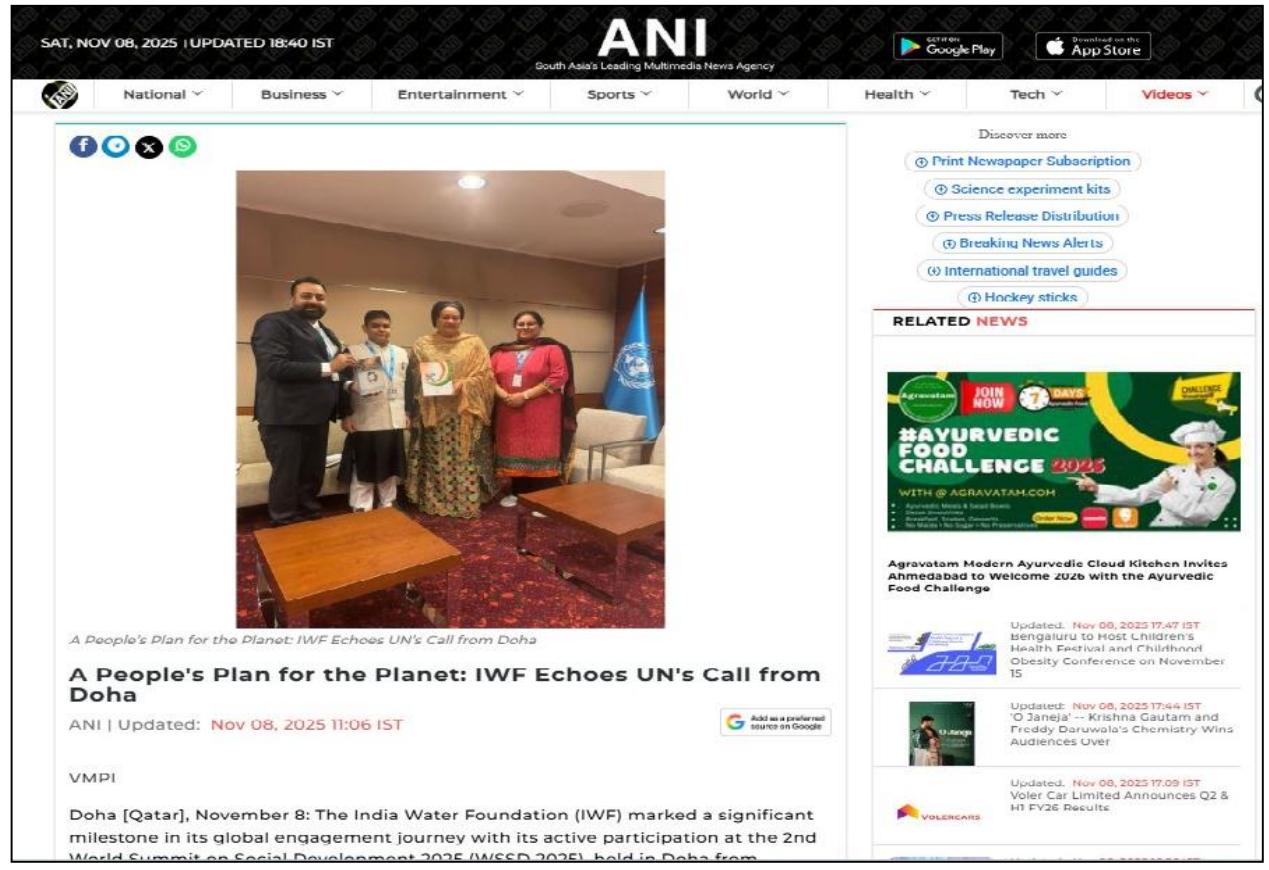

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A People's Plan for the Planet: IWF Echoes UN's Call from Doha

ANI | Updated: Nov 08, 2025 11:06 IST

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Doha [Qatar], November 8: The India Water Foundation (IWF) marked a significant milestone in its global engagement journey with its active participation at the 2nd World Summit on Social Development 2025 (WSSD 2025), held in Doha from

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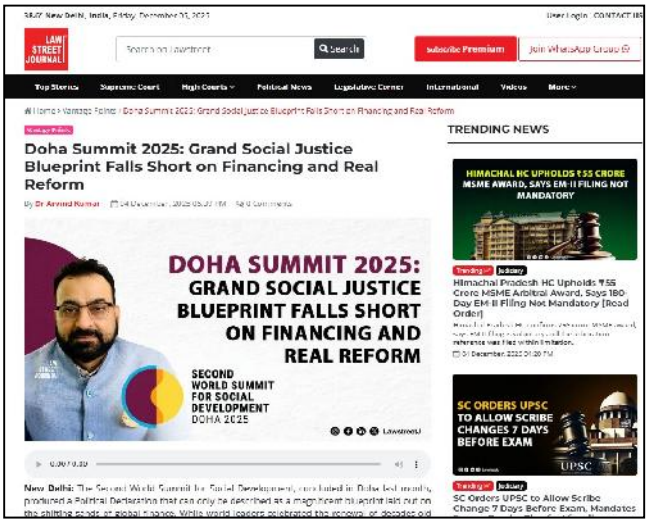

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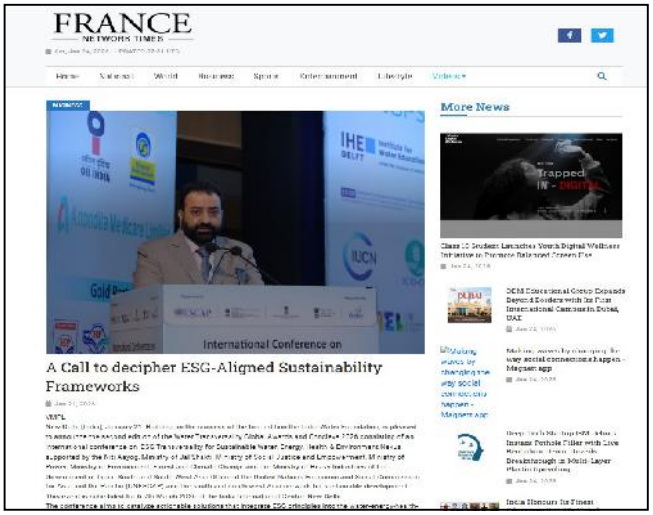

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Architect of Water Transversality Honoured at World Water Leadership Congress



Architect of Water Transversality Honoured at World Water Leadership Congress

New Delhi (India), February 24: The India Water Foundation (IWF) proudly announces that its President, Dr. Arvind Kumar has been felicitated with the prestigious Leaders Award for Most Impactful Water Management Leader, certified by the World Federation of CSR Professionals. The honour was conferred

HT SYNDICATION

India Water Foundation Felicitated for Integrated Transversality Leadership

Posted On: 2025-02-13 Posted By: PNN Syndication

Health & Lifestyle National Education Politics Cities Real Estate & Construction International PNN

New Delhi: Feb. '13 –

The India Water Foundation (IWF) has honoured with a prestigious award by the Nurserymen Association of India in recognition of its outstanding contributions across diverse domains including water conservation, environmental sustainability, climate resilience, and community empowerment. The award was presented during "Prakriti Utsav" organised by Nurserymen Association of India on 12 February 2025 at the India International Centre.



The recognition reflects the shared vision between the two institutions in promoting ecological restoration, strengthening green livelihoods, and advancing sustainable natural resource management. The award acknowledges India Water Foundation's integrated approach aligned with national priorities and global sustainability goals.

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General

## Water Transversality is Unlocking Equity through Integration

"There is an urgent need to adopt a transversality approach to water governance, one that breaks sectoral silos and embeds water at the centre of planning for poverty reduction, health, agriculture, energy, and climate resilience. Traditional, single-sector strategies are no longer adequate in the face of complex and socio-economic inequities. Instead, we need integrated policy frameworks that bring government, industry, civil society, and communities together to co-create solutions that benefit both people and the planet," noted Sh. Pabitra Margherita, Minister of State for Jal Shakti, Government of India, addressing over 300 online participants, experts, and global participants at a High-level policy dialogue on 'Water Transversality for Poverty Alleviation and Social Inclusion' organised by the India Water Foundation as an official side event of the 68th Session of the UN Commission on Social Development. The event spotlighted water not as a mere utility, but as a transformative force weaving through health, livelihoods, gender equity, and climate resilience, especially in a nation where rural poverty and water stress

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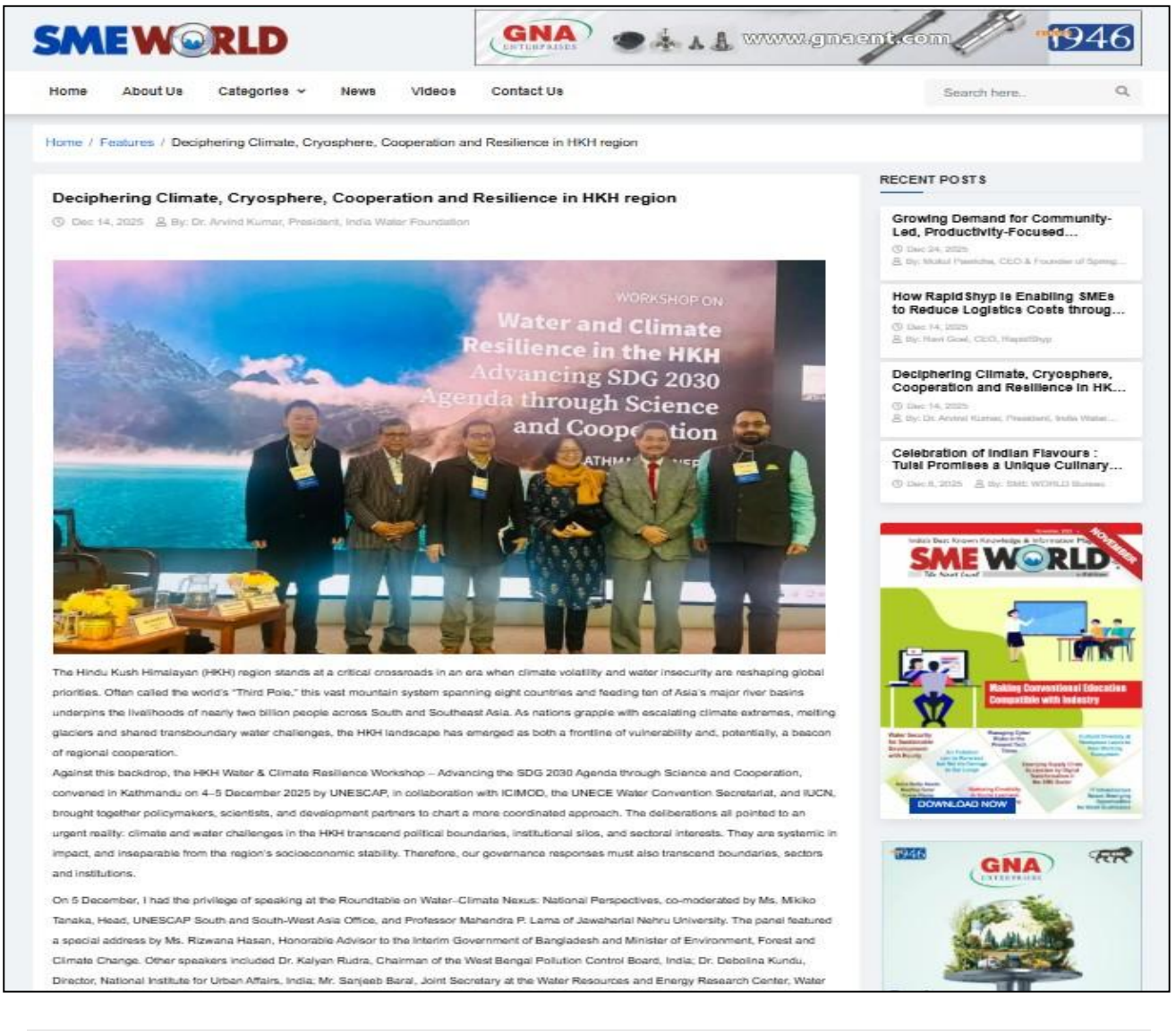

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## Deciphering Climate, Cryosphere, Cooperation and Resilience in HKH region

Dec 14, 2025 By: Dr. Arvind Kumar, President, India Water Foundation




The Hindu Kush Himalayan (HKH) region stands at a critical crossroads in an era when climate volatility and water insecurity are reshaping global priorities. Often called the world's "Third Pole," this vast mountain system spanning eight countries and feeding ten of Asia's major river basins underpins the livelihoods of nearly two billion people across South and Southeast Asia. As nations grapple with escalating climate extremes, melting glaciers and shared transboundary water challenges, the HKH landscape has emerged as both a frontline of vulnerability and, potentially, a beacon of regional cooperation.

Against this backdrop, the HKH Water & Climate Resilience Workshop – Advancing the SDG 2030 Agenda through Science and Cooperation, convened in Kathmandu on 4–5 December 2025 by UNESCAP, in collaboration with ICIMOD, the UNECE Water Convention Secretariat, and IUCN, brought together policymakers, scientists, and development partners to chart a more coordinated approach. The deliberations all pointed to an urgent reality: climate and water challenges in the HKH transcend political boundaries, institutional silos, and sectoral interests. They are systemic in impact, and inseparable from the region's socioeconomic stability. Therefore, our governance responses must also transcend boundaries, sectors and institutions.

On 5 December, I had the privilege of speaking at the Roundtable on Water–Climate Nexus: National Perspectives, co-moderated by Ms. Mikiko Tanaka, Head, UNESCAP South and South-West Asia Office, and Professor Mahendra P. Lama of Jawaharlal Nehru University. The panel featured a special address by Ms. Rizwana Hasan, Honorable Advisor to the Interim Government of Bangladesh and Minister of Environment, Forest and Climate Change. Other speakers included Dr. Kalyan Rudra, Chairman of the West Bengal Pollution Control Board, India; Dr. Debolina Kundu, Director, National Institute for Urban Affairs, India; Mr. Sanjeeb Baral, Joint Secretary at the Water Resources and Energy Research Center, Water

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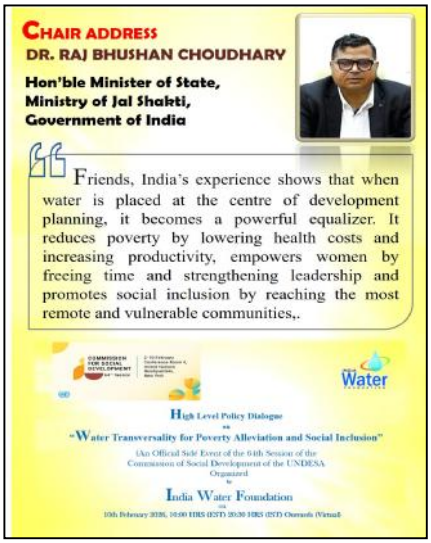


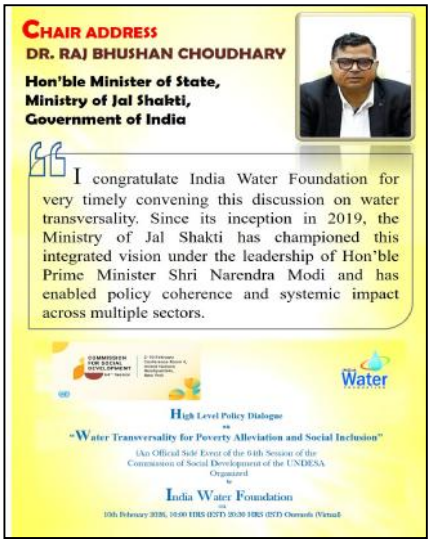


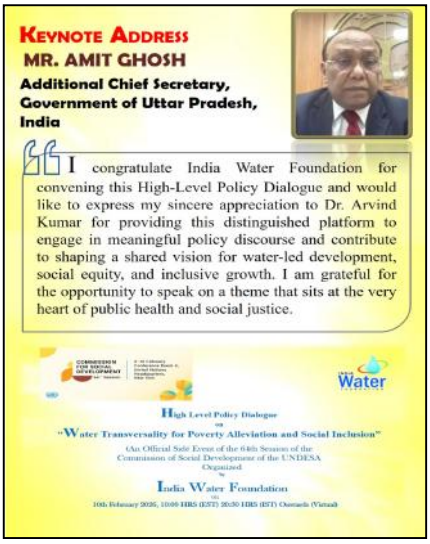


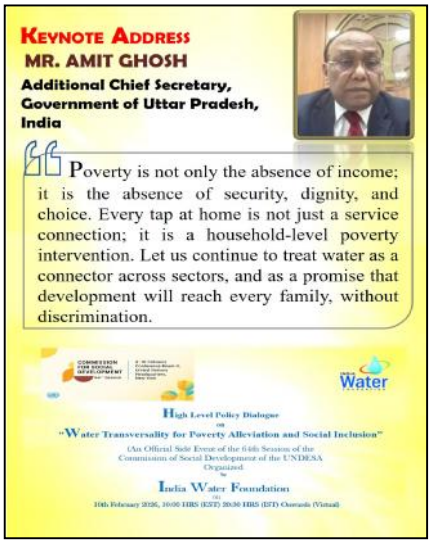


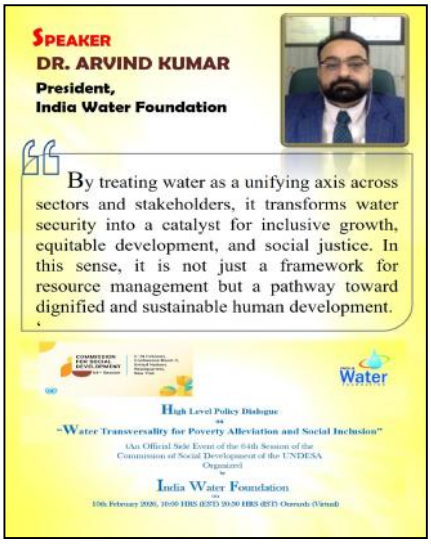


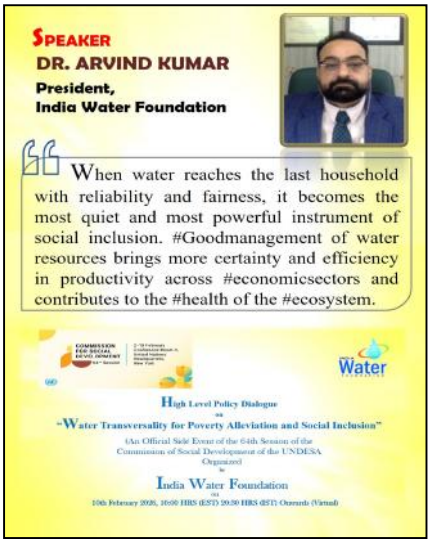


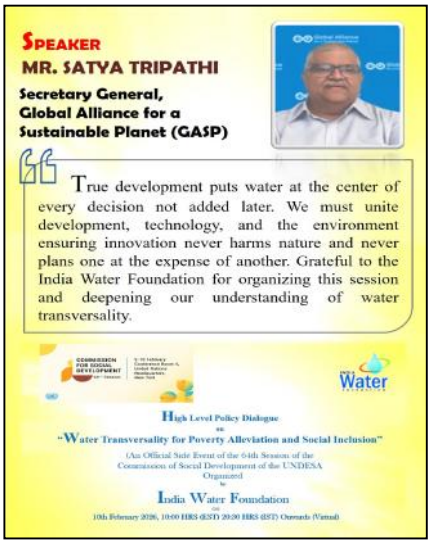


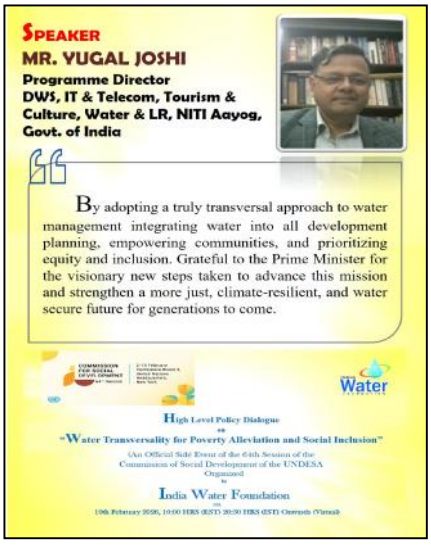


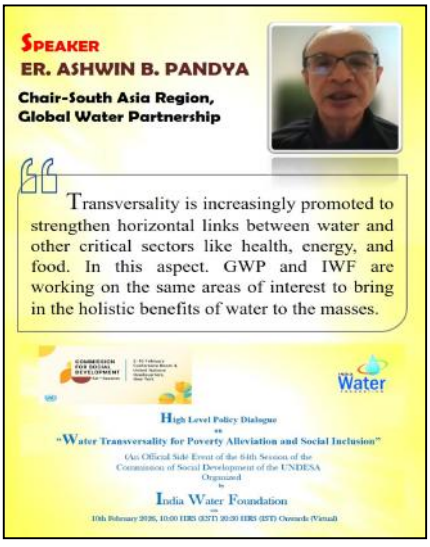

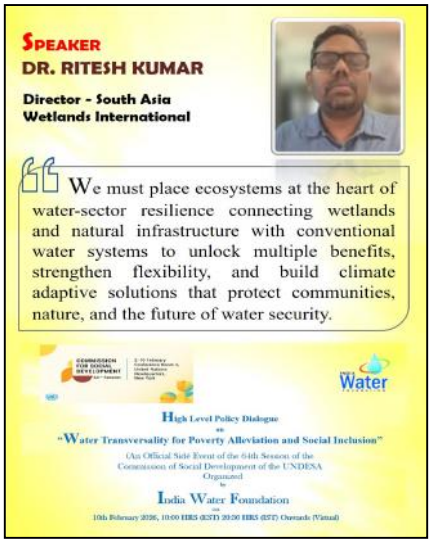


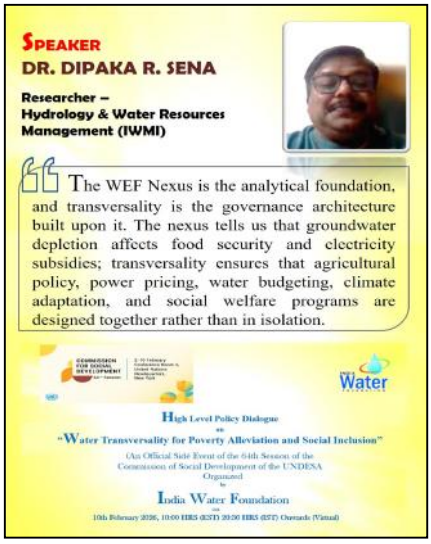


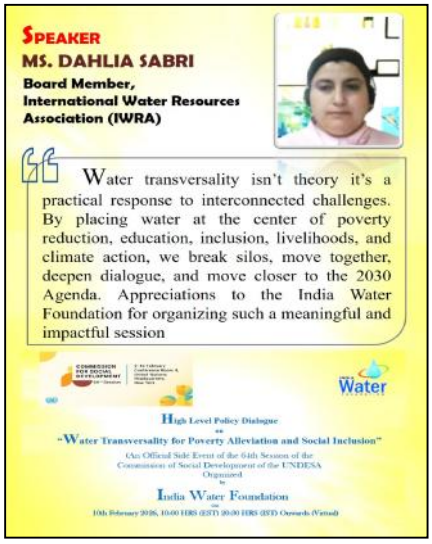


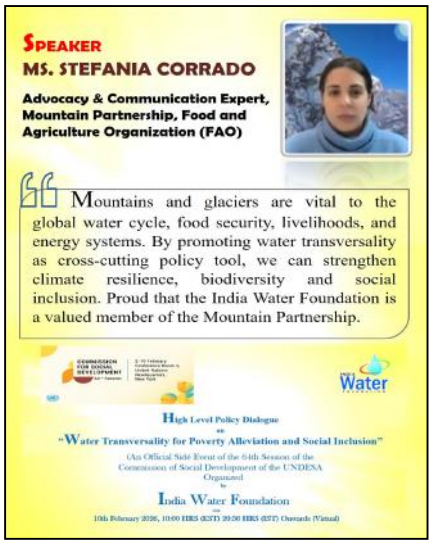


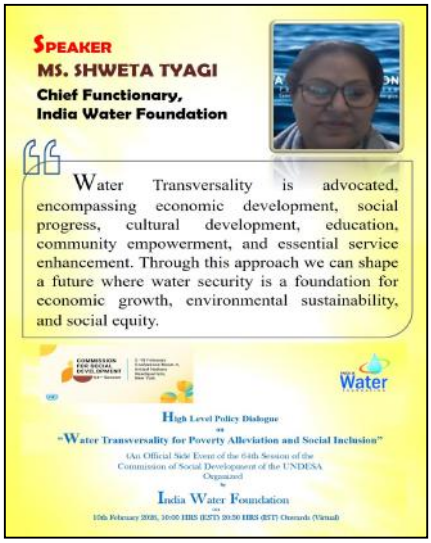


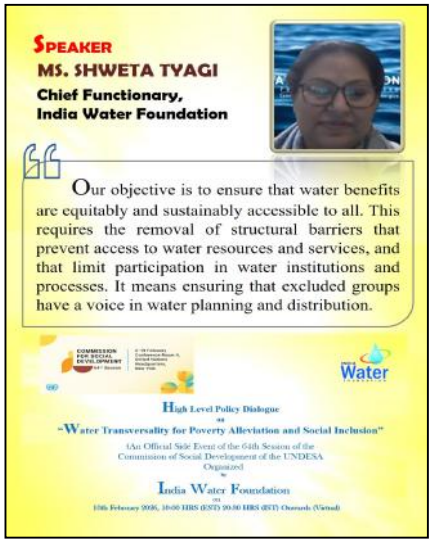

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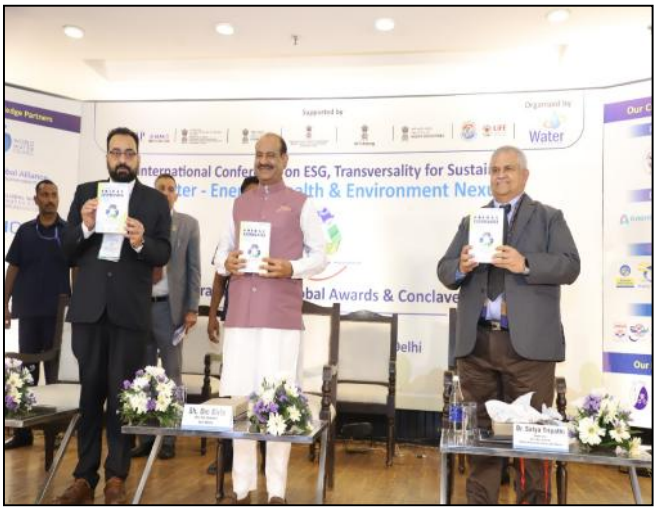

















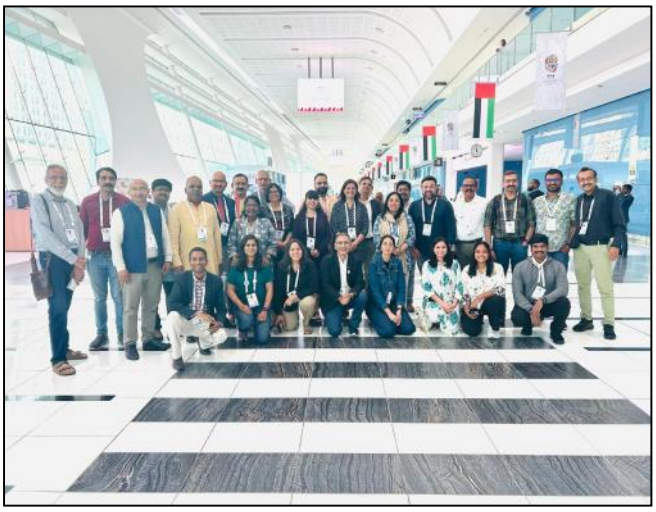



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