



# CHRONICLE - X

(September 2023 - March 2024)

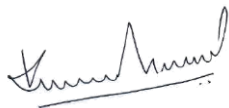


## *From Editors Desk*

*Dear Jalmitra,*

“It gives me immense pleasure to present India Water Foundation’s chronicle with highlights of our last six months. In September last year countries, civil societies met in Geneva to attend the 55<sup>th</sup> session of the UN Human rights Commission meetings to analyse and review among several issues the clean water and sanitation a basic human right of every individual. In December world leaders, UN agencies, civil societies, private sector etc. gathered at the COP 28 climate change conference in Dubai, UAE. It was the biggest of its kind. COP28 was particularly momentous as it marked the conclusion of the first ‘global stocktake’ of the world’s efforts to address climate change under the Paris Agreement. Having shown that progress was too slow across all areas of climate action – from reducing greenhouse gas emissions, to strengthening resilience to a changing climate, to getting the financial and technological support to vulnerable The two-week-long conference got underway with a historic agreement on the operationalization of funding arrangements for addressing loss and damage, including a new dedicated fund under the UNFCCC – the first time a substantive decision was adopted on the first day of the conference. Commitments to address loss and damage started coming in moments after the decision was gavelled, totalling more than USD 600 million to date. We are at a pivotal time – for people, societies, economies, and our planet and need all-inclusive sustainable solutions. Let’s find them with cooperation, cohesion and collaboration. I thank my team because I believe teamwork is the ability to work together toward a common vision and is an ability to direct an individual accomplishment toward organizational objectives. It is about finding your unique blueprint and expressing that courageously and confidently.”

Thank you



**Dr. Arvind Kumar**



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## EDITORIAL

# Keeping the Game On for Climate Action in 2024 and beyond

Dr. Arvind Kumar\*

Fossil fuels, carbon dioxide, and various greenhouse gas emissions have made climate change a more predominant problem in our society, and it has given climate change the power to ultimately impact the way we approach sustainable business and daily lifestyle habits by paying more attention to the global average temperature and ways to reduce emissions. It is negatively affecting the temperature, wildlife, ecosystems, and natural resources that human life depends on for survival. As per the World Meteorological Society “The state of the climate in 2023 gave ominous new significance to the phrase “off the charts.” The State of Global Climate report confirms 2023 as hottest year on record by clear margin. It shows that records were once again broken, and in some cases smashed, for greenhouse gas levels, surface temperatures, ocean heat and acidification, sea level rise, Antarctic sea ice cover and glacier retreat.



Heatwaves, floods, droughts, wildfires and rapidly intensifying tropical cyclones caused misery and mayhem, upending every-day life for millions and inflicting many billions of dollars in economic losses. 2023 was the warmest year on record, with the global average near-surface temperature at 1.45 °Celsius above the pre-industrial baseline. It was the warmest ten-year period on record. Climate does not only threaten human life, but various animal species on the planet as well. Rising temperatures, specifically in the Arctic region, have caused ice glaciers to melt and in turn have threatened all forms of life that dwell in cold environments. Many animals have been left with no choice but to flee their natural habitats. Also, climate change has affected plants, trees, and flowers as they are no longer following their natural life cycles due to these spontaneous shifts in weather patterns.

The climate crisis is THE defining challenge that humanity faces and is closely intertwined with the inequality crisis – as witnessed by growing food insecurity and population displacement, and biodiversity loss. Weather and climate hazards exacerbated challenges with food security, population displacements and impacts on vulnerable populations. They continued to trigger new, prolonged, and secondary displacement and increased the vulnerability of many who were already uprooted by complex multi-causal situations of conflict and violence. Renewable energy generation, primarily driven by the dynamic forces of solar radiation, wind and the water cycle, has surged to the forefront of climate action for its potential to achieve decarbonization targets.

Addressing loss and damage is the crucial third pillar of climate action: providing support to people and communities after they have experienced climate-related impacts. Loss and damage is linked to adaptation and mitigation because it happens when efforts to reduce emissions are not ambitious enough and when adaptation efforts are unsuccessful or impossible to implement. In the lead-up to COP29 in 2024, countries will be looking for confirmation that the World Bank can meet the conditions required to host the loss and damage fund. Developed nations must put forth much more finance to fill the loss and damage fund. While the \$700 million pledged at COP28 is a start, vulnerable countries may face as much as \$580 billion in climate-related damages by 2030.

Worldwide, a substantial energy transition is already underway. In 2023, renewable capacity additions increased by almost 50% from 2022, for a total of 510 giga watts (GW). Such growth marks the highest rate observed in the past two decades and demonstrates the potential to achieve the clean energy goal set at COP28 to triple renewable energy capacity globally to reach 11 000 GW by 2030. I'm hugely encouraged to see leading organisations not backing down from their climate commitments. Instead, many are re-evaluating how they can maximise quality and transparency to achieve them. There is also the continuing trend towards companies investing in their own projects to secure credit supply for their long-term net-zero targets. Given that the global community needs to cut predicted 2030 GHG emissions by 50% to stay on track with the Paris Agreement, there is much to do and governments, civil societies and businesses around the world have a crucial role to play.

However, I believe it is well within our reach and the solutions are out there. As I look at some of the outstanding work some are doing to reduce their environmental impact, I feel purposefully optimistic that we can make 2024 a pivotal year for climate and nature.

*\*Editor, Focus Global Reporter*



## ARTICLE

# INBO's Commitments to Strengthen Water Management by the Basins, for The Basins!

Dr. Eric Tardieu\*

**A**s water resource management at the basin level is increasingly recognized as an essential component in effectively addressing the expanding number of challenges stemming from climate change and resource scarcity, basin organisations are peacemakers and accelerators of sustainable development. Whether operating at a national or transboundary level, they are, by construction, multi-stakeholder platforms fostering dialogue, between countries on a transboundary scale, between users and water stakeholders on a sub-national scale.



### **Basin approach to boost the achievement of Sustainable Development Goals (SDGs)**

In order to accelerate the achievement of SDG 6.5.1 (“Degree of implementation of integrated water resources management”) and 6.5.2 (“Proportion of transboundary basins where an operational arrangement for water cooperation is in place”), it is important to develop these transboundary and sub-national scales of sharing and solidarity.

Cooperation at the level of river basins has proved its worth and brings concrete benefits to the populations. They are relevant structures to ensure a joint and sustainable management of surface and groundwater resources and lead ambitious actions of adaptation to climate change. On a transboundary scale, cooperation facilitates a shared vision of the use of water resources, pressures and uses; it brings more means by the mutualisation of technical and human resources and hydraulic infrastructures, when they are necessary, thanks to a concertation on their location; the experiences on hydraulic infrastructures common to several countries, their successes (sharing of benefits, peace preservation...) and difficulties must be more widely shared. The United Nations Water Conventions (1992, 1997) are valuable tools for improving this cooperative and integrated management of transboundary basins.

Designing and implementing plans for Integrated Water Resources Management (IWRM) at basin level is effective: in terms of costs, investments in infrastructures are made based on the

hydrological context rather than on purely administrative consideration. In terms of knowledge, sharing of information between the data producers of the basin (including but not limited to in-situ monitoring networks and remote sensing such as satellite) and the involvement of water users in basin councils improve the diagnosis of the state of water resources. In terms of governance, participatory basin management creates ownership of the measures adopted, and provides the basis for an operational approach to IWRM.

This operational approach to IWRM helps to make concepts of nexus and source-to-sea a reality at basin level.

Launched by INBO during the 9<sup>th</sup> World Water Forum, sponsored by UNECE, OMVS, OMVG, France, Morocco, Senegal and Switzerland, the Dakar Action Plan for river, lake and aquifer basins promotes this approach of IWRM at basin level.

Already gathering 91 signatories from 50 countries, the Dakar Action Plan aims to accelerate the achievement of SDGs by the basins and for the basins, both national and transboundary.

It provides the technical definition of the principles for actions and commitments needed to strengthen cooperation, planning, legal and institutional framework of basin organisations as well as the search for innovative financing.

### **Enhancing complementarity between national and transboundary approaches**

At the UN Groundwater Summit (7-8 December 2022, Paris), the Dakar Action Plan for basins was followed by a specific coalition: Transboundary Water Cooperation Coalition.

Transboundary basins account for 60 per cent of the world's freshwater flows. 3 billion people depend on their water resources. The management of these transboundary basins should be aligned with the principles of sustainable and equitable use, upstream-downstream solidarity and no-harm principles. In a world of limited resources, cooperative management of transboundary basins is essential to meet the challenges of our times: sustainable economic development, human and environmental health, biodiversity preservation, climate adaptation and mitigation, disaster risk reduction and lasting peace.

The Transboundary Water Cooperation Coalition (TWCC)<sup>[i]</sup> gathers 40 countries, regional integration and international organisations, international financial institutions, NGOs, academic and research centres. It encourages concrete commitments to support the advancement of transboundary water cooperation.

Furthermore, for effective basin management, greater complementarity between transboundary and national basin approaches is needed. While transboundary basin organisations (TBOs) provide a relevant framework for transboundary management, they must be able to rely on a national, and then local implementation, so that operational measures can be implemented in the territories. And conversely, national basin approaches must be consolidated at the transboundary level, under the coordination of an operational, effective and recognised TBO.

At national and local levels, basin organisations serve as multi-stakeholder platforms. They play a crucial role in fostering an integrated approach aligned with the SDGs, facilitating precise and comprehensive diagnostics of water resources and needs, enabling participatory planning, and promoting better ownership of implemented measures. By doing so, they optimise results for coordinated sectoral policies. However, to enhance basin management further, it is imperative to better involve local authorities, communities, economic sectors, and civil society actors in these initiatives. Strengthening cooperation among relevant institutions, particularly between basin organisations worldwide and within each region, is essential. This collaboration facilitates the exchange of experiences and best practices in water management, ultimately contributing to more effective and sustainable outcomes.

### **Improve city-basin dialogue to improve basin management**

Most of the world’s population already lives in cities. By 2050, there will be nearly 6 billion city dwellers, 70% of the global population. This concentration of populations in urban areas creates many challenges. Cities are singularities in a hydrographic basin: they are at the same time a source of growing pressure on water resources, a territorial unit in demand of climate adaptation solutions and a powerful actor holding significant means.

Strengthening the dialogue between cities and organisations in charge of planning and managing water resource at the scale of river basins is the key for a better management of water resources: this can be referred as “City-Basin Dialogue”. INBO has worked with the OECD on this topic, as well as published with the IWA the handbook on basin-connected cities – including around 40 case-studies from all over the world to support decision making in strengthening the city’s connection and integration with its river basin.

### **Incubate water and climate projects at basin scale: an effective response to the challenge of adaptation**

More frequent and intense floods and droughts, reduced river flows, degradation of aquatic ecosystems, rising sea levels resulting in salinization of coastal groundwater: water is one of the first victims of climate change, which poses significant threats to water security, food security,

and ecosystem health. Investing in water, and in particular in planning of adaptation to climate change at basin level, is a necessity.

One effective strategy that emerges to address climate change impacts is the incubation of water and climate projects at the basin scale. By providing technical and financial support to innovative adaptation initiatives, basin organisations can help communities build resilience, reduce vulnerability, and adapt to changing climatic conditions. These projects may include infrastructure upgrades, ecosystem restoration efforts, community-based water management initiatives, and capacity-building activities aimed at enhancing adaptive capacity and promoting sustainable development.

A priority of action is to bridge the gap between actors developing ideas of projects of adaptation to climate change at basin levels and donors of climate finance. To help adaptation projects come into existence, an incubation platform for water and climate projects was launched by INBO at the COP22 United Nations Climate Change Conference (Marrakesh, 2016). This incubator largely focused on projects for adaptation to climate change in the African continent. It now supports project development all over the world. Technical and institutional support is provided by the platform. After being detected, it is necessary to be able to make a clear description of the project, its objectives and needs and to comply with the administrative procedures of donors to access climate finance.



Image Source/Courtesy/Credit: IUCN

### **Strengthening water and ecological securities**

The current anthropogenic biodiversity crisis and global water crisis are fundamentally intertwined. Being successful in addressing water and biodiversity crises implies recognizing these interdependencies in our policies, which are still very much fragmented. These policies are designed in silos and often implemented on a far too limited scale. It greatly limits their potential.

To make a difference, there is a need to develop a greater consistency of water and biodiversity policies and to implement ambitious measures in a systematic way at the scale of the hydrographic basins of lakes, rivers and aquifers.

This is the objective of the “Water and Nature Declaration” launched during the IUCN World Water Congress (Sept. 2021, Marseille) by INBO, the International Office for Water (OiEau), The Nature Conservancy (TNC) and the World Water Council (WWC).

It recognizes that there is no water security without ecological security, and vice versa. It encourages dialogue between the water and nature communities, to make water management and nature protection policies more coherent.

It is also a call to action, for an acceleration in the implementation of aquatic Nature-based Solutions (NbS), in the form of Natural Water Retention Measures (NWRM: aquatic NBS promoted by the European Commission<sup>[ii]</sup> as efficient techniques using ecosystems for water storage). Such Nature-based Solutions are no-regret measures that deliver multiple benefits when planned in numbers at basin scale: water security, climate mitigation and adaptation as well as biodiversity preservation.

### **10<sup>th</sup> World Water Forum: “Water management by the basins, for the basins!”**

Amidst the discussions and deliberations at the 10<sup>th</sup> Water Forum, set to take place from 18 to 25 May in Bali, Indonesia, a segment dedicated to basin management is being organised by INBO.

For 30 years, INBO has been working to gain recognition for the basin scale, with a view to better management of water resources. This dedicated “basin” segment, first introduced at the World Water Forum in Dakar in 2022, stands as a testimony to the collaborative efforts of INBO, alongside partners such as the Organisation for the Development of the Senegal River (OMVS), the Organisation for the Development of the Gambia River Basin (OMVG), the United Nations Economic Commission for Europe (UNECE), and Switzerland, among others.

Aligned with the overarching theme of “Water for Shared Prosperity”, this political segment aims to engage stakeholders and mobilise action towards accelerating the achievement of the SDGs by the basins, for the basins.

It will address complementary themes such as financing, water information systems and cooperation.

This segment, and more broadly the World Water Forum, will be a dynamic platform for sharing knowledge and experience and promoting innovative solutions, in line with our mission to ensure sustainable and balanced management of the world’s river basins.

*\*Secretary General – International Network of Basin Organizations, Director General – International Office for Water, Vice President – World Water Council*

[i]<https://www.riob.org/en/riob/international-initiatives/transboundary-water-cooperation-coalition>

[ii]<https://ec.europa.eu/environment/water/adaptation/ecosystemstorage.htm>

## **ABOUT AUTHOR**

Dr Eric Tardieu is Director General of the International Office for Water (OiEau) since 2017, and Secretary General of the International Network of Basin Organizations (INBO) since 2018.

He's an Environmental Engineering, graduated from Ecole Polytechnique, with a PhD in membrane filtration applied to urban wastewater treatment. After serving for French Ministries of Agriculture and Environment, he held successive responsible positions in the public sector for national, regional and local authorities, implementing policy regulations, designing multistakeholders strategies and plans of measures. He has been engaged not only in the field of water resources management and environmental protection, but also public policies for innovation, research and attractivity, public private partnerships or European and international cooperations. Since 2022, he also serves as Secretary General of IWRA and Vice-President of the World Water Council.

## INTERVIEW

### DR. PEMA GYAMTSHO

Director General,  
ICIMOD

**D**r. Pema Gyamtsho is the Director General of ICIMOD. He has served the Royal Government of Bhutan for over three decades in natural resources management and planning, rural development, agriculture, forestry, livestock and food production, rangeland management, livestock development, participatory approaches, research and extension institutional building, climate change and environmental protection, biodiversity conservation and organic farming. He also previously had led ICIMOD efforts in policy and partnerships and regional rangeland management work. In his previous role as Minister of Agriculture and Forests, he was involved and often led to the enactment of over 60 pieces of legislation and throughout his career he has also worked at the grassroots level where he was overseeing the formation of over 400 farmers groups and cooperatives. He holds a PhD in Natural Science from the Swiss Federal Institute of Technology, Zurich.



*Dr. Arvind Kumar, Editor, Focus Global Reporter conducted an interview with Dr. Pema Gyamtsho, Director General of ICIMOD. Excerpts from the Interview are reproduced here.*

**EDITOR:** The Mountains of the Hindu Kush Himalaya hold the third largest store of snow and ice after the poles, crucial for the water and food security of 2 billion people in Asia. Given the rapid shrinkage of glaciers and snow-pack due to global temperature rise, what are some of the key challenges ICIMOD faces in addressing cryosphere-related risks, and what innovative approaches is the organization adopting to mitigate these challenges?

**DR. GYAMTSHO:** Some of the key challenges that ICIMOD faces in addressing cryosphere-related risks are associated with difficulties in collecting, accessing, or obtaining data and information from and for across the Hindu Kush Himalaya region needed to better understand current and future risks. This in turn poses challenges in linking upstream and downstream countries and communities in developing and scaling effective risk assessment and reduction solutions. There is still a huge knowledge gap regarding the rate and extent of cryosphere

changes that could only be addressed through a coordinated and harmonized approach among the regional countries.

However, there is enough evidence to show that the HKH region is experiencing high rates of warming and melting of glaciers. This was highlighted in the first ever comprehensive assessment of the state of the region (HIMAP) carried out by ICIMOD and published in 2019

which stated that even if the global rise in temperature could be limited to 1.5 degree C, it will be too hot for this region. The second flagship report in 2023 -the Himalayan Water, Ice, Society and Ecosystems (HiWISE) revealed that the rate of glacier mass loss increased by 65%, a significant increase (from an average of  $-0.17$  metres water equivalent (m w.e.) per year for the period 2000–2009 to  $-0.28$  m w.e.f. per year for 2010–2019). Hence, suggestions for mitigation/adaptation need to consider that the rate of change could continue to increase. The HiWISE report also highlighted that the diminishing snow cover will exert a significant impact on groundwater recharge, consequently reducing spring flows which are crucial for wellbeing of nearly 100 million people in the Hindu Kush Himalaya. In response, ICIMOD is actively advocating for springshed management in the HKH through a combination of protective and restorative measures.



Source/Credit/Courtesy: ICIMOD

Within the region, there are not many organisations with sufficient capacities to monitor the changes in cryosphere, including analysis of data, especially in Nepal, Pakistan, and Bhutan. ICIMOD is therefore, focusing on capacity building of institutions in these three countries, so that they can carry out their own measurements (both *in situ* and from remote sensing), analyse the data, and implement the results in planning appropriate adaptation strategies. Towards this end, ICIMOD is providing training on remote sensing, numerical modelling techniques (using open-source software), and fieldwork, including using UAVs (drones) to relevant institutions and other interested participants.

**EDITOR:** Air pollution in the Hindu Kush Himalayas is a critical issue, with billions regularly breathing air that exceeds safe limits. How does ICIMOD's clean air unit work to reverse the regional trend of worsening air quality, and what strategies are employed to monitor, assess, and communicate the scale of the problem?

**DR. GYAMTSHO:** Air pollution in the Hindu Kush Himalayas (HKH) is indeed a pressing issue, with significant amounts of pollution originating both within and outside the region, including the Indo-Gangetic Plain. ICIMOD has been actively working to address this problem through a dedicated programme - Stimulating



Source/Credit/Courtesy: ICIMOD

Actions for Clean Air. This programme focuses on generating high quality air pollution-related



data in a region that has historically been data-scarce. This data is being shared with relevant entities to inform policies and actions to reduce air pollution that can impact the lives of millions.

One of ICIMOD's key actions is in supporting regional member countries to set up real-time Air Quality Monitoring Stations (AQMSs). These stations measure different air pollutant concentrations with high precision and low frequency in different environments. The data from these AQMS, together with other open-source satellite data, air quality models, and emission inventory datasets, is then used to support relevant agencies in the regional member countries to operate dashboards in one integrated platform.

In the coming years, ICIMOD will strengthen its work on regional harmonisation of air quality monitoring and actions as well as creating climate benefits from air quality improvement. Its interventions in the brick sector aim to create an environmentally just and socially equitable brick industry in South Asia. This involves promoting lower emissions, energy-efficient technologies, and safe working conditions.

**EDITOR: ICIMOD's resilient river basins intervention aims to enhance understanding of benefit sharing and risk management opportunities among riparian nations. Could you discuss some successful examples of collaboration between upstream and downstream countries in the region, and how ICIMOD facilitates such partnerships?**

**DR. GYAMTSHO:** ICIMOD's Resilient River Basins Programme has been instrumental in fostering successful collaboration between upstream and downstream countries in various regions, thereby promoting transboundary cooperation and benefit sharing. In the Koshi Basin, for instance, ICIMOD facilitated the establishment of the Community-Based Flood Early Warning System (CBFEWS) in the Ratu and Khando rivers situated on the Nepal-India border. This initiative, aimed at mitigating flood risks from the above rivers, exemplifies effective upstream-downstream collaboration. Through hands-on training and technical support provided by ICIMOD's River Basins and Cryosphere Programme, Tiladi Koiladi Rural Municipality was empowered to implement the CBFEWS effectively. Furthermore, ICIMOD's facilitation of knowledge exchange and collaboration among stakeholders in the basin, including the National Disaster Risk Reduction and Management Authorities of Nepal and India through Koshi DRR Knowledge Hub (KDKH) has contributed to the sustainability of the initiative.

Similarly, in the Upper Indus Basin (UIB), ICIMOD has played a pivotal role in establishing a science-based policy network connecting Afghanistan, China, India, and Pakistan. This network serves as a platform for collaborative efforts to address critical water resource management issues and climate change impacts in the basin. Through conferences, workshops, and special issue publications, ICIMOD facilitates dialogue and cooperation among basin countries, promoting inclusive decision-making processes and gender-sensitive solutions. Overall, ICIMOD's interventions exemplify how fostering partnerships and knowledge exchange can lead to enhanced resilience and sustainable development in transboundary river basins.

**EDITOR:** In promoting the use of innovative and inclusive technologies, how does ICIMOD ensure that these tools are accessible and beneficial to all stakeholders, including marginalized communities and women?

**DR. GYAMTSHO:** ICIMOD takes several critical steps to ensure that innovative and inclusive technologies are promoted to be accessible and beneficial to all stakeholders, including marginalized communities and women. Inclusivity lies at the heart of ICIMOD's approach. ICIMOD uses various strategies like participatory approaches, sustainability principles, GESI-responsive design, and inclusive partnerships to address the diverse needs and challenges faced by different groups, including women, girls, youth, elderly and people with disabilities.

Using a participatory approach, ICIMOD actively involves communities to co-develop and implement solutions, and prioritizes accessibility by making tools readily available and understandable. ICIMOD translates resources into local languages and contexts and designs user-friendly web and mobile apps. Notably, platforms like SERVIR HKH provide free access to satellite imagery and geospatial data, empowering informed decision-making across diverse groups. This commitment extends beyond mere availability, as ICIMOD also invests in comprehensive training programs and local "lead trainers" to ensure effective use of these tools. Furthermore, partnerships with local NGOs and CBOs ensure training sustainability and reach marginalized communities, including women, often left behind in technological advancements. For instance, ICIMOD's Women in Geospatial Information Technology (WoGIT) program under the SERVIR initiative has trained close to 1500 female professionals on using earth observation data and geospatial information technology for different applications.

In addition, ICIMOD develops tools to cater to specific challenges and actively involves marginalized groups in the design and development of technologies. Projects like the Community-Based Flood Early Warning Systems (CBFEWS) and springshed management, exemplify this approach of actively involving local communities including women in data collection and dissemination, empowering them to take preventive actions against disasters.

By prioritizing these strategies, ICIMOD strives to bridge the digital divide and ensure that everyone, regardless of background or ability, can benefit from innovative technologies for a more equitable and resilient future in the Hindu Kush Himalayan region.

**EDITOR:** Climate-driven disasters, especially floods, have significant impacts on lives, property, heritage, and infrastructure across the region. How does ICIMOD collaborate with governments and other stakeholders to enhance preparedness and resilience to such disasters, particularly in vulnerable mountain communities?

**DR. GYAMTSHO:** Various strategies are adopted to collaborate with governments and other stakeholders to enhance disaster risk reduction for mountain communities which ranges from risk assessment to policy formulation and advocacy. Through risk assessments, ICIMOD works with partners to identify vulnerabilities and develop frameworks like the Multi-Hazard Risk

Assessment with a focus on cascading risks, while sharing data and tools for informed decision-making. At the policy level, ICIMOD collaborates with governments to develop policies and strategies for reducing disaster risk, fostering regional partnerships to leverage resources and expertise.

Early Warning Systems (EWS) are crucial for saving lives and properties. ICIMOD is collaborating with relevant local and national agencies in establishing Community-Based Flood Early Warning Systems (CBFEWS). This system was successfully piloted in Afghanistan, India, Nepal, and Pakistan, and is now being scaled up in Bhutan and Bangladesh. The central tenet of CBFEWS is the empowerment of communities through training and capacity building in operating and maintaining the warning mechanism. This fosters ownership and sustainability by creating local government led and community-driven "basket funds" for continued system operation.

ICIMOD's HIWAT tool offers 5-hour probabilistic forecasts for the HKH region, aiding weather prediction and disaster preparedness. Through the national hydro-met agencies and local organizations, this could be used to empower decision-makers at all levels to manage extreme weather events.

ICIMOD is also building national and sub-national capacities to inventories springs so that targeted and informed actions can be taken at policy and programme levels to protect, conserve and revive springs in the HKH.

Finally, ICIMOD works directly with communities to identify their needs and priorities, integrating traditional knowledge into culturally relevant and sustainable strategies for reducing disaster risks. This empowers communities to manage risks themselves, building long-term resilience in the face of disasters. By combining these strategies, ICIMOD plays a crucial role in reducing disaster risk and strengthening the resilience of vulnerable mountain communities across the Hindu Kush Himalaya region.

**EDITOR:** The thawing of permafrost in the region is accelerating, posing additional risks to water resources and infrastructure stability. What are some of ICIMOD's strategies for addressing these emerging risks, and how do they intersect with broader efforts to promote sustainable development in the region?

**DR. GYAMTSHO:** Very little is known about permafrost in the HKH, particularly on the steep slopes of the mountains. However, from the limited information available, it is acknowledged that there are extensive areas of permafrost in the high elevation areas. Increasing knowledge regarding permafrost is challenging because remote sensing techniques have limited application to permafrost studies and areas with permafrost tend to be difficult to access.

ICIMOD is now taking a concerted effort to study and understand permafrost changes and risks. It has started measurements to determine the status and changes in frozen ground using simple

low-cost sensors to validate maps generated using a probability analysis of permafrost existence. Currently, these sensors are installed in three areas in Nepal (Langtang, Mustang and Humla) and plans are in place to work with partners in Bhutan and Pakistan to increase the geographic extent of measurements.

Given the potential risks from permafrost thawing and destabilization and failure of slopes that could cause extensive damage to settlements and infrastructure, ICIMOD has initiated a permafrost strategy for the HKH, that will be part of a wider regional cryosphere strategy. In this way, countries can co-operate in promoting sustainable development, including road and hydropower construction at high elevation that considers changes in permafrost and the resulting risk.

ICIMOD is also developing a Multi Hazard Framework Assessment tool. This will be especially useful as permafrost change often acts in concert with other hazards. For example, permafrost thaw could trigger a GLOF from a moraine-dammed lake or a landslide that could dam a river and result in floods when the dam breaches.

**EDITOR: Scaling river-basin planning and management regionally requires effective science-policy dialogue mechanisms. How does ICIMOD foster such dialogues, and what role do digital and earth observation tools play in supporting evidence-based decision-making in river basin management?**

**DR. GYAMTSHO:** In the context of river basins, we are moving forward from data and knowledge generation to practical application to support informed river basin planning and associated infrastructure development. Recognizing the critical role of evidence-based decision-making, ICIMOD has developed a robust climate risk assessment framework specifically tailored for hydropower development projects. Currently, it is being applied in the Narayani basin of Nepal in collaboration with the Water and Energy Commission Secretariat of the Government of Nepal. The aim is to support the formulation of Climate Resilient Hydropower Development Guidelines, thereby enhancing the sustainability and adaptability of hydropower projects in the face of climate variability and change.

**EDITOR: Looking ahead, what are the main priorities and objectives for ICIMOD's cryosphere and water risks team, and how do you envision the organization's role in shaping sustainable water management practices in the Hindu Kush Himalaya region?**

**DR. GYAMTSHO:** ICIMOD is prioritizing capacity building of relevant partner organisations so that they have the resources and expertise to do their own monitoring of cryosphere, river discharge, and water resources management. This includes capacitating local communities in understanding the risks and taking responsibility for their own safety such as in managing early warning systems. It is working with national and sub-national governments, civil society organisations, academia and private sector to scale up and scale out gender and socially inclusive

springshed management following the “[six-step protocol for spring revival](#)” that it developed based on trials done at pilot sites.

Transboundary issues are of major concerns for the region, and as a neutral organisation, ICIMOD is trying to leverage this position in addressing transboundary hazards. For instance, while a glacial lake may be in one country, the risks that it poses in the form of GLOF and benefits from it by providing water for food production and energy generation extend across borders. Therefore, it is increasing its efforts to strengthen transboundary cooperation at all levels, and in all domains from conducting joint research and assessments to sharing knowledge and good practices.

ICIMOD is committed to sustainable management of water resources in the Hindu Kush Himalaya region under its Strategy 2030 and action plans. Efforts are made to promote water harvesting, river basin management, watershed modelling, and improvement of water use efficiency for irrigation and other purposes. It is engaged in actively seeking and promoting nature-based solutions for addressing the phenomenon of “too much or too little” water. Too much water involves coping measures to incessant rainfall events and floods, and too little water requires measures to address prolonged periods of draught and drying water sources.

## MR. TAKAYUKI HAGIWARA

FAO Representative in India,  
Food and Agriculture Organization (FAO)

**M**r. Takayuki Hagiwara is appointed as the FAO Representative in India effective since May 2023. He is a national of Japan, holds a Master of Science in Forestry from Yale University with a focus on Participatory Resources Management in the United States. During his career, Mr Hagiwara contributed to the preparation and implementation of various projects including those focused on community-based natural resources management and livelihood development, and helped JICA's adoption of the Farmer Field School platform in Kenya and Ethiopia. He also conducted numerous training sessions and authored a farmer field school implementation guide based on his practical experiences in the field.



One of his notable achievements was his role as the lead technical officer on the Sustainable Livelihood Development Project in Kenya's Mau Forest Complex, which received FAO's Edouard Saouma Award in 2013. In this capacity, he piloted a mobile phone-based monitoring system, established a partnership with a local bank and Kenya Forest Service Revolving Fund and facilitated community-based enterprise development with Rural Invest.

Mr Hagiwara has served as the Regional Programme Leader at the FAO Regional Office for Asia and the Pacific in Bangkok, Thailand from January 2021. In this role, he has supported the regional office to implement FAO's strategic framework and overseen the development and implementation of the programmes in the region, providing guidance to technical officers at the regional office and facilitate coordination with the FAO representatives in the region.

*Dr. Arvind Kumar, Editor, Focus Global Reporter conducted an interview with Mr. Takayuki Hagiwara, FAO Representative in India, Food and Agriculture Organization (FAO). Excerpts from the Interview are reproduced here.*

**EDITOR:** What are the key components of the global roadmap initiated by the Food and Agriculture Organization (FAO) to eliminate hunger and malnutrition while staying within the 1.5°C threshold of the Paris Agreement?

**MR. TAKAYUKI HAGIWARA:** In 2022, 738.9 million people faced hunger, nearly 2.4 billion in 2022 lacked regular access to adequate food, and over 3.1 billion could not afford healthy diets. The pandemic added 120 million to the number of chronically undernourished. In 2030, an estimated 590.3 million will suffer hunger. The planet faces crises; exceeding safe

limits on six of nine planetary boundaries, and much of them are due to agrifood systems, which contribute 30 percent of anthropogenic greenhouse gas (GHG) emissions and impede climate goals. Despite the Paris Agreement's aims, warming rates indicate a serious gap in meeting targets.

To address this, FAO's roadmap involves an extensive process that spans three years, which started in 2023 with COP 28. The roadmap commences with a global vision for what ails agrifood systems today. Part 2 of the roadmap moves further from a global to a regional view and from a vision to costing and financing options for the actions required, before culminating in a discussion of how to attract concrete investment and policy packages by the time COP 30 takes place. It also examines how to integrate technical assistance into our strategies while supporting sustainable investment plans. The trilogy of COPs encapsulates FAO's dedication to ushering in a transformative era in global agrifood systems, uniting nations in a shared narrative of progress and sustainability.

Furthermore, accelerated climate actions can transform agrifood systems and help achieve food and nutrition security. FAO calls for an integrated approach across 10 'domains of action' which include – livestock, enabling healthy diets for all, fisheries and aquaculture, soil and water, forests and wetlands, food loss and waste, crops, clean energy, data and inclusive policies. In addition, FAO Strategic Framework 2022-31 seeks to support the 2030 Agenda through the transformation to more efficient, inclusive, resilient and sustainable agrifood systems for better production, better nutrition, a better environment, and a better life, leaving no one behind. FAO also launched 20 Programme Priority Areas (PPA) using four cross-cutting/cross-sectional accelerators on technology, innovation, data, and complements (governance, human capital, and institutions) in all its programmatic interventions.

**EDITOR:** What are some specific strategies or interventions that have been effective in reducing food loss and waste, both at the production and consumption stages of the food chain?

**MR. TAKAYUKI HAGIWARA:** FAO estimates that – in terms of economic value - 14 percent of the world's food is lost from post-harvest up to, but not including, the retail level. In India, 4-6 percent of cereal and 5-12 percent of vegetables are being lost every year.



Source/Credit/Courtesy: FAO

Food loss is a recurring issue due to several causes stemming from different stages of the food supply chain and socio-economic factors. To address these issues and to ensure food security in

the country, mitigating the challenges along the supply chain is critical. FAO works closely with the government and relevant bodies to identify these challenges and find solutions.

In India, FAO calls upon the need to adopt the Food Loss Index (FLI) methodology and monitor losses throughout the supply chain from production to consumption. In collaboration with FAO, the Indian Council of Agricultural Research - Indian Agricultural Statistics Research Institute (ICAR-IASRI) has estimated the FLI for India. These estimates are based on the three national-level surveys conducted by the Ministry of Food Processing Industries to estimate the harvest and post-harvest losses of major crops and commodities in the country. In fact, India has been a torchbearer for the world as the only country that has established a robust system of regular surveys for monitoring food losses. These surveys conducted in India have provided the foundations for the development of the FLI methodology globally and for the technical support, FAO provides to countries across the world.

FAO draws attention to the critical need to measure post-harvest losses across the country. This approach aligns with achieving UN Sustainable Development Goal (SDG) 12, Target 12.3 which seeks to halve per-capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses, and SDG 2 – Zero Hunger.

Cold chains and proper storage, along with good handling practices, also play a crucial role in ensuring food safety and reducing food loss and waste; increased investment in this sector is also an essential part of the agrifood systems transformation. Under the Green Climate Fund (GCF) Readiness Programme, FAO is conducting an assessment of the barriers that hinder investments by both public and private sectors aimed at transforming India's agrifood systems. This project focuses on four Indian states: Chhattisgarh, Madhya Pradesh, Odisha, and Punjab. The assessment aims to develop critical recommendations of solutions to mobilize additional investments, particularly in cold chains and storage infrastructure, to reduce food loss across India.

Food loss also translates into loss and waste of water. Water is critical for not only agricultural purposes but also for the very sustenance of humankind. FAO is certain that reducing food loss will lead to reduced loss and waste of water thereby paving the way for food security and transforming agrifood systems in India.

**EDITOR: In what ways does FAO support smallholder farmers in India and strengthen the agrifood systems in the country?**

**MR. TAKAYUKI HAGIWARA:** Agriculture is an important sector of the Indian economy. It contributes about 16.5 percent to the country's overall gross domestic product (GDP) and employs nearly 42.3 percent of the country's workforce (2019/20). However, India's agrifood systems face several challenges such as managing the sustainability of agricultural practices in



light of climate change, enhancing the productivity of smallholder farmers, addressing issues of food safety and quality, improving post-harvest handling and storage, lack of equal distribution of water resources, reducing food waste and fostering inclusive growth in the agricultural sector.

Farmers, especially smallholders in India face significant hurdles in access to markets and credit. Limited access to modern technology, information and market linkages often isolates them from lucrative value chains resulting in low income and increased vulnerability to market fluctuations.

One of FAO's priority focus areas in India is to achieve sustainable and improved agricultural productivity and increased farm incomes, especially for smallholders. FAO's initiatives aim to improve climate resilient and sustainable agriculture and adoption of digital agriculture, enhance climate resilience of local landraces and seed systems, reduce the footprint of aquaculture for sustainability and climate resilience and enhance global health security through the One Health approach.

In India, FAO is implementing the Global Environment Facility (GEF) funded Green-Ag project across the states of Madhya Pradesh, Mizoram, Odisha, Rajasthan and Uttarakhand to mainstream biodiversity, climate change, and sustainable land management objectives and practices into the Indian agricultural sector. The project aims to catalyze transformative change for India's agricultural sector to support the achievement of national and global environmental benefits and conserve critical biodiversity and forest landscapes. Under GEF -7 Food Systems and Land Use Restoration project; FAO will develop integrated models of sustainable and healthy food systems in rice and wheat-dominated landscapes in India. Furthermore, FAO has a tripartite technical collaboration with the Government of Andhra Pradesh and ICAR to support farmers' transition to sustainable agrifood systems.

FAO also promotes innovation and the widespread adoption of digital technologies in agriculture to increase agricultural productivity and enhance farmers' incomes as well as enhance food security. FAO collaborated with the National Rain fed Area Authority and the Weather Risk Management Services Pvt. Ltd to develop and test forecasting/predictive techniques and tools using multiple data points and big data analysis to aid vulnerable farmers and planners in making informed decisions on crop choices, particularly in rain fed areas. Through these interventions, the project reduced the impact of the risk (weather, biological, market/price) faced by rainfed areas farmers in Andhra Pradesh, Himachal Pradesh, Karnataka and Maharashtra. By harnessing the power of digital agriculture, FAO aims to enhance food security, increase agricultural productivity, and support the livelihoods of Indian farmers, contributing to more resilient and efficient agrifood systems.

Sustainable water management is critical to address the food and nutrition security threats. Extreme weather events and variability in water availability are severely affecting agricultural production and changing agro-ecological. As a part of its overarching priority, FAO is embarking on a strategic endeavour to engage with India's blue economy, particularly focusing

on the fishery subsector. To this end, FAO is committed to working closely with the Government of Andhra Pradesh to facilitate the transformation of aquaculture practices within the region. This transformation will involve the development of innovative, sustainable, and climate-resilient approaches to aquaculture, which reduce its environmental footprint and enhance the sector's long-term prospects.

Currently, FAO is also collaborating with key government stakeholders to improve data collection that will aid in the development of interventions to improve the sustainability of agrifood systems and the use of water resources. This work will provide a harmonized indicator for tracking sustainable agriculture under the National Indicator Framework, and the Global Indicator Framework for SDGs. Additionally, FAO will foster policy dialogues to monitor water use by introducing digital technologies.

**EDITOR: How does FAO contribute to addressing food and nutrition security in India?**

**MR. TAKAYUKI HAGIWARA:** FAO assists the Government of India in strengthening food and nutrition security by strengthening institutional capacities, increasing technical knowledge and promoting long-term behavioural changes throughout the agrifood systems.

Nutritional issues in India are complex, necessitating multifaceted, multidisciplinary solutions. FAO targets relevant pathways for safe and healthy diets for nutritional security in India. This includes improving dietary diversity, empowering women, enforcing food safety standards, packaging and labelling, food safety awareness and nutrition education, and using information communication technology (ICT) and innovative nutrition communication methods. It will also seek to support relevant initiatives under the umbrella programme, Poshan 2.0, aimed at improving nutritional outcomes for especially vulnerable groups such as pregnant women, lactating mothers, infants and children. FAO aims to ensure that gender equality and social inclusion are mainstreamed into this strategy.

Unsafe food results in a vicious cycle of disease and starvation, harming the most vulnerable people. Food-borne diseases were estimated to cost the country 0.5 percent of GDP in 2011. Food contamination has an impact on the export of food commodities, particularly fresh and processed foods. In Andhra Pradesh, Gujarat, Madhya Pradesh and Rajasthan, FAO addresses sanitary and phytosanitary challenges in high-value chains such as spices, especially cumin, fennel, coriander and black pepper, to enable poor, rural households to improve food safety and quality. FAO's work also focuses on cross-cutting issues such as awareness of AMR, pest control, food safety, and certification, particularly in relation to good agricultural practices (GAP) and good hygiene practices (GHP) to achieve the overall objective of food and nutrition security in India.

FAO will assist the Government of India in strengthening regulatory systems for food safety – particularly clean and safe milk – by developing institutional frameworks for certification. Furthermore, efforts will be made to establish a roadmap and strategies for integration of non-bovine milk into the dairy economy. These interventions have the potential to improve food security and nutritional outcomes while simultaneously raising incomes of food producers.

Additionally, to address the challenges of food and nutrition security, the practical entry points and interventions in the agrifood system approach must consider the nutritional impact of agriculture policies and programmes. To this end, FAO will take a comprehensive capacity development approach to strengthen individual capacities, advocate at the organizational and policy level, and form partnerships with national and regional institutions to create an enabling environment in India’s agrifood system. The interventions at the household and farm level will encourage crop diversification and the growing of more millets and nutri-grains as well as fruits and vegetables to support the National Food Security Act’s nutritional security objectives. FAO will also work to improve the resilience of agrifood systems to mitigate food insecurity among disaster-affected communities and vulnerable populations.

**EDITOR:** How will integrated investment approaches address the multiple dimensions of sustainability in food and agriculture?

**MR. TAKAYUKI HAGIWARA:** Indian agriculture, primarily rain fed, is susceptible to extreme temperatures, droughts, floods, cyclones, and soil salinity. Climate mainstreaming into agrifood systems requires much larger investments and an integrated approach from global climate finance, domestic budgets, and the private sector.



Source/Credit/Courtesy: FAO

FAO recognizes the need for the identification of national priorities and policy platforms for financing climate-resilient agrifood systems through a variety of investments spanning equity, grants supported by bilateral and multilateral development finance institutions (DFIs), green and social bonds, and other guarantee or output-based financing through corporations, blended finance, venture capital firms, among others. It brings forth

key stakeholders to provide insights on several opportunities that can be leveraged through regional collaboration on climate-smart agrifood system initiatives and suggest probable arrangements to maximize resource consolidation, route catalytic findings and support large-scale climate advocacy campaigns.

In January 2024, FAO organized a first-of-its-kind national-level Investment Forum for Advancing Climate Resilient Agrifood Systems to develop an investment and partnership strategy focused on this area. The Investment Forum was organized in collaboration with the NITI Aayog and the Ministry of Agriculture and Farmers' Welfare, Government of India.

The two-day multi-stakeholder meet paved the way for discussions and deliberations among key stakeholders, and their perspectives on national priorities, investment opportunities, partnership, technical support and cooperation. The Forum facilitated discussions and deliberations on six key areas namely, (i) Climate resilient agriculture (experiences and pathways) (ii) Digital infrastructure and solutions (iii) Financing climate resilient agrifood systems (domestic and global) (iv) Climate resilient value chains (v) Production practices and inputs for climate resilience and (vi) Gender mainstreaming and social inclusion for climate resilience.

The meet brought together more than 200 attendees with senior representatives from the government, National Bank for Agriculture and Rural Development, ICAR, International Crops Research Institute for the Semi-Arid Tropics, National Institute of Agriculture Extension Management, World Bank, International Food Policy Research Institute, Delegation of the European Union, International Finance Cooperation, and UN agencies.

FAO intends to organize similar Investment Forums and facilitate discussion, engagement and collaboration with stakeholders such as the government, private sectors, farmers' organization and financial institutions on issues related to livestock, fisheries, aquaculture and one health approach in India.

## ARTICLE

# Every Drop Matters: Transforming Mine Water into Lifelines for Coal Communities

Shri B. P. PATI\*

### Introduction:

At the heart of India's energy scenario, coal is positioned to continue serving as the cornerstone of the nation's energy supply. Major players in the coal and lignite sector, including Coal India Limited (CIL), NLC India Limited (NLCIL), and Singareni Collieries Company Limited (SCCL), play a crucial role in driving coal production in India to meet increasing energy demand. These entities have set ambitious targets to boost coal production in the upcoming years. It is pleasing that these companies are very much responsive to their environmental sensitivities. Going beyond a singular focus on coal output, concerted efforts are being made to improve the social and environmental conditions in coal mining regions. Various sustainable and environment friendly measures are being adopted towards this end. Among these measures, the strategic utilization of mine water emerges as a pivotal approach, contributing significantly to the broader agenda of fostering social and environmental well-being in coal mining areas.

With the world's population soaring and rapid urbanization and industrialization on the rise, the pressure on available water resources has reached unprecedented levels. It is projected that by 2030, the world could face a 40% global water deficit if current trends continue. India, too, grapples with acute water stress, with per capita water availability dwindling at an alarming rate. To address this crisis, it is imperative to tap every possible resource of potable water.

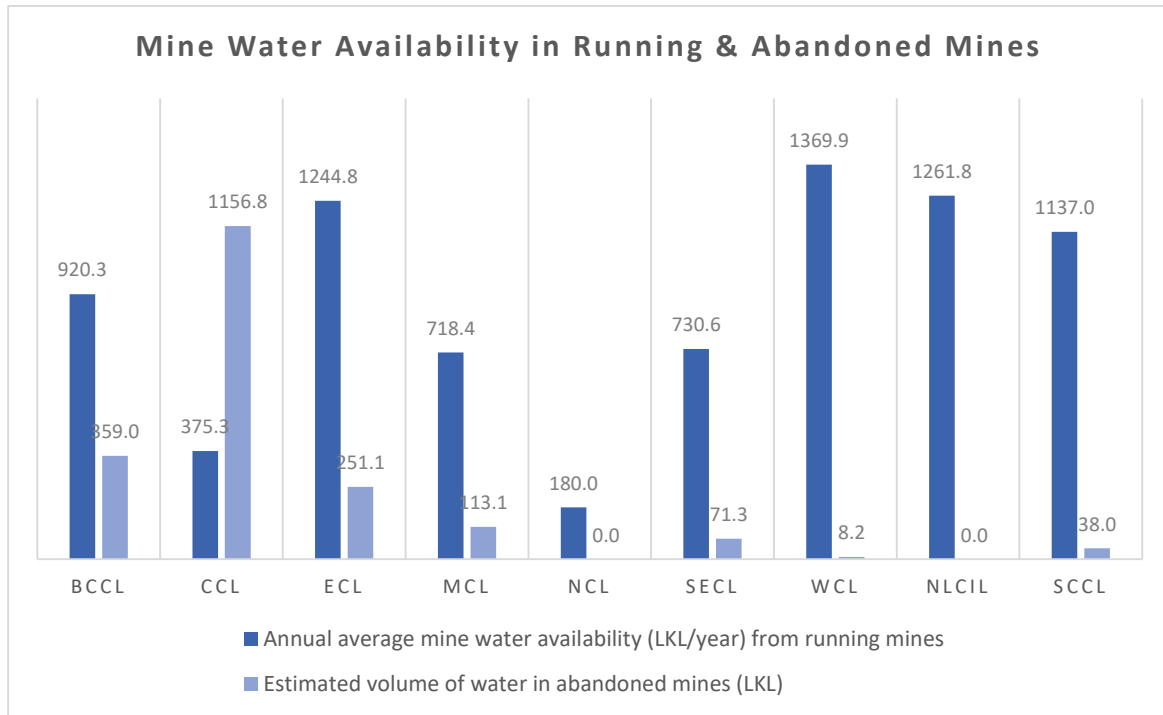
### Mine Water Utilization - A Sustainable Approach:

One promising avenue for water harnessing is the efficient utilization of mine water. In coal mining, large volumes of mine water accumulate in sumps, presenting an opportunity for gainful utilization. Coal/Lignite PSUs have spearheaded commendable efforts in leveraging mine water to alleviate water scarcity, aligning with the Jal Shakti Abhiyan for water conservation initiated by the Government of India.

### Sources of Mine Water and its Utilization:

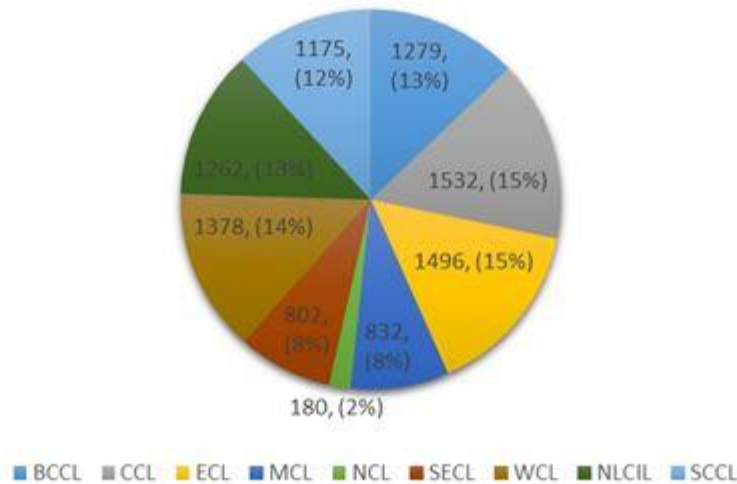
In the coal mining process, aquifers surrounding coal seams are exposed, leading to the accumulation of groundwater in mine sumps. To ensure the safety of mining operations, the gathered mine water is pumped to a separate surface sump. Additionally, the mined-out voids serve as reservoirs for strata seepage water and runoff from surrounding catchment areas, functioning as extensive water harvesting structures. According to the Status Report on Mine Water Utilization (2021) compiled by CMPDI, the yearly mine water available in 347

operational and 94 abandoned mine voids of Coal/Lignite PSUs amounts to approximately 1000 million cubic meters.

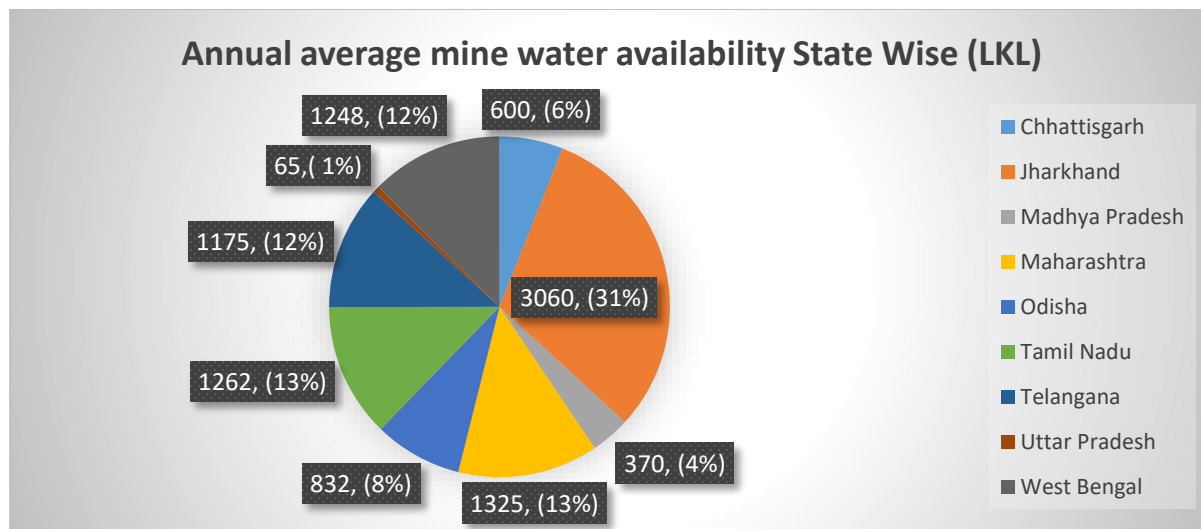


Source: CMPDI Report

### Annual average mine water availability Company wise (LKL)



Source: CMPDI Report



*Source: CMPDI Report*

### **Monitoring and Treatment of Mine Water:**

Mine water accumulation arises primarily from cutting aquifers in underground (UG) mines and cutting aquifers, along with rainwater runoff, in open-cast (OC) mines. Fortunately, the general quality of mine water in coal mines is suitable for domestic and irrigation purposes with minor treatment, such as sedimentation, filtration, and disinfection. Acid Mine Drainage is rare, and occurrences of trace elements or heavy metals beyond permissible limits are infrequent.

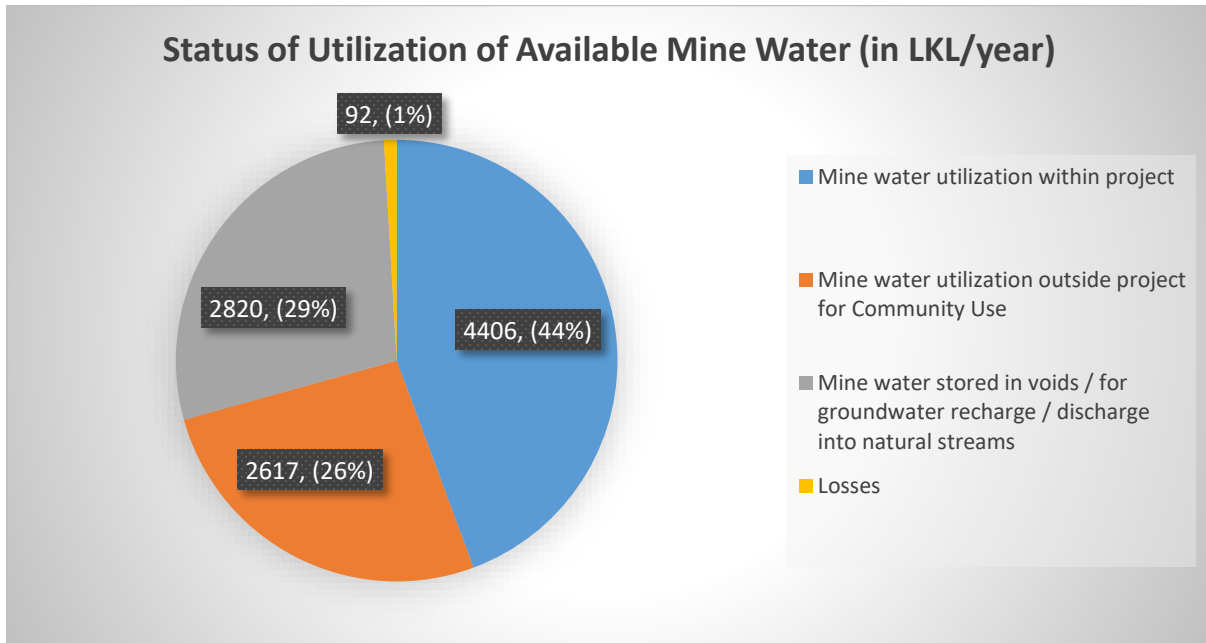
To ensure the quality of mine water, regular monitoring is conducted, focusing on parameters such as pH, Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Chemical Oxygen Demand (COD), Biochemical Oxygen Demand (BOD), and Oil & Grease. Coal companies adhere to the Central Pollution Control Board's (CPCB) standards, monitoring all 33 prescribed water quality parameters annually.

### **Diverse Applications of Mine Water:**

This collected mine water is typically devoid of pollutants and is utilized for various community purposes. Mine water, after passing through settling tanks, finds diverse applications:

- Industrial use for dust suppression, plantation, fire fighting, machinery washing, and sprinkling in UG workings.
- Domestic use in colonies and offices of coal projects after appropriate treatment.
- Community supply for domestic and irrigation purposes, both departmentally and through Memorandum of Understanding (MoU) routes with State Governments.
- Supply to other industries and municipal corporations.
- Creation of recreational areas, fish farming, and groundwater recharge.

- Water filled abandoned mine voids function as a water source for plant life, animals including wildlife.



*Source: CMPDI Report*





## **Status of Mine Water Utilization:**

Under the guidance of Ministry of Coal, volume of mine water supplied for community purposes has been around 16,012 LKL thereby benefitting annually more than 17.7 lakh people in 981 villages of 9 coal bearing states during FY 2018-19 to FY 2022-23. Volume of mine water supplied for irrigation purpose has been 10762 LKL & for domestic/ drinking purposes has been 5250 LKL.

Further, Coal/Lignite PSUs have entered into Memorandums of Understanding (MoUs) with their respective State Governments to provide mine water for community purposes. As per the MoUs, Mine Management is entrusted with delivering raw mine water to surface reservoirs, while the State Government takes on the responsibilities of filtration, operation, quality control, and distribution. The MoUs encompass both operational and abandoned mine voids, with identification of such sites and the formulation of Mine Water Utilization Schemes being carried out collaboratively by State agencies and coal companies. Examples of such collaborations include:

- An MoU between the Jharkhand Government and CIL focusing on utilizing mine water for villages in the command area of CCL, BCCL, and ECL.
- An MoU between the West Bengal Government and ECL aimed at using mine water for community irrigation.
- An MoU between WCL and MAHAGENCO designed to provide mine water to MAHAGENCO power plants near WCL mines.
- An MoU between WCL and Vidarbha Irrigation Development Corporation facilitating the supply of surplus mine water from WCL mines to VIDC.
- An MoU between the Chhattisgarh Government and SECL for the supply of mine water to PHED, Water Resource Department, and other government agencies.
- NLCIL supplying mine water to the Chennai Metro Water Supply Scheme by transporting mine water from Veeranam Lake to Chennai.
- In SCCL, excess mine water is discharged into nearby tanks for community use, including drinking and irrigation purposes.

As part of gainful utilization of Mine Water, the water-filled voids within the mines offer promising prospects for fish farming and water tourism, in addition to serving the needs of the local community. South Eastern Coalfields Ltd. has successfully repurposed its disused Quarry No. 6 at the Bishrampur opencast mine into a center for pisciculture and water sports. Located in Kenapara, approximately 350 km north of Raipur, the site features 32 cages dedicated to pisciculture and fish farming, along with amenities like a floating restaurant and boating facilities. Self-help groups have been established to oversee the pisciculture activities, providing a sustainable livelihood for the local tribal population. This initiative stands as an

environmentally friendly and economically viable means of income generation for the communities, yielding an annual fish harvest of around 800 quintals.



Pisciculture & Self Help Group maintaining and running of site at Bishrampur OC, SECL

A reverse osmosis (RO) filter plant has been constructed inside the premises of Ningah Colliery, Sripur Area in ECL. The filter plant has a capacity of 5000 litres/hour. The treated water is used for drinking purpose as well as for other domestic purpose.



R.O. Filter Plant (120 KLD) installed at Sripur Area, ECL

WCL's Coal NEER project is a significant initiative aimed at treating and bottling mine water from the Patansaongi UG mine in Nagpur District, Maharashtra. Aligned with the Jal Shakti Abhiyan for water conservation, the project treats accumulated mine water through sedimentation, slow sand filtration, RO processing, and UV treatment. The RO plant, operational since 2019 with a 10,000 LPH capacity, holds certifications for packaged drinking water. Branded as "COAL NEER," the water is sold commercially in WCL's jurisdiction and government offices. Priced at Rs 7/- per 500ml bottle and Rs 10/- per 01-litre bottle, profits support community service initiatives, providing pure drinking water to nearby villages. Collaborating with Self-Help Groups, WCL distributes water directly to villagers, benefiting areas like Patansaongi, Belori, Tadulwani, Babulkheda, Kavdas, Itangoti, Champa, Kusumbi, Sillori, Bramhapuri, Khangaon, Khodadongri, Veltur, and Beendala, impacting an estimated 1 lakh people.



“Coal NEER” Water Treatment Plant at Patansaongi UG, WCL

**Conclusion:**

Mine water utilization emerges as a beacon of hope in the face of impending water crises. The successful implementation of projects by Coal/Lignite PSUs not only addresses water scarcity but also sets a precedent for responsible water management. Every drop matter, and through innovative initiatives, the coal sector is contributing significantly to water conservation and sustainable development.

The Coal Sector's commitment to the meaningful utilization of mine water is in accordance with the National Water Mission and aligns with the Jal Shakti Abhiyan – Catch the Rain-2023 campaign, specifically focusing on "Source Sustainability for Drinking Water," launched by the Ministry of Jal Shakti.

**\*Joint Secretary, Ministry of Coal, GoI & Sh. Sunil Bhawaria, Manager, Coal India Limited**

## INTERVIEW

### MR. KAPIL NARULA, Ph.D

Senior Analyst Breakthrough Agenda,  
Climate Champions Team, Dubai, UAE.



**Mr. Kapil Narula, Ph.D.** is Senior Analyst, Breakthrough Agenda at the UN High Level Climate Champions Team where he works on catalysing international cooperation for ambitious climate action. He has over two decades of versatile work experience in international organisations, government, think tank and universities. He works on clean energy transition, climate change and maritime sustainability. He is the author/editor of seven books and more than 100 articles/papers. He has earlier worked as Economic Affairs Officer at the United Nations, Advisor (Energy) at NITI Aayog, lecturer at the University of Geneva and an officer in the Indian Navy. He holds an interdisciplinary PhD degree in economics, master's degree in engineering and has a certification in sustainability and climate risk.

*Dr. Arvind Kumar, Editor, Focus Global Reporter conducted an interview with **MR. KAPIL NARULA, Ph.D.**, Senior Analyst Breakthrough Agenda, Climate Champions Team, Dubai, UAE. Excerpts from the Interview are reproduced here.*

**EDITOR:** Energy markets are undergoing significant transformations, with trends like decentralization, digitalization, and electrification reshaping the landscape. What implications do these trends have for energy security and sustainability, particularly in emerging economies?

**MR. KAPIL NARULA, Ph.D.** The global energy landscape is evolving rapidly and an energy system transformation is already underway. In 2012, I formulated the concept of Sustainable Energy Security (SES) - defined as “the provisioning of uninterrupted energy services in an affordable, equitable, efficient and environmentally benign manner” and proposed that it should be the goal a developing country. Today we see that countries are embracing SES and energy policies are driven by the goal of energy affordability, equitable and just energy transition, energy efficiency, and minimizing GHG emissions. The five emerging trends - democratisation, decarbonisation, decentralisation, deregulation and digitization – of energy are enabling the global energy transition. The implications of the energy system transition are profound – from reshaping the international fossil fuel trade to significant geopolitical and economic power shifts. Today, emerging economies have a once in a lifetime opportunity to leapfrog from traditional

centralized energy system architecture to a decentralized, flexible, clean, and smart energy system to provide affordable and reliable energy services for their citizens.

**EDITOR:** As someone who has worked at the United Nations and advised the Government of India on energy matters, what do you see as the most pressing challenges in achieving sustainable energy access and security, especially in developing countries?

**MR. KAPIL NARULA, Ph.D.** The energy system is complex and requires expensive infrastructure which takes several years to build. Hence large-scale energy system transformation is challenging, particularly in the face of limited access to low-cost capital for developing countries. Secondly, the world is addicted to cheap energy sources and most often energy prices do not fully reflect the negative environmental externalities from energy use. Lastly, capitalistic economic systems favour privatization of profits and socialization of costs leading to increasing concentration of wealth. Hence, we observe rapidly increasing income inequality and inadequate progress on SDGs.

While challenges differ across countries, the three most pressing ones in achieving sustainable energy security are:

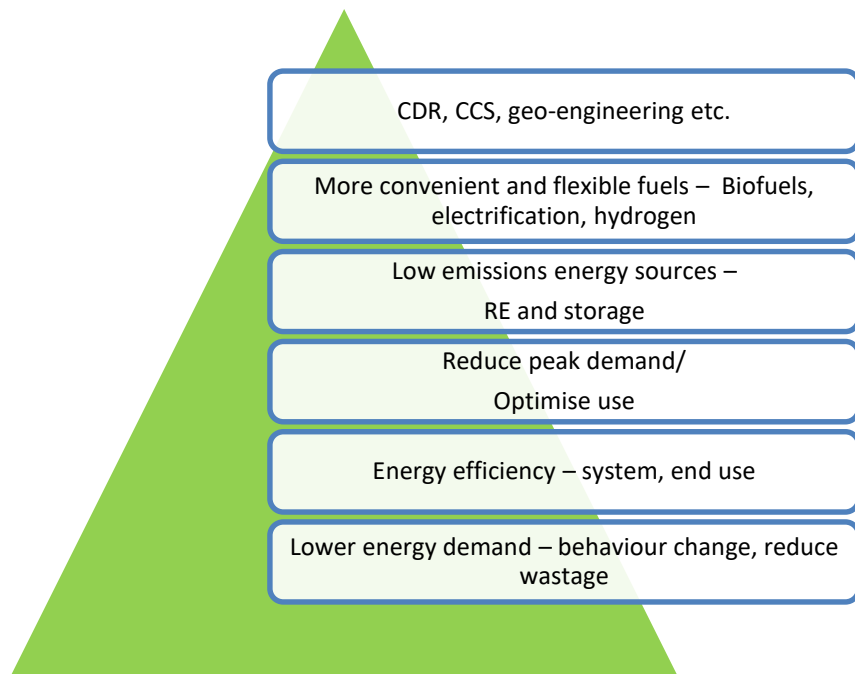
- Resistance to change
- Managing the vested interest of diverse stakeholders
- Influencing large scale behavioral change

Today, there is sufficient money, technological solutions and human capital to shift to a decarbonized global energy system. What is lacking is the political will to make the change.

**EDITOR:** As we strive to achieve the objectives of the Paris Agreement and decarbonize our energy systems, what role do you see for innovative technologies such as energy storage, carbon capture and storage/utilization (CCS/CCUS), and advanced nuclear reactors in enabling a sustainable energy future?

**MR. KAPIL NARULA, Ph.D.** We must remember that energy demand is the driver and the entire energy system including primary energy extraction, energy conversion, storage and distribution infrastructure is developed to meet this demand. I would like to share the energy action pyramid which shows the interventions which must be undertaken for large scale decarbonization. We need to start at the bottom of the pyramid by energy conservation and energy efficiency. In a conventional energy system 1 unit of electricity saved at the consumer end is 3 units of energy saved at producer end, due to inherent conversion and distribution losses. Energy system optimization and demand side management also avoids investment in new energy infrastructure. Low emission energy supply sources such as wind and solar coupled with storage technologies such as pumped hydro must be deployed after the above opportunities are

harvested. Electricity and hydrogen are energy carriers which provide flexibility but are not suitable for use in all applications. CCS/CCUS and CDR technologies should be the last resort as these are comparatively much more expensive than other options for decarbonization. Nuclear power including modular reactors is a viable option, but has inherent risks and its deployment is essentially a political decision.



**EDITOR:** Energy security is often intertwined with geopolitical dynamics and national interests. How do you assess the geopolitical implications of shifting energy paradigms, such as the rise of renewable energy and the transition away from fossil fuels?

**MR. KAPIL NARULA, Ph.D.** As I had mentioned earlier, the energy system transformation will lead to redistribution of geopolitical power. Oil importing countries such as those in the EU, China and India will eventually lower their dependence on energy imports and will emerge as winners as they gain more favorable trade balance. On the other hand, fossil fuel exporters countries in the Middle East and Russia will lose their global influence unless they diversify to other economic activities. There is already a growing risk of stranded fossil fuel assets which is reflected in Saudi Arabia's recent decision to abandon plans to increase its oil production capacity by 8 per cent to 13 million barrels a day by 2027. The signals of change can also be seen in the outcomes of COP 28, where a transition away from fossil fuels was endorsed by UAE Presidency – a fossil fuel exporter country. Shifting energy paradigms and the resulting climate policy is also determining domestic politics. This is evident from the widespread discontent and rebellion against the European Green Deal which is escalating across Europe.

**EDITOR:** Given your expertise in energy economics and policy, how do you assess the role of governments and international organizations in fostering the transition to a low-carbon economy? Are there any notable policy initiatives or frameworks that you believe have been particularly effective?

**MR. KAPIL NARULA, Ph.D.** Governments have the power to frame policies (incentives and penalties) and regulations which can become drivers of deep decarbonization. Mechanisms such as COP summits provide a framework for formal negotiations for a coordinated global response to climate change. These negotiations are based on political consensus (not a majority vote) which may lead to lack of ambition in the outcomes. Nevertheless, the intergovernmental process brings together all countries and provides a common ground for discussions. However, this process does not limit government's options to aggressively act against climate change. For example, Finland has set a legally binding net zero target for 2035 and Maldives is targeting 2030 to achieve net zero emissions subject to receiving adequate international support. The EU has also proposed a bold new target of 90% reduction in CO<sub>2</sub> emissions by 2040 compared to 1990. In terms of other frameworks, I would like to highlight the role of Climate Champions Team which complements UNFCCC efforts and the efforts of the national governments by connecting the work of nonparty stakeholders such as subnational governments, companies and businesses to deliver the goals of the Paris Agreement. These real economy actors can play a vital role by implementing decarbonization actions for real world impact.

**EDITOR:** Carbon pricing mechanisms, such as carbon taxes or emissions trading schemes, are often touted as essential tools for incentivizing emissions reductions and driving investments in low-carbon technologies. What are your views on the effectiveness and feasibility of carbon pricing policies, particularly in diverse economic contexts?

**MR. KAPIL NARULA, Ph.D.** Carbon pricing is an important tool to account for the environmental externalities caused by use of fossil fuels. Carbon taxes are administratively easier to implement and provide a source of revenue for the government. On the other hand, ETS provides incentives to participants and are economically efficient but setting the emissions cap is difficult and it has higher administrative costs. Both mechanisms increase the cost of goods and services and international competitiveness must be examined prior to their implementation. International trade of carbon credits must also be carefully examined before implementation as there is a risk of exporting low-cost carbon credits and being left with the higher marginal cost carbon credits at a later stage.

Each mechanism has its benefit and is suitable for a specific sector and country. Ideally a country with weak administrative and monitoring capacity should start with a low carbon tax to build political acceptability and then incorporate ETS progressively, starting with the industry sector.

Voluntary carbon markets are also expanding rapidly and can add to financing the transition to clean technologies.

**EDITOR: The concept of a circular economy is gaining traction as a means to reduce waste and promote sustainability. How do you see the emergence of this concept?**

**MR. KAPIL NARULA, Ph.D.** Per capita resource consumption was much lower half a century ago. With the trend of growing income, our resource consumption is increasing rapidly and so is our per capita waste production. Each year, a third of all food for human consumption in the world (1.3 billion tons) is lost or wasted. Fast fashion is taking its toll and the average number of times an item of clothing is worn has decreased by 36% in the last two decades with close to 100 million tons of clothes-related waste each year. Rising material extraction has actually shrunk global circularity: from 9.1% in 2018, to 7.2% in 2023, leaving a huge circularity gap. Circular economy approaches are gaining attention because they are being formalized and advertised, but on ground there is little action especially in emerging economies. Some good developments have taken place such as the French Food Waste Bill in 2016, which required supermarkets to sign contracts with charities to regularly distribute edible food products nearing their expiration date. This has allowed redistribution of about 50,000 tons of food every year to the needy and could serve as a good model for emerging economies.

**EDITOR: The concept of energy justice emphasizes equitable access to energy resources and benefits for all segments of society. How can policymakers and stakeholders ensure that energy transition efforts prioritize and address the needs of marginalized communities and vulnerable populations?**

**MR. KAPIL NARULA, Ph.D.** Equitable access to energy resources needs to be prioritized for weaker segments of the society. Low-income households spend a larger share of household expenditure on energy sources and inequality is also observed between rural and urban households. Targeted energy subsidy is one way to address this inequality. The redistribution of LPG subsidies from higher income households to BPL households is one such example. Another way is through adopting an appropriate electricity tariff structure where per unit cost increases significantly with the increase of electricity consumption. Introduction of higher road taxes for private diesel-powered cars and lowering the price of clean public transportation provides equitable mobility. Capital expenditure to improve electricity and clean cooking access for indigenous people, marginalized communities and vulnerable populations also bolsters energy justice.



**EDITOR: Energy transition pathways vary widely across different regions and countries due to factors like resource availability, policy frameworks, and technological capabilities. Can you share examples of successful energy transition initiatives from your experience, and what lessons can be drawn from these cases for other regions?**

**MR. KAPIL NARULA, Ph.D.** The fundamentals of energy transition are the same but the pathways are different for different countries. I will list two successful examples.

Today, Norway has the highest electric vehicle adoption rate in the world and 82% of new car sales were EVs in 2023. The next place was occupied by Iceland with 40% share and countries including China were far behind with 24% share. In 2017, Norway adopted a goal to phase out internal combustion engine vehicle sales by 2025. Government policies of free parking, permitting use of bus, no toll, zero taxes and free ferry travel for EVs since the last two decades have encouraged public to shift to EVs. There is an added advantage of lower running cost as over 98 percent of electricity production in Norway is through renewables.

Another example is the rapid rural electrification in India - a feat which was considered nearly impossible, a decade ago. Under the ambitious Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) launched on August 15, 2015, more than 18000 villages were electrified within 1000 days of the launch of the program. A budget of USD 11 Billion was allocated for this program and the entire government machinery was mobilized to achieve this mission.

The first lesson to be learnt is to have an ambitious goal. The second is to develop an ecosystem which supports the transition through public action. Lastly, rural electrification in India demonstrates that strong political will is necessary for rapid positive change.

## MR. JAIDEEP N. MALAVIYA,

Founder-Secretary General,  
Solar Thermal Federation of India

**J**aideep N. Malaviya a professional in solar energy since 1996 is Founder-Secretary General of Solar Thermal Federation of India and also Managing Director of Malaviya Solar Energy Consultancy and. He has over 25 years of experience in solar energy industry as a consultant, researcher, trainer and project developer. He has presented over 100 Indian and International Conferences. He was recently elected as Director of International Solar Energy Society, Germany. He last worked as a Research Scientist at Tata Energy Research Institute (TERI), New Delhi. He is also a Task Force member set up by government of India on Circular Economy in Solar Energy on policy issues by Ministry of New and Renewable Energy, Ministry of Environment and Forests and Climate Change and NITI Aayog. Recently he was recognized by the International Solar Energy Society amongst the 250 global pioneers in research and industrial development of solar energy.



He designs and develops projects in Solar Rooftop and Solar Thermal Systems by undertaking load analysis and optimising. He is also a faculty in several Engineering Colleges on the said subject. Under his leadership the Ministry of New and Renewable Energy operated the National Solar Energy Helpline for 9 years that addressed to over 10,00,000 phone calls. He was the India Project Head of “Solar Payback” that identified the potential industrial process heating applications using solar thermal and executed on behalf of German Solar Association.

His current focus is on developing cost effective solutions for Solar Heat for Industrial Process (SHIP) and safe recycling of Solar panels.

*Dr. Arvind Kumar, Editor, Focus Global Reporter conducted an interview with **MR. JAIDEEP N. MALVIYA**, Founder Secretary General, Solar Thermal Federation of India. Excerpts from the Interview are reproduced here.*

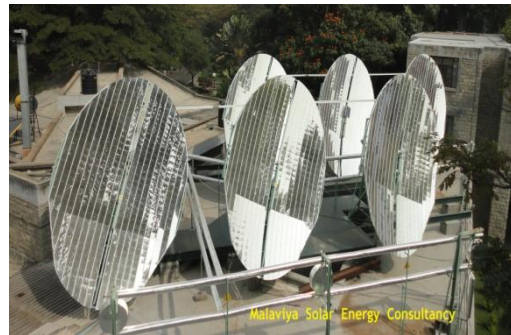
**EDITOR:** How does the Solar Thermal Federation of India prioritize sustainability in its advocacy efforts for solar thermal heating solutions?

**MR. MALVIYA:** Solar Thermal Federation of India was formed in 2010 under Societies Act as the voice of Solar thermal industry with the objective of addressing industry related issues largely on heating side. It is the think tank on policy matters and accelerating sustainable heating.

**EDITOR:** Considering the Solar Thermal Federation of India's expertise in advancing solar heat technologies, how do you assess the scope for solar heat integration within industrial processes?

**MR. MALVIYA:** Solar heating for low to medium temperatures has vast potential in India both for domestic water heating and Solar Heat for Industrial Process (SHIP). As a tradition hot water bath is customary in India and the present domestic Solar water heating potential identified is close to 200 million m<sup>2</sup> area. As industrial country there is vast heating demand for processes and for temperatures upto 150 deg.C close to 6 GW-thermal potential is identified.

**EDITOR:** Could you elaborate on any specific initiatives or collaborations aimed at encouraging industrial adoption of solar thermal solutions, and what potential benefits do you see for industries in transitioning towards renewable heating sources?



**MR. MALVIYA:** In a recently study ‘Solar payback’ ([www.solar-payback.com](http://www.solar-payback.com)) supported by Federal German government we identified six potential industrial sectors where Solar thermal heating can be adopted. i.e. dairy, food processing, brewery, pharmaceuticals, textiles, chemical and auto components processing. India is world’s largest dairy producer and almost 30% of overall production costs for dairy products in India are comprised of energy costs.

**EDITOR:** In your view, what is the scope for solar thermal w.r.t. ‘Atam nirbhar Bharat’?

**MR. MALVIYA:** As far as solar water heating is concerned evacuated tube collector is the dominant market and barring the vacuum tubes rest all is manufactured in India. Similarly, in the concentrated solar thermal the reflective glass mirror is the only import and rest is indigenously made. Considering the vast potential there is scope for the country to become complete ‘Aatamnirbhar’ in the entire value chain and if Production Linked Incentives are extended then even vacuum tubes and mirrors can be made in India.

**EDITOR:** What are your suggestions for the key policy makers to boost the use of solar heat in different sectors?

**MR. MALVIYA:** One significant feature of Solar thermal system is it is an energy saving device unlike Solar Photovoltaics that generates power. Each m<sup>2</sup> of Solar water heater collector (panel) saves electricity anywhere between 600 – 1,500 kWh (units) of electricity depending on geographic location and availability of solar radiation. Besides they also aid in peak demand reduction. For every 100 litres of solar heated water it substitutes 3 kW of electrical heater. Every 1 million installed system can save 3 GW peak power and mitigate 4 million tons CO<sub>2</sub> annually. The biggest beneficiaries are Electric Utilities; hence government must make Solar water heaters mandatory for households and bring it at par on policy as Rooftop Solar PV. A classical case study of Bengaluru Electric Supply Company (BESCOM), Bengaluru making mandatory use of Solar water heaters since 2009 with an average annual installation of 75,000 m<sup>2</sup> saving 90 million kWh(units).

<https://timesofindia.indiatimes.com/city/bengaluru/amid-surge-in-pv-solar-units-solar-water-heaters-lose-steam/articleshow/106242812.cms>

**EDITOR:** In what ways does the federation collaborate with stakeholders to encourage the adoption of eco-friendly heating alternatives across residential, commercial, and industrial sectors?

**MR. MALVIYA:** Solar thermal system is no more enjoying any incentives from Federal government and is self-sustaining market. The average solar water heater market is 1.25 million m<sup>2</sup> annually. Commercial and Industrial sectors find hard to adopt in absence of incentives though innovative technologies like heat pumps are coming to aid.



**EDITOR:** What are the challenges faced for concentrated solar thermal systems?

**MR. MALVIYA:** India has an advantage of receiving close to 300 days of sunlight in most parts of the country being a tropical country. Concentrating Solar collectors use mirrors and lenses to concentrate and focus sunlight onto a thermal receiver. This calls for precise tracking to convert the Direct Normal Incidence for maximum efficiency and faster payback. The challenge is to devise technologies to fulfill these criteria at affordable cost. Second challenge is to make curved mirrors that last for the life-time of a claimed solar thermal system.

**EDITOR:** Standardized product norms are a key aspect of the solar thermal industry. How do you believe these norms benefit both manufacturers and consumers?

**MR. MALVIYA:** Standards play crucial role to ensure quality. Bureau of Indian Standards (BIS) has developed standards for solar water heaters and select concentrating Solar thermal systems. There is however need for fiscal support for testing laboratories to make sure the installed systems fulfill BIS criteria to protect the consumers.

**EDITOR:** In what ways do standardized product norms contribute to quality assurance, market transparency, and consumer confidence in the solar thermal products available?

**MR. MALVIYA:** Quality Control is must to ensure sub-standard products are not used. As one-time capital is involved hence to protect the consumer there should be stringent guidelines to only use Quality components that fulfill BIS standards. This will also give assertion to the government to consider incentives for Solar thermal and scale up the market.

## DR. SANDEEP TRIPATHI

IEM, Central Vigilance Commission, Govt. of India,  
Rtd. PCCF & Head of Forest Force, Odisha

**A** Natural Resource Management Professional belonging to 1984 batch of IFS. He has multi disciplinary exposure in Geomatics & Information technology. Dr. Tripathi was a member of the Climate Change Subgroup of Government of India. He was part of Government of India delegation in the UNFCCC COP/MOP at Nairobi, 2006 and Bali, 2007, and is credited for development of the REDD + policy instrument. He is Member of the Steering Committee of Asia Flux network, Japan. He has done his Ph. D. in evaluation of CDM A&R Projects from FRI University, Dehradun in 2013.



Dr. Tripathi has contributed a lot towards Policy instruments, with enactment of first IT Policy & Biotechnology Policy, Odisha. He was a member of Kasturirangan Committee during 1990s mandated to develop the Data Policy. He is instrumental in development of “Odisha State Data Policy-2015” and establishment of OSDI in the line of NSDI, S&T Dept., Govt. of India. He is a member of the Expert Committee, 2015 constituted by Govt. of India for preparation of “National Geospatial Policy” of the country.

He has more than 60 research publications, primarily on Climate Change and application of Remote Sensing and GIS in forest management apart from 4 Books / Chapters to his credit. He is presently PCCF & HoFF, Odisha Forest Department since March’ 2019

*Ms. Shweta Tyagi, Associate Editor, Focus Global Reporter conducted an interview with Dr. Sandeep Tripathi, IEM, Central Vigilance Commission, Govt. of India, Rtd. Principal Chief Conservator of Forests & Head of Forest Force, Odisha, and Chief Technical Advisor - Environment & Forest, India Water Foundation. Excerpts from the Interview are reproduced here.*

**ASSOCIATE EDITOR:** You've had a significant role in the development of REDD+ policy instruments. Could you share some insights into the current progress and challenges faced in implementing REDD+ initiatives globally?

**DR. TRIPATHI:** The reducing emissions from deforestation and forest degradation (REDD) in developing countries, erstwhile “Avoided Deforestation”, “Compensated reduction”, and “Reducing Emission form Deforestation (RED), has been an active agenda in UNFCCC to achieve the climate change mitigation objectives.

The REDD+ issues were raised first time at greater length by Indian delegation of which I was a part in the UN Climate Change Conference in Nairobi (COP 12 in 2006) & Bali (COP 13 in 2007), where inclusion of conservation and increment of forest cover as a policy approach to reduce emission from deforestation was recognized & monetarily incentivized and given effect to in the Bali Action Plan as a Policy approach along with role of conservation, sustainable management of forests and collectively referred to as “REDD-plus”.

In India under the proposed REDD+ Pilot financial incentives through voluntary carbon markets are being provided to the forest dwelling communities involved in conservation of forests, duly certified by an accredited agency. Such a pilot project in the East Khasi Hills in Meghalaya is already being run jointly by a California-based non-profit organization, Community Forestry International (CFI) and the Mawphlang community (Meghalaya). They have been working together in the Umiyam basin watershed region to develop a REDD+ Project in East Khasi Hills District of Meghalaya.

However, the REDD mechanism has lost much of its significance due to scrapping of Kyoto Protocol. The UNFCCC Green Fund has not been able to supplement and finance REDD + on a significant rate and is mostly supported by voluntary markets which pay more importance to REDD than REDD + activities which is a big policy barrier and challenge.

There is scope and opportunity for integrating the REDD plus actions with JFM in the country. The concept of Joint Forest Management (JFM) helps in increasing the productivity of the degraded forests. Improving the stocking of poorly stocked forests also in turn increases their carbon stocks besides improving flow of goods like timber, fuelwood, and fodder etc. from such forests. All these community based activities and measures can be dovetailed into mitigation measures, with sizable potential for increasing the sequestration of carbon. However, for this purpose, methodologies and modalities for a procedural framework need to be worked out to ensure people's participation and sharing of the benefits accruing from REDD plus actions that are measurable, reportable and verifiable (MRVable).

**ASSOCIATE EDITOR:** With your background in geomatics and information technology, how do you see advancements in these fields shaping the future of natural resource management, particularly in the context of addressing climate change impacts?

**DR. TRIPATHI:** Natural resource management is critical to ensuring that our resources are effectively and sustainably managed. Geomatics technologies provide a platform through which managers can compile information and informative data to improve decision-making for sustainable development across the board. Geomatics inclusive of IT and remote sensing has huge scope in the mapping process of natural resources including Vegetation maps, Land cover maps, Soil maps, Geology maps and Shoreline erosion maps, etc. Geomatics enables spatial data collection & collation in the same location within intervals (years, seasons, days, hours) with Satellite data having high spectral, spatial, radiometric, and temporal resolutions. Another

important area is Natural Hazards and Risk Assessment to monitor possible risks and hazardous areas prone to flooding, landslides, forest fires, soil erosion, droughts, earthquakes, and more.

I have been in the forefront in development of digital methodology for biennial Forest over Mapping done by FSI, Dehradun as Deputy Director & Joint Director, FSI for publication of Indian State of Forest Reports and Eco-sensitive zone mapping in ORSAC (Odisha Remote Sensing Application Center), Odisha as Chief Executive for such NRM. Apart from that number of apps has been developed by us in ORSAC for identification of Forest lands, revenue lands, and mining areas for sustainable planning by the managers.

As our development wings spreads, and the climate change footprints enhances, it is critical to track changes due to impending climate change and to mitigate such risks through early planning and preparations. Geomatics can be effectively utilized to monitor land area changes between periods to improve decision-making and track changes in the environment due to climate and human impact. Geomatics is also valuable for monitoring deforestation assessment, urbanization, habitat fragmentation, salt marsh monitoring, and coastal shoreline erosion, etc. with informed decision-making. Geomatics is an essential tool for monitoring the growth and decline of natural resources in the environment and determines qualitative and quantitative data regarding environmental issues like land degradation, soil erosion, pollution, etc. and to help monitor ecological conditions in real-time.

The Geomatics can be also applied to develop forest& biodiversity management plans, Watershed Management decisions, and policy-making to ensure our natural resources are protected and utilised sustainably. Water management is an ongoing challenge, and geomatics helps monitor water bodies such as lakes, rivers, dams, and reservoirs mapped in 3D and monitored using GIS technology. Another area is to Combat Desertification wherein geomatics assists to determine soil types, nutrient availability, and the best land use practices within a particular area, and their impacts on the environment and whether desert-like conditions are approaching in the area.

**ASSOCIATE EDITOR:** Given your involvement in the UNFCCC COP/MOP meetings, particularly in Nairobi and Bali, what are your thoughts on the current state of international cooperation and progress towards mitigating climate change?

**DR. TRIPATHI:** In my view with a climate cataclysm looming, the pace and scale of current climate action cooperation is wholly insufficient to effectively tackle climate change. As per the IPCC, to limit global warming to 1.5°C above pre- industrial levels, emissions must already be decreasing and need to be cut by almost half by 2030, just six years away. Urgent and transformative actions are crucial, going beyond mere plans and promises. Time is running out, and immediate measures are necessary to avoid catastrophic consequences and secure a sustainable future for generations to come.



As per specifically Indian context, India approach the negotiations on the foundational principles of equity, and common but differentiated responsibilities and respective capabilities along with climate justice & historical responsibilities. India also emphasizes that all countries should have equitable access to the global carbon budget for keeping temperature increase within the limits set by the Paris Agreement. India has contributed only about 4% of the global cumulative greenhouse gas emissions between 1850 and 2019 despite being home to 17% of global population. Other important cooperation aspects for India are the transfer of climate finance and low-cost climate technologies for developing countries along with enhanced scale of climate finance by developed countries. India's commitment to huge emission intensity reduction of the economy is another important aspect. According to its current NDC , submitted in August 2022,



India will reduce the emissions intensity of its GDP by 45% (compared with 2005 levels), achieve 50% total installed electric power capacity from non-fossil fuel energy sources and focus on building momentum for its LiFE Movement (Lifestyle for Environment).

The just concluded COP28 summit, held in Dubai, Indian negotiators managed to get the final text of voluntary **“transitioning away from fossil fuels”**, which considering India huge dependence on coal for energy might be a win but big loss on a longer run for the globe. There has been some significant progress in the international cooperation is the operationalization of long awaited **“Loss and Damage Fund”** though with limited financial commitments for coping with devastation caused by extreme weather events such as drought, floods, and rising seas. The global community aims to triple renewable energy capacity by 2030 while doubling the average annual rate of energy efficiency improvements. The emphasis is on a just, and equitable transition from fossil fuels to achieve net-zero emissions by 2050. The recent COP28 has outlined a comprehensive approach to combating climate change by accelerating the adoption of renewables, nuclear power, carbon capture and utilization, storage technologies, and low-carbon hydrogen. Developed Countries have pledged commitments of worth \$3.5 billion to replenish the resources of the Green Climate Fund; and over \$150 million for the Least Developed Countries Fund (LDC). These are small but significant gains.

On a global context the international cooperation has so far obtained modest results. A recent study suggests that pledge and review mechanisms contained in the Paris Agreement have small effects on actual contributions towards emission reduction targets despite 28 Annual Climate Summits by the UN in past three decades. Apparently, the international cooperation has failed to ensure goals on mitigation of greenhouse gases, keeping global warming in check and desired actions on climate change adaptation. The overall cooperation status is dismal to say the least and totally insufficient to meet the Paris Agreement pledges. In this context when the next round of Nationally Determined Contributions – are due in 2025, the countries must seriously boost their actions and commitments.

**ASSOCIATE EDITOR:** Could you share your views on the importance of integrating indigenous knowledge and community participation in natural resource management initiatives, and how can these elements be effectively incorporated into policy frameworks?

**DR. TRIPATHI:** The indigenous knowledge (IK) has an important role in the sustainable management of natural resources. The potential disappearance of indigenous practices could have a negative effect primarily on local tribal communities. IK has an important role to play in the development process to preserve valuable skills and technologies among local communities.

IK is widely used in medicine and around 80% of world's population use traditional medicine for basic health care as per WHO estimates. Furthermore, the commercialization of traditional medicines is an important part of pharmaceutical research and development with world sales of herbal medicines market valued at US \$150 billion in 2022 and poised to grow to US \$ 438 billion by 2030.

Further, Food security is a basic concern of local communities. Natural resource dependence provides the livelihoods for a high proportion of the world's population. Since the 1992 Earth Summit in Rio, and culminating in the Stockholm Conference in 2022, there have been increasing concerns about climate change and the sustainability of the world's natural resources. As human activity is the major destructive force in nature, improving NRM primarily requires changing human behavior at grassroots level with involvement of local communities. The Joint Forest Management (JFM) is an important policy instrument in this regard with around 15 million ha. Forest land under JFM with community involvement.

There is an urgent need to develop adequate frameworks for dealing with indigenous knowledge with proper benefit sharing mechanisms and complex issues of IPR embedded in appropriate policy framework which existing policy apparatus have failed to.

**ASSOCIATE EDITOR:** Given the urgent need to address deforestation and forest degradation, how do you propose scaling up efforts to mobilize resources and support from both public and private sectors to achieve SDG 15 (Life on Land)?

**DR. TRIPATHI:** Human life is hugely dependent on the land with almost 1.6 billion humans depend on forests to survive, and another 2.6 billion humans on agriculture. Forests are home to 80% of all terrestrial species of animals, plants, and insects. Plantlife impacts almost 80% of the human diet, and is a crucial resource. Forests cover 30% of the Earth's surface, provide vital habitats for a huge number of animal species, while also being sources of fresh air and water beyond the positive impact they have on climate change.

However, life on land is seriously in peril with 13 million hectares annual loss of forests and land degradation leading to the desertification of 3.6 billion hectares. More than 25% of the species recorded on the IUCN Red List are close to extinction.

Considering these dire circumstances it is imperative to scale up efforts to mobilize resources and support from both public and private sectors to achieve the objectives of SDG 15. There is an urgent need to mobilize financial resources to finance sustainable forest management both by Government & Private Companies under CSR. The REDD + mechanism needs to be made more effective by augmenting REDD+ cell at MoEF&CC, New Delhi to access positive and appropriate incentives by India for mitigation of deforestation & Forest degradation along with conservation of ecosystems and reforestation. Apart from that the adaptation & mitigation actions need to be planned & implemented with appropriate financial to mitigate impacts on land ecosystems and natural resources with best practices for land use planning and management.

Forest Certification mechanism needs to be implemented in a big way by MoEF&CC to expand markets for responsible forest products and thereby support sustainable forest management. The forestry research institutions like ICFRE should focus on research in product and technology innovation to optimize resource efficiency reduce impacts on ecosystems and lower carbon emissions.

**ASSOCIATE EDITOR:** Odisha boasts a remarkable diversity of wildlife, distinct from other regions in the country. Could you provide insights into how Odisha's wildlife differs from that of other states, in your opinion? Additionally, how does the Odisha Forest Department strategize to conserve and manage this unique wildlife diversity effectively?

**DR. TRIPATHI:** Odisha state has flourishing wildlife. The diverse topography of the state serves a natural abode for many distinctive varieties of wildlife and exhibits a high degree of endemism because of these distinct topographic features. The Eastern Ghats, the Central Uplands, the Chotanagpur plateau, the plains and coastal areas support many different ecosystems. The State has three National Parks and 18 Wildlife Sanctuaries harboring rich flora & fauna. Chilika, the largest brackish water lake of Asia, a Ramsar Wetland site, is home to thousands of unique birds along with magnificent Irrawaddy dolphins.



One of the most distinctive wildlife species of Odisha is Olive Ridley Turtles which nests on the Gahirmatha beach bordering Bhitarkanika Sanctuary, a World Heritage Site for being the nesting ground of almost half of the world population of Olive Ridley Turtles. Bhitarkanika is also home to almost 70% of country's rare & endangered Salt water crocodiles. The Simlipal forests are home to world's only natural population of melanistic 'black tiger', with beautiful dense and dark stripe pattern, a genetic variant of Royal Bengal Tiger.

The State has taken no of significant actions to support the cause of Forest & wildlife like implementation of JFM, introducing Ecotourism with involvement of local communities and

huge investment in plantation and allied activities. In fact, the Forest cover has been consistently & largely increasing in Odisha since last two decades as per the ISFR.

**ASSOCIATE EDITOR:** Could you share any initiatives or partnerships that the Odisha Forest Department is involved in to support the implementation of SDG targets related to land conservation, ecosystem restoration, or sustainable livelihoods for forest-dependent communities?

**DR. TRIPATHI:** Along with sustainable management of forests, implementation of Odisha Forestry Sector Development Society (OFSDS), supported by JICA, is an important intervention by the Odisha Forest Department to support the implementation of SDG targets related to land conservation, ecosystem restoration, and sustainable livelihoods for forest-dependent communities

The project implementation period is from 2017–18 to 2026-27. The aim of the project is to enhance the forest eco-systems and the livelihood of the forest dependent communities residing in project villages. The project cost is Rs. 1000.30 crores. The project is being implemented in 14 Forest Divisions, falling in 10 Revenue Districts of the State, through 1200 joint forest management committees (JFMCs) designated as Vana Surakhsya Samities (VSSs).

It is envisaged to cover 57,000 ha under plantations (51000 Ha under ANR and 6000 Ha under AR) under the OFSDP-II, which will lead 15% reduction in degraded forest area in the target VSS and enhancement of house hold income by 15% in the project area. Further Farm Forestry over 10,000 Ha lands is also envisaged covering famers. The project envisage to organise 3600 women Self-Help Groups (SHGs) for enhancing their income through different income generating activities with development of Micro Plan as a community development plan through strengthening of convergence. The Project also envisages enhanced support for cluster business development and partnership ecosystem through Livelihood Resource Centre, and gender mainstreaming.

The unique and core strength of this important initiative is creating of Models for Community-Based Monitoring, Reporting, and Verification (CMRV) System for Sustainable Forest Management.

## ACTIVITIES OF INDIA WATER FOUNDATION GLOBAL INPERSON

### **55th session of the UNHRC in Geneva on behalf of like-minded organizations during the interactive dialogue on the Report of the Special Rapporteur of Human Right to food on 7 March 2024**



India is one of the very few countries which not only strengthens food security for its own people with a very strong public food distribution system but also for its neighbouring countries and countries of the global south when needed", said Dr. Arvind Kumar at the 55th session of the UNHRC in Geneva on behalf of like-minded organizations during the interactive dialogue on the Report of the Special Rapporteur of Human Right to food on 7 March 2024

### **55th session of the UN HRC in Geneva during the interactive dialogue on the Report of the Special Rapporteur of Human Right on climate change on 13<sup>th</sup> March 2024.**

"India, despite being home to more than 17% of the global population, has contributed less than 4% of the global cumulative CO2 emissions" was highlighted by Dr. Arvind Kumar, President, India Water Foundation at the 55th session of the UN Human Rights Council in Geneva in his oral statement during the interactive dialogue on the Report of the Special Rapporteur of Human Right on climate change on 13th March 2024. During the interactive dialogue on the Report of the Special Rapporteur of Human Right to food on 7th March 2024 he emphasized that India is one of the very few countries which not only strengthens food security for its own people with a very strong public food distribution system but also for its neighbouring countries and countries of the global south when needed.



## **Safeguarding human right of Water and Sanitation in India amidst climate Emergency**

India has made commendable progress in the field of sanitation and water since the launch of the Swachh Bharat Mission (SBM) and the Jal Jeevan Mission (JJM) programmes currently, 62% of households in rural India have tap water connections, 40% rural households have declared themselves Open Defecation Free Plus. This leads to strengthening of public health systems, maintenance of cultural and ecosystem diversity, prevention of migration of ethnic communities, and sustainable sources of water leading to equity and equitable access" said Dr. Arvind Kumar at the official side event on Safeguarding human right of Water and Sanitation in India amidst climate Emergency" of 54th session of UN Human Rights Council organised by India Water Foundation. The event was organised in hybrid mode and was joined by more than 400 participants worldwide. The eminent speakers in the event were Dr. Satya Tripathi, Secretary General, Global Alliance for Sustainable Planet, Ms. Karin Gardes, Acting Executive Director & COO, Stockholm International Water Institute, Mr. Atul Bagai, Head, UNEP India Office, Mr. Rajan S Ratna, Deputy Head and Senior Economic Affairs Officer, United Nations ESCAP SSWA Office, Ms. Sonja Koeppel, Co-secretary, Protocol on Water and Health and Secretary of the Water Convention, UNECE, Mr. Vishwaranjan Sinha, Programme Officer, Water and Wetlands-South Asia, IUCN. The event was moderated by Shweta Tyagi, Chief Functionary, India Water Foundation. We are grateful to all the speakers for sharing their concise and insightful perspectives and the UNHRC for giving us the privilege to host this important session on Human Rights in India.



## **At the 54th session of the UN Human Rights Council Meeting on Interactive dialogue with the Independent Expert on the promotion of a democratic and equitable international order**

At the 54th session of the UN Human Rights Council Meeting on Interactive dialogue with the Independent Expert on the promotion of a democratic and equitable international order Dr. Arvind Kumar, President, India Water Foundation highlighted the responsibility of Global North as a historical polluter. He further stressed that the recent global developments, such as Covid pandemic, triple planetary crisis, mounting debt, challenges of food and energy security etc. have severely impacted the Global South. As a development sector organization IWF has been vocal about the energy transition from fossil fuels to renewables and India is the forerunner in global

and sustainable energy transitions. At various climate Summits, India resisted the onslaught from the Global North and protected the interest of the Global South be it on the question of climate financing, limiting the emission norms, or highlighting the Global North's responsibility as the historical polluter. As a responsible neighbour not just most of its neighbours but also Africa and other countries of the global south received vaccines from India considering the whole world as one family or Vasudhaiv Kutumbkam.



## Working Group Meeting at the 54th session of UN Human Rights Council

India Water Foundation's representative from Kashmir Ms. Tasleema Akhter during the Interactive dialogue with the Working Group on the use of mercenaries as a means of violating human rights and impeding the exercise of the right of peoples to self-determination at the 54th session of UN Human Rights Council highlighted how as a social activist she has been exploring the cases of untold stories of atrocities committed on the innocent victims of terrorism in the Valley and have witnessed violence and killings of innocent persons by Pakistan sponsored terrorism. She appealed to the UN Human Rights Council to take appropriate action against the perpetrators of such inhuman acts so that the people of Kashmir can live happily and peacefully thereafter.



## Side event on Linguistic Minorities and Human Rights in India organised by Sindhi Adhikar Manch at the 54th session of UN Human Rights Council

"There is hardly any doubt that India's North East Region is full of potential, not just for economic growth but also for cultural exchange and in the past decade the development has changed the face of the region and brought the states from periphery to mainstream. If we speak especially for Manipur then there is a systematic anti-India disinformation Campaign going on where bots from across the border have tweeted extensively, giving a religious angle to the Manipur incident" said Dr. Arvind Kumar at the side event on Linguistic Minorities and Human Rights in India organised by Sindhi Adhikar Manch on 25th September 2023 at the 54th session of UN Human Rights Council at Geneva, Switzerland.



## Side event organised by Rajasthan Samagra Kalyan Sansthan on at the 54th session of UNHRC in Geneva

India is one such country where development policies and programmes have been made specifically keeping gender equity and inclusion in mind. Whether it is the Ujjawala yojna, the swachh bhara mission, the Jal Jivan Mission or several other programmes, the prime beneficiaries are women.



The development is women led and for women, We should highlight this at every platform that India just not talk the talk but deliver also." said Shweta Tyagi, Chief Functionary, India Water Foundation and Associate Editor Focus Global Reporter as a panelist in the side event organised by Rajasthan Samagra Kalyan Sansthan on 25/09/2023 at the 54th session of UN Human Rights

Council in Geneva, Switzerland. She also highlighted that in the G20 Delhi Declaration a resolution has been passed to create a new Working Group on Empowerment of Women to support countries as they continue to address gender inequality across the spectrum.



# Multi-Stakeholder Policy Dialogue on 'Water Transversality & Climate Risk: Adaptation, Mitigation & Resilience Building'

"The Water Transversality approach highlights the interdependence of water, energy and food security with ecosystems – water, soil, and land – that underpin that security. This approach identifies mutually beneficial responses that are based on understanding the synergies of water and related sector policies" said Dr. Arvind Kumar during the Multi-Stakeholder Policy Dialogue on 'Water Transversality & Climate Risk: Adaptation, Mitigation & Resilience Building' organised by India Water Foundation

in collaboration with Global Alliance for a Sustainable Planet at the Global Alliance for a Sustainable Planet Pavilion in Thematic Arena 2 in the Blue Zone on 5th December 2023. The other speakers in the event were Dr. David Cooper, Acting Executive Secretary, Convention of Biological Diversity, Dr. Satya Tripathi, Secretary General, Global Alliance for a Sustainable Planet, Mr. Eric Tardieu, Vice President, World Water Council, Dr. Eddy Moors, Rector, IHE Delft Institute of Water Education, Mr. Thomas Rebermark, Director - Swedish Water House-International Processes, Stockholm International Institute of Water, Mr. Anthony Mhagama, Manager of the SUSTAIN II Programme, IUCN, Mr. Hitesh Vaidya, Chief Technical Advisor, IWF. The event was moderated by Ms. Shweta Tyagi, Chief Functionary, India Water Foundation. The event highlighted the benefits and co-benefits of water and water ecosystem



management would allow for more targeted climate finance and raise awareness for the role of water for climate mitigation and adaptation as well as resilience building event was moderated by Ms. Shweta Tyagi, Chief Functionary, India Water Foundation.



## COP28 (1st December 2023)

India Water Foundation in collaboration with Open Dialogues International Foundation, REScoop, Saving Our Planet, International Climate Development Initiative and Femmes Bladi organized an official side event titled 'Change through Participation: Open Dialogues as a tool for empowering climate action' of UNFCCC COP28 at Blue Zone in Dubai on 1st December 2023. The speakers in the event were Dr. Arvind Kumar, President, India Water Foundation, Ms. Chiara Martinelli from CAN Europe, Mr. Stephan Savarese from Saving Our Planet and Ms. Chia Chun Angela Liang.

## GLOBAL ONLINE

### High level policy dialogue on "Stewardship for achieving Water Partnerships for Peace by Transversality Systemic Approach"

International water law has developed principles and norms that provide the basis for transboundary water cooperation, which can avoid conflict and contribute to stability and peace. Unfortunately, only 32 out of the 153 countries sharing transboundary waters have at least 90% of their transboundary basin area covered by an operational arrangement for water cooperation" said Dr. Arvind Kumar, President, India



Water Foundation during the high level policy dialogue on "Stewardship for achieving Water Partnerships for Peace by Transversality Systemic Approach" organized by India Water Foundation and supported by Ministry of Jalshakti, Government of India and Un ESCAP organized on 28<sup>th</sup> March 2024 to commemorate the 16<sup>th</sup> foundation day of India Water Foundation and the WorldWater Day 2024. The event was chaired by Dr. Armida Salsiah Alisjahbana UN Under Secretary General and Executive Secretary United Nations ESCAP and other speakers in the event were Mr. Eric Tardieu, Vice President, World Water Council, Dr. Eddy Moors, Rector, IHE Delft Institute of Water Education, Ms. Dani Gaillard Picher, International Policy Advisor, Swedish Water House-, Stockholm International Institute of Water, Dr. Rajan Ratna, Deputy Head and Senior Economic Affairs Officer, South and South West Asia Office of United Nations ESCAP, Mr. Atul Bagai, Head UNEP India Office. The event was moderated by Ms. Shweta Tyagi, Chief Functionary of India Water Foundation. The event highlighted the benefits and co-benefits of linkage of water and related sectors and how water is not only a resource to be used and competed over – it is a human right, intrinsic to every aspect of life and should be transformed into a tool for peace building. To watch the complete recording of the event please go to <https://youtu.be/3xhHrJ7f2zs>

# Managing Ecosystems for Multiple Benefits via EbA for Climate Adaptation and Resilience

**E**bA takes into account the transversality approach of water and emphasizes water as a socio economic connector and indicator that interlinks sectors like agriculture, energy, biodiversity through actor sector synergy and inter-sectoral convergence” said Dr. Arvind Kumar during an official side event of 11<sup>th</sup> Asia-Pacific Forum for Sustainable Development on Managing Ecosystems For Multiple Benefits Via EbA For Climate



Adaptation And Resilience organized by India Water Foundation on 22 February, 2024. Other speakers in the event were Ms. Hitomi Rankiney, Chief Environment and development Policy Section, UNESCAP, Dr. Amani Alfarra, Program Manager - Water & Natural Resource Management, FAO Rome, Dr. M V Ramana Murthy, Advisor & Programme Head, Deep Ocean Mission, Ministry of Earth Sciences, Dr. Sudipta Chatterjee, Associate Director- Programs, India, TNC, Ms. Temina Lalani Shariff, Regional Director South Asia, CGIAR, Mr. Kazuya Suzuki, Chief Representative, JICA Thailand Office, Ms. Srabani Roy, Strategic Group Leader, ICIMOD and Mr. Jaidev Joshi, Senior Programme Officer Water Wetlands & NBS, IUCN Asia. The event was moderated by Ms. Shweta Tyagi, Chief Functionary, India Water Foundation. This session delves on interaction between climate changes and how it impacts various ecosystems and explores novel perspectives on how ecosystems respond to climate change, how ecosystem resilience can be enhanced and how ecosystems can assist in addressing the challenge of a changing climate.

# High level policy dialogue on 'Deciphering Nexus of Poverty Eradication, Food Security and Climate Change through Multi-stakeholder Partnerships'

**W**e have to harvest the opportunities that the agriculture and food systems offer to lift people out of poverty and the future must be built on bottom-up systems-thinking approaches" said Dr. Arvind Kumar, President India Water Foundation during the high level policy dialogue on 'Deciphering Nexus of Poverty Eradication, Food Security and Climate Change through Multi-stakeholder Partnerships' as an official side event of the



UNECOSOC Partnership Forum 2024 organised by India Water Foundation and supported by Global Alliance for a Sustainable Planet on 30th January 2024. The event was chaired by Sh. Gajendra Singh Shekhawat, Minister of Jalshakti, Government of India, Co-Chaired by Ms. Lin Yang, Deputy Executive Secretary, United Nations ESCAP. Other speakers in the event were Ms. Susan C Gardner, Ph.D. Director, Ecosystems Division, UN Environment Programme, Mr. Shombi Sharp, UN Resident Coordinator India, Mr. Satya S. Tripathi Secretary General, Global Alliance for a Sustainable Planet, Ms. Danielle Gaillard-Picher, International Policy Advisor, Swedish Water House, SIWI - Stockholm International Water Institute and Mr. Sanjeev Bhuchar, Senior Watershed Management Specialist, ICIMOD. The event was moderated by Ms. Shweta Tyagi, Chief Functionary, India Water Foundation. The event delved on the nexus of poverty (SDG1), food insecurity (SDG2) and climate change (SDG13) and how partnerships (SDG17) can find solutions on several bottlenecks impeding greater progress. To watch the complete recording of the event please go to

## NATIONAL INPERSON

### International Water Conclave, Shillong Meghalaya

"A flexible legal framework, such as an agreement, enhancing institutional capacity can support the development and implementation of adaptation strategies and measures" highlighted Dr. Arvind Kumar in his presentation titled Deciphering Nexus of Water, Climate and Disasters: From Geo-Politics to Geo-Economics in the session Water and Climate Change at the International Water Conclave Shillong being held in Shillong, Meghalaya from 9-10<sup>th</sup> February 2024. The event was inaugurated by the Hon'ble CM of Meghalaya Sh. Conrad K Sangma. Also present during the inauguration was Ms. Debashree Mukherjee, Secretary, Ministry of Jalshakti, Government of India and Chief Secretary of Meghalaya Sh. D K Wahlang. The two day conclave has set the tone on how states, regions and countries can come together through dialogue and knowledge sharing to address the issue of climate change focusing on the water crisis in the world and to discuss the action steps that can be initiated to this end. I am sure that this first step will create a bigger impact for concerted action.



### India Energy Week 2024

"Energy security due to renewable energy will make energy cheaper further leading to savings and cost cutting. Land restoration, energy transition and carbon markets provide new economic opportunities and income streams" highlighted Dr. Arvind Kumar in his presentation on 'Deciphering inter-linkage of biodiversity loss and climate change : Achieving net zero via decarbonization in India' in the session Energy Transition, Decarbonization & Environmental Sustainability at the India Energy Week 2024 which was held in Goa from 5-10<sup>th</sup> February 2024. The event inaugurated by Prime Minister Modiji was a truly global gathering, convening policymakers, business leaders and energy pioneers to collaborate, discover new opportunities and strengthen partnerships and had around 35,000 attendees, 350 exhibitors, 400 speakers and 4,000+ delegates, from over 100 countries. A special thanks to the officials and staff of INS Mandovi Naval Officers Mess for making his stay comfortable and relaxing amidst the hustle bustle of India Energy Week.



## REPORTS

### 55<sup>th</sup> session of the UN HRC Meetings, Geneva

The Human Rights Council is an intergovernmental body within the United Nations system responsible for strengthening the promotion and protection of human rights around the globe and for addressing situations of human rights violations and making recommendations on them. It has the ability to discuss all thematic human rights issues and situations that require its attention throughout the year. It is the world's peak multilateral human rights body comprised of 47 Member States and meets at least three times per year in Geneva. It is mandated to strengthen the global promotion and protection of human rights, and to address human rights violations and situations of concern.

The 55th session of the UN Human Rights Commission convened in Geneva, Switzerland from 26th February 2024 to 5th April 2024. There were various mandates under discussion from minorities' issues, disabilities issue, child rights, climate change, clean and safe environment etc.

#### **India Water Foundation at the 55th session of UN HRC**

India water Foundation participated in the 55th session of the UN HRC with full force submitting written and oral statements-

#### **Written statements- The written statements were submitted in interactive dialogues like-**

1. Protecting Human Rights in India in the Changing Climate Protecting Human Rights in India in the Changing Climate.
2. The essentials of housing for the vulnerable and poor in India
3. Feeding the poor and vulnerable in India
4. Attaining healthy environment by Clean Water and proper Sanitation

#### **Oral Statements-**

1. Item 3: General debate on the promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development
2. Item 4: General debate on human rights situations that require the Council's attention, report by the High Commissioner on DPRK
3. Item 3: Interactive dialogue on the report of the High Commissioner on climate change

4. Item 3: Interactive dialogue with the Special Rapporteur on adequate housing as a component of the right to an adequate standard of living, and on the right to non-discrimination in this context
5. Item 3: Interactive dialogue with the Special Rapporteur on the right to food
6. Item 3: Interactive dialogue with the Special Rapporteur on minority issues
7. Panel discussion on challenges and good practices to realize the right to social security and to provide quality public services



## Media Coverage Links

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27. <https://smeworld.asia/55th-session-of-the-un-human-rights-council-in-geneva>

## 54<sup>th</sup> Session of United Nations Human Rights Council

**T**he Human Rights Council is an intergovernmental body within the United Nations system responsible for strengthening the promotion and protection of human rights around the globe and for addressing situations of human rights violations and making recommendations on them. It has the ability to discuss all thematic human rights issues and situations that require its attention throughout the year. It is the world's peak multilateral human rights body comprised of 47 Member States and meets at least three times per year in Geneva. It is mandated to strengthen the global promotion and protection of human rights, and to address human rights violations and situations of concern.

The fifty-fourth session of the United Nations Human Rights Council is being held in Geneva, Switzerland at Palais des Nations since 11<sup>th</sup> September- 13<sup>th</sup> October 2023. The various mandates under discussion during this session are- (a) the mandate of Independent Expert on human rights and international solidarity; (b) the mandate of Special Rapporteur on minority issues; (c) the mandate of Special Rapporteur on the human rights of migrants; and (d) the mandate of Special Rapporteur on the promotion and protection of human rights and fundamental freedoms while countering terrorism. The mandates of the four current mandate holders were extended until the appointment of their successors.

The key issues considered including reprisals, arbitrary detention, systemic racism, enforced disappearances, water and sanitation, and the rights of Indigenous peoples and people of African descent. It will also present an opportunity to address grave situations in over a dozen States.

### India Water Foundation at the 54<sup>th</sup> Session of UNHRC

India water Foundation participated in the 54th session of the UNHRC with full force submitting written statements, speaking as panelist in side events and organizing a side event.

**Side Event** - India Water Foundation organized a side event titled “Human Rights in India- Safeguarding Human Right to Water and Sanitation amidst Climate Emergency” on 14th September 2023. The eminent speakers in the event were- Dr. Arvind Kumar, President, India



Water Foundation, Mr. Satya Tripathi, Secretary General, Global Alliance for sustainable planet, Mr. Rajan Ratna, Deputy Head and Senior Economic Affairs Officer United Nations ESCAP-SSWA Office, Ms. Karin Gardes, Acting Executive Director & COO, Stockholm International Water Institute, MS. Sonja Koeppel, Co-secretary Protocol on Water and Health and Secretary of the Water Convention, Mr. Vishwaranjan Sinha, Programme Officer, Water and Wetlands-South Asia, IUCN. The side event analyzed the

policies and programmes related to human right to water and sanitation in India especially in the context of climate emergency the world is grappling with.

All the speakers appreciated the Government of India for the significant progress India has made especially in Water and sanitation sector and also gave suggestions and recommendations for the sustainability of the schemes. The side event received ample coverage in national and international media and was much appreciated by all.



India Water Foundation at UNHRC highlights progress in sanitation and rights to water

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India Water Foundation at UNHRC highlights progress in sanitation and rights to water



Geneva [Switzerland], September 18 (ANI): India Water Foundation highlighted the country's commendable progress in the field of sanitation and rights to water at the 84th session of the United Nations Human Rights Council in Geneva on Thursday.

Devdiscourse

India Water Foundation at UNHRC highlights progress in sanitation and rights to water

They also commended Clean India or Swachh Bharat Mission wherein 105 Million toilets were built bringing behavioural change in almost 600 million Indians.



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India Water Foundation highlighted the country's commendable progress in the field of sanitation and rights to water at the 84th Session of the United Nations Human Rights Council in Geneva on Thursday. At a side event titled "Sustaining Human Rights to Water and Sanitation in India amidst Climate

Times

India Water Foundation at UNHRC highlights progress in sanitation and rights to water



Geneva: India Water Foundation highlighted the country's commendable progress in the field of sanitation and rights to water.

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Geneva [Switzerland], September 15 (ANI): India Water Foundation highlighted the country's commendable progress in the field of sanitation and rights to water at the 84th Session of the United Nations Human Rights Council in Geneva on Thursday.

Kompasiana

Indian Water Foundation Menyoroti Kemajuan dalam Sanitasi dan Hak atas Air UNHCR



Geneva, 15 September 2023 (Kompas) - India Water Foundation menyoroti kemajuan dalam sanitasi dan hak atas air UNHCR.

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**Written Statements-** The written statements were submitted in interactive dialogues like right to water and sanitation, right to civil, political, economic, social and cultural rights, including the right to development, right to clean and healthy environment, annual panel discussion on gender equality, right to equitable international order etc.

**Oral Statements-** The oral statements were delivered in –

**General Assembly 4**

1. Right to development
2. ID with working group on mercenaries
3. Right to civil, political, economic, social and cultural rights and covid-19 recovery-
4. Right to equitable international order
5. Right to Equitable International Order

At the 54th session of the UN Human Rights Council Meeting on Interactive dialogue with the Independent Expert on the promotion of a democratic and equitable international order Dr. Arvind Kumar, President, India Water Foundation highlighted the responsibility of Global North as a historical polluter. He further stressed that the recent global developments, such as Covid pandemic, triple planetary crisis, mounting debt, challenges of food and energy security etc. have severely impacted the Global South. As a development sector organization IWF has been vocal about the energy transition from fossil fuels to renewables and India is the forerunner in global and sustainable energy transitions. At various climate Summits, India resisted the onslaught from the Global North and protected the interest of the Global South be it on the question of climate financing, limiting the emission norms, or highlighting the Global North’s responsibility as the historical polluter. As a responsible neighbor India not just gave vaccines to most of its neighbors but also to Africa and other countries of the global south considering the whole world as one family or Vasudhaiv kutumbkam.



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**Highlighted responsibility of Global North as historical polluter: IWF president**

Arvind Kumar, President of India Water Foundation, on Monday stressed that India has invested in climate financing and limiting the emission norms while highlighting the Global North's responsibility as the "historical polluter".

Geneva (Switzerland), September 19 (ANI) Arvind Kumar, president of India Water Foundation, on Monday stressed that India has invested in climate financing and limiting the emission norms while highlighting the Global North's responsibility as the "historical polluter".

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**Highlighted responsibility of Global North as historical polluter: IWF president**

By ANI | September 19, 2023 | World

Arvind Kumar, President of India Water Foundation, on Monday stressed that India has invested in climate financing and limiting the emission norms while highlighting the Global North's responsibility as the "historical polluter".

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**ANI**  
TUE, SEP 19, 2023 | UPDATED 17:44 IST

**Highlighted responsibility of Global North as historical polluter: IWF president**

Arvind Kumar, President of India Water Foundation (Photo: X/@arvindkumar1)

ANI | Updated: Sep 19, 2023 03:49 IST

Geneva (Switzerland), September 19 (ANI) Arvind Kumar, president of India Water Foundation, on Monday stressed that India has invested in climate financing and limiting the emission norms while highlighting the Global North's responsibility as the "historical polluter".

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**Highlighted responsibility of Global North as historical polluter: IWF president**

ANI | 19 September, 2023 04:52 AM IST

Geneva (Switzerland), September 19 (ANI) Arvind Kumar, president of India Water Foundation, on Monday stressed that India has invested in climate financing and limiting the emission norms while highlighting the Global North's responsibility as the "historical polluter".

Kumar made these remarks at an Interactive Dialogue with International Expert (IE) on

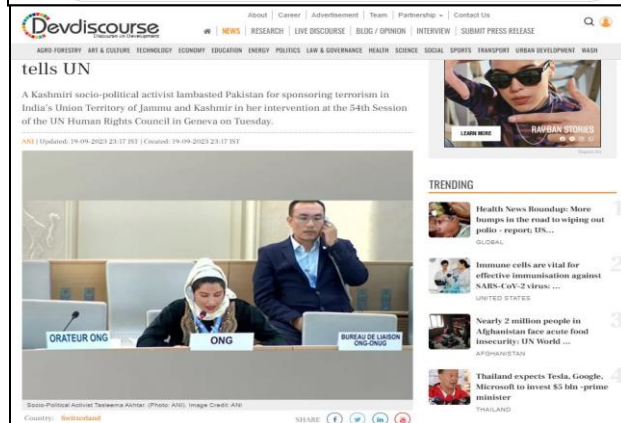
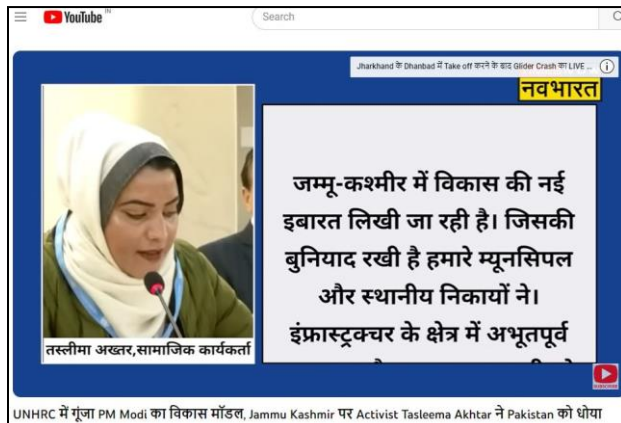
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## Right to Development

India Water Foundation's representative from Kashmir Ms. Tasleema Akhter during the Interactive dialogue with the Working Group on the use of mercenaries as a means of violating human rights and impeding the exercise of the right of peoples to self-determination. She also highlighted how as a social activist she has been exploring the cases of untold stories of atrocities committed on the innocent victims of terrorism in the Valley and have witnessed violence and killings of innocent persons by Pakistan sponsored terrorism. She appealed to the UN Human Rights Council to take appropriate action against the perpetrators of such inhuman acts so that the people of Kashmir can live happily and peacefully thereafter.



MON, SEP 20, 2023 | UPDATED: 10:24 PM IST

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**Terror victim families in Kashmir valley awaiting justice: Activist Tasleema Akhtar tells UN**

ANI | Updated: Sep 19, 2023 12:33:05 PM

Geneva [Switzerland], September 19 (ANI) : A Kashmiri socio-political activist lambasted Pakistan for sponsoring terrorism in India's Union Territory of Jammu and Kashmir in her intervention at the 54th Session of the UN Human Rights Council in Geneva on Tuesday.

Tasleema Akhtar, who hails from Srinagar, told the Council that she has been working as a social activist, exploring the cases of untold stories of atrocities committed on the innocent victims of terrorism in the Valley.

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Geneva [Switzerland], September 19 (ANI) : A Kashmiri socio-political activist lambasted Pakistan for sponsoring terrorism in India's Union Territory of Jammu and Kashmir in her intervention at the 54th Session of the UN Human Rights Council in Geneva on Tuesday.

Tasleema Akhtar, who hails from Srinagar, told the Council that she has been working as a social activist, exploring the cases of untold stories of atrocities committed on the innocent victims of terrorism in the Valley.

"Unfortunately, since my childhood, I have witnessed violence and killings of innocent persons by Pakistan-sponsored terrorism. Unbearable sufferings of women, children, old and young alike, at the hands of these terrorists. This led me to work for the cause of seeking justice for the families of victims", said Tasleema.

A large number of civilians in Jammu and Kashmir remain victims of decades long terrorism emanating from Pakistan.

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A Kashmiri socio-political activist lambasted Pakistan at the UN, for sponsoring terrorism in the Indian Union Territory of Jammu & Kashmir. Tasleema Akhtar, who hails from Srinagar, told the Council that she has been exploring atrocities committed on victims of terrorism in the Valley. Watch for details. #j&k #kashmiri #sociopoliticalactivist #tasleemaakhtar #srinagar #unitednations #un #pakistan #timesnoworiginals #englishnews #latestnews #latestupdates

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By ANI | Published: September 19, 2023 11:11 PM

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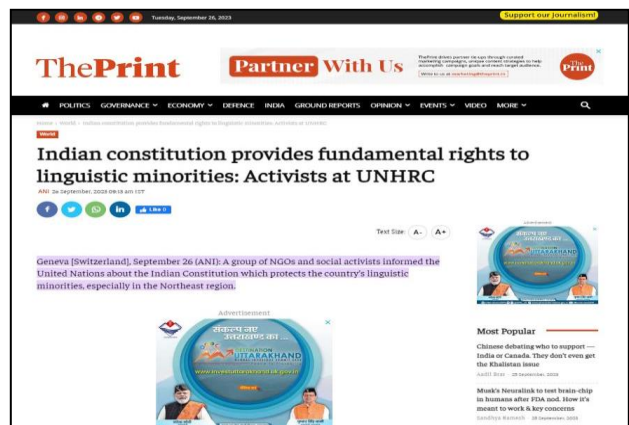
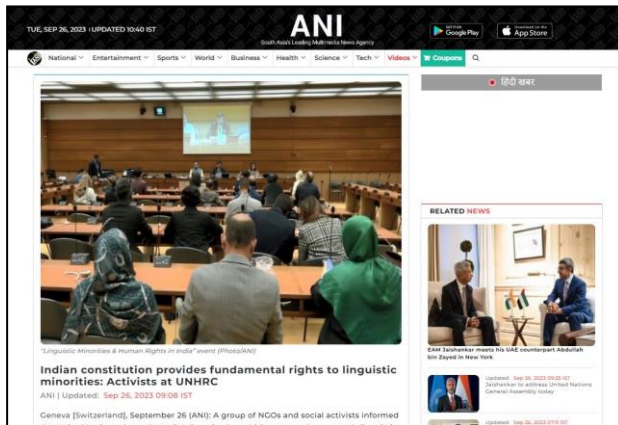
## Panelist

As a panelist in Side Event on 'Linguistics Minorities' on 25<sup>th</sup> September 2023 Dr. Kumar gave a true account and reasons behind the recent Manipur crisis which was blown out of proportion



by national and international media. He said, "There is hardly any doubt that India's North East Region is full of potential, not just for economic growth but also for cultural exchange and in the past decade the development has changed the face of the region and brought the states from periphery to mainstream. If we speak especially for Manipur then there is a systematic anti-India disinformation Campaign going on where bots from across the border have tweeted extensively, giving a religious angle to the Manipur incident." He further added

that "There is a need to implement tailored strategies that cater to the unique needs and aspirations of the state by ensuring comprehensive infrastructure and human development, addressing unemployment and providing alternative livelihood opportunities for long-term stability."



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Indian constitution provides fundamental rights to linguistic minorities: Activists at UNHRC

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Geneva (Switzerland), September 26 (ANI): A group of NGOs and social activists informed the United Nations about the Indian Constitution which protects the country's linguistic minorities, especially in the Northeast region.

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Constitution of India Grants Fundamental Rights to Linguistic Minorities: Activists at UNHRC

By Nisha Tandon

September 26, 2023



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Geneva: A group of NGOs and social activists informed the United Nations about the Indian Constitution which protects the country's linguistic minorities, especially in the Northeast region.

They were speaking at a side event organised by Sindh Adhikar Manch (Association) titled "Linguistic Minorities & Human Rights in India" during the 54th Session of the UN Human Rights Council.

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By ANI | Published: September 26, 2023 09:08 AM

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Indian constitution provides fundamental rights to linguistic minorities: Activists at UNHRC

Posted On: 2023-09-26 | Posted By: ANI

Geneva, Sept. 26 - A group of NGOs and social activists informed the United Nations about the Indian Constitution which protects the country's linguistic minorities, especially in the Northeast region.

They were speaking at a side event organised by Sindh Adhikar Manch (Association) titled "Linguistic Minorities & Human Rights in India" during the 54th Session of the UN Human Rights Council.

The panelists included Gajend Gurbani, CEO of Sindh Adhikar Manch (Association), Parmita Sarma from Akshar Foundation and Anand Kumar from Focus Global Report.

Gurbani addressed the audience and emphasised that Article 30(1) of the Indian Constitution provided a fundamental right to linguistic minorities to establish and administer education.

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**Indian Constitution provides fundamental rights to linguistic minorities: Activists at UNHRC**

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A Group of NGOs, social activists organised the event on the sidelines of the 54th Session of UN Human Rights Council. They highlighted the importance of the Indian Constitution which protects the linguistic minorities in the country. Gobind Gurbani, CEO of Sindhi Adhikar Manch

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- <https://bnn.network/world/india/constitution-of-india-grants-fundamental-rights-to-linguistic-minorities-activists-at-unhrc/>
- <https://jantaserishta.com/world/indian-constitution-provides-fundamental-rights-to-linguistic-minorities-activists-at-unhrc-2847637>
- <https://www.indiandefensenews.in/2023/09/indian-constitution-provides.html>
- <https://www.lokmattimes.com/international/indian-constitution-provides-fundamental-rights-to-linguistic-minorities-activists-at-unhrc/>
- <https://www.htsyndication.com/asian-news-international/article/indian-constitution-provides-fundamental-rights-to-linguistic-minorities%3A-activists-at-unhrc/75509508>
- <https://www.youtube.com/watch?v=NK10S8RHeq0>
- <https://www.indianarrative.com/world-news/indian-constitution-provides-fundamental-rights-to-linguistic-minorities-activists-at-unhrc-152329.html>
- <https://www-zee5-com.translate.goog/articles/indian-constitution-provides-fundamental-rights-to-linguistic-minorities-activists-at-unhrc? x tr sl=en& x tr tl=hi& x tr hl=hi& x tr pto=imgs& x tr hist=true>
- <https://timesofoman.com/article/136566-indian-constitution-provides-fundamental-rights-to-linguistic-minorities-activists-at-unhrc>
- <https://ishare.rediff.com/video/others/indian-constitution-provides-fundamental-rights-to-linguistic-minorities-activists-at-unhrc/11252197?pos=morefrom>

Here's an overview of some of the key issues on the agenda of the 54<sup>th</sup> session of UN Human Rights Council.

## **Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development**

### **Economic, social and cultural rights**

- a. Environmentally sound management and disposal of hazardous substances and wastes- It holds the mandate of human rights of the environmentally sound management and disposal of hazardous substances and wastes.
- b. Human rights to safe drinking water and sanitation- It holds the mandate of the human rights to safe drinking water and sanitation.
- c. Preventable maternal mortality and morbidity and human rights- This discusses the follow-up report on good practices and challenges in the application of a human rights-based approach to the elimination of preventable maternal mortality and A/HRC/54/1 5 morbidity, including through the utilization of the technical guidance by States and other relevant actors, including the United Nations Population Fund, the United Nations Development Programme, the United Nations Entity for Gender Equality and the Empowerment of Women (UN-Women) and the World Health Organization.
- d. Promoting and protecting economic, social and cultural rights within the context of addressing inequalities in the recovery from the coronavirus disease (COVID-19) pandemic- It discusses promoting and protecting economic, social and cultural rights within the context of addressing inequalities in recovery from the COVID-19 pandemic.

### **Civil and political rights**

- a. Enforced or involuntary disappearances- It is a working Group on Enforced or Involuntary Disappearances.
- b. Truth, justice, reparation and guarantees of non-recurrence- It discusses the promotion of truth, justice, reparation and guarantees of non-recurrence.
- c. Contemporary forms of slavery- It discusses contemporary forms of slavery, including its causes and consequences.
- d. Question of the death penalty- It discusses on capital punishment and the implementation of the safeguards guaranteeing protection of the rights of those facing the death penalty.
- e. Equal participation in political and public affairs- It discusses challenges, good practices and experiences in implementing the right to participate in public affairs, notably in the context of the COVID-19 pandemic and the post-pandemic recovery, including the role of participation in securing public health, and to prepare a summary report thereon, including any recommendations stemming there from, with a view to ensuring better recovery.
- f. Arbitrary detention- It discusses on Arbitrary Detention



## **Right to development**

It focuses on identifying and sharing best practices with Member States and to promote the implementation of the right to development worldwide for the enjoyment of all human rights, in order to allow Member States, relevant United Nations agencies, funds and programmes, international and regional organizations, national human rights institutions, civil society organizations and other stakeholders to identify challenges and gaps and share good practices and experiences in this regard.

## **Rights of peoples and of specific groups and individuals**

- a. Youth and human rights- It holds discussion on youth and human rights, fully accessible to persons with disabilities and young people's engagement with climate change and global environmental decision-making processes.
- b. Human rights and Indigenous Peoples- It discusses the impact of certain development projects on the rights of Indigenous Peoples, in particular the impact on Indigenous women and contributes to the promotion of, respect for and the full application of the provisions of the United Nations Declaration on the Rights of Indigenous Peoples, and to follow up on the effectiveness of the Declaration.
- c. Human rights of older persons- It discusses the enjoyment of all human rights by older persons.
- d. Rights of the child- It discusses the report on the rights of the child and inclusive social protection, in close cooperation with all relevant stakeholders, including States, the United Nations Children's Fund, other relevant United Nations bodies and agencies, the Special Representative of the Secretary-General on Violence against Children, regional organizations and human rights bodies, national human rights institutions and civil society, including through consultations with children themselves, to make the report available in an accessible and child-friendly format.
- e. Human rights of migrants- It discusses the human rights of migrants.

## **Interrelation of human rights and human rights thematic issues**

It discusses the gaps, challenges and progress in the implementation of the 2030 Agenda for Sustainable Development, focusing on the means of implementation taken together as an integrated package. Need for an integrated approach to the implementation of the 2030 Agenda for Sustainable Development for the full realization of human rights, focusing holistically on the means of implementation. It discusses the contribution of the Human Rights Council to the prevention of human rights violations. Also countering cyber bullying against children, which will be fully accessible to persons with disabilities, inviting States, civil society organizations, including children's organizations, United Nations agencies, the private sector, academia and other relevant stakeholders, ensuring the participation of children themselves, to address the implementation of the obligations of States under relevant provisions of international human rights law and to discuss challenges and best practices in this regard. Moreover countering religious hatred constituting incitement to discrimination, hostility or violence an update on the various drivers, root causes and human rights impacts of religious hatred constituting incitement to discrimination, hostility or violence, highlighting gaps in existing national, legal, policy and law enforcement frameworks, in particular in the context of the urgent debate held at its fifty-third session, to be followed by an interactive dialogue. The discussions were on the Negative impact of the legacies of colonialism on the enjoyment of human rights, Impact of unilateral coercive measures and overcompliance on the right to

development and the achievement of the Sustainable Development Goals, Promotion of a democratic and equitable international order, Use of mercenaries as a means of violating human rights and impeding the exercise of the right of peoples to self-determination, World Programme for Human Rights Education, Mandate of the open-ended intergovernmental working group to elaborate the content of an international regulatory framework on the regulation, monitoring and oversight of the activities of private military and security companies, Right to work in connection with climate change actions, responses and impacts in the context of sustainable and inclusive economies, Contribution of the Human Rights Council with regard to the human rights implications of drug policy.

### **Panel Discussions**

1. Biennial panel discussion on unilateral coercive measures and human rights Theme: “Impact of unilateral coercive measures and over compliance on the right to development and the achievement of the Sustainable Development Goals.
2. Annual discussion on the integration of a gender perspective throughout the work of the Human Rights Council and that of its mechanisms.
3. Biennial panel discussion on youth and human rights Theme: Young people’s engagement with climate change and global environmental decision-making processes accessible to persons with disabilities.
4. Annual half-day panel discussion on the rights of Indigenous Peoples Theme: Impact of certain development projects on the rights of Indigenous Peoples, in particular the impact on Indigenous women accessible to persons with disabilities.

### **Other thematic debates**

At this 54th session, the Council discussed a range of civil, political, economic, social and cultural rights and issues through dedicated debates with the:

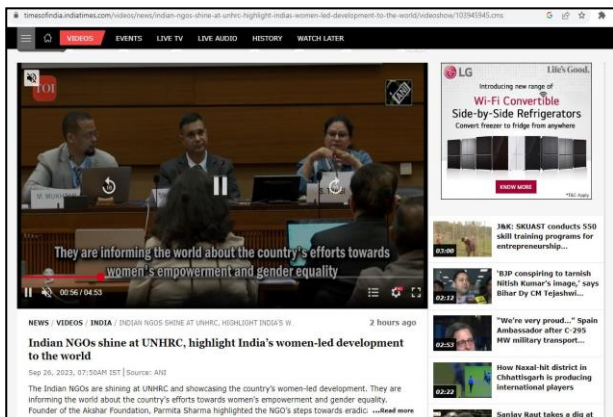
1. Special Rapporteur on the human rights to safe drinking water and sanitation
2. Special Rapporteur on the negative impact of unilateral coercive measures on the enjoyment of human rights
3. Special Rapporteur on truth, justice, reparation and guarantees of non-recurrence
4. Expert Mechanism on the Right to Development and the Special Rapporteur on the right to development
5. Special Rapporteur on contemporary forms of slavery, including its causes and consequences
6. Working Group on Arbitrary Detention
7. Independent Expert on the promotion of a democratic and equitable international order
8. Working Group on Enforced or Involuntary Disappearances
9. Working Group on the use of mercenaries as a means of violating human rights and impeding the exercise of the right of peoples to self-determination

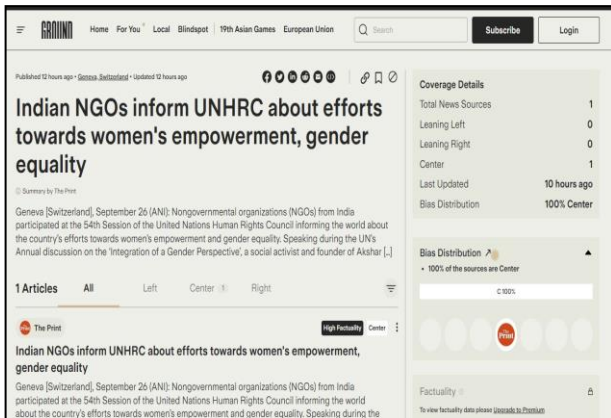
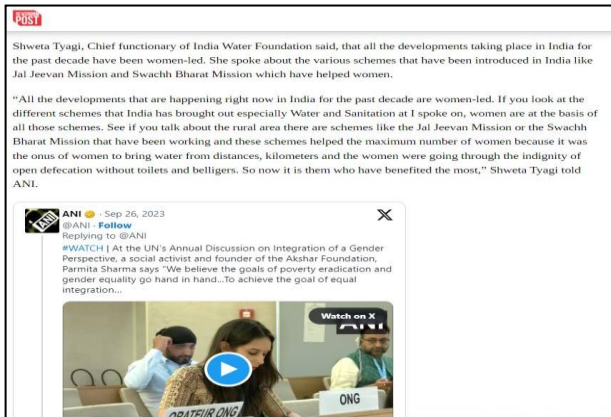
10. Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes
11. OHCHR on its report on economic, social and cultural rights, and COVID-19 recovery
12. Advisory Committee
13. ID on HC oral update on drivers, root causes and human rights impacts of religious hatred constituting incitement to discrimination, hostility or violence

In addition, the Council will hold dedicated debates on the rights of specific groups including with the:

1. Independent Expert on the enjoyment of all human rights by older persons
2. Special Rapporteur on the rights of Indigenous Peoples and the Expert Mechanism on the Rights of Indigenous Peoples

### Indian NGOs Shine at UNHRC: Showcasing Country's Women Led-Development





## Media Coverage Links

- <https://lnkd.in/drdSWGum>
- [https://lnkd.in/dhA\\_8RuB](https://lnkd.in/dhA_8RuB)
- <https://lnkd.in/dAXK5aDS>
- <https://lnkd.in/dDq-fHdv>
- <https://lnkd.in/dH8amCvm>
- <https://lnkd.in/ddSxVidC>
- <https://lnkd.in/dcDmW9hW>
- <https://lnkd.in/dxZ3HnA8>
- <https://lnkd.in/dqidZkMk>
- <https://lnkd.in/d2PAa4XG>
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- <https://www.womenentrepreneurindia.com/news/efforts-to-advance-gender-equality-women-s-empowerment-informed-by-indian-ngos-to-unhrc-nwid-4065.html>
- <https://www.tv9hindi.com/india/aaj-ki-taaja-khabar-live-updates-latest-news-hindi-samachar-daily-breaking-26-september-2023-2128957.html?>

# India Energy Week 2024

6-9<sup>th</sup> February 2024, Goa

India is not only embracing but also leading changes with its vast resources, booming economy, and progressive young population. Prioritizing energy security while aiming for a low-carbon future, India offers numerous investment opportunities in hydrocarbons, renewables, LNG, biofuels, and the broader energy sector. With the third largest energy demand globally and growth rates surpassing the global average, India has a crucial role amidst complex global challenges. The Ministry of Petroleum and Natural Gas hosted the India Energy Week in Goa from February 6<sup>th</sup> to 9<sup>th</sup>, 2024. This event serves as a significant platform for realizing both India's and the world's ambitious low-carbon goals. The exhibition featured 350 exhibitors presenting their technologies and services to 35,000 international energy professionals, while the conference included 400 speakers, including ministers, CEOs, thought leaders, and innovators, discussing challenges and exploring solutions to foster collaboration towards a sustainable future, with an audience of over 4,000 delegates

## Why India

India, ranking as the world's third-largest energy consumer, holds a pivotal position in global energy discourse. With a burgeoning economy and population, the nation is poised to experience the most substantial surge in energy requirements, significantly impacting global energy demand.

In order to fulfill India's objectives of ensuring secure, accessible, affordable, and sustainable energy, significant investments will be channeled across the entirety of the energy supply chain. These investments present unprecedented opportunities for the global energy community to contribute to the transformation of one of the world's most critical energy markets. India Energy Week 2024 serves as a dynamic platform for facilitating discussions on global energy demand. By bringing together experts, policymakers, and industry leaders, this event fosters collaborative dialogues aimed at highlighting India's role in the global energy landscape. Through India Energy Week, participants gain insights into energy security, sustainability, innovation, and the challenges posed by escalating energy demand, enriching global perspectives on these crucial issues.

## INDIA WATER FOUNDATION AT IEW

Dr. Arvind Kumar, President, India Water Foundation went to Goa to speak in the India Energy Week 2024. He made a presentation in session 15: (Sustainable use of Natural Resources) on 7<sup>th</sup> February



2024 from 11.30 am onwards in Technical Theater 3 – Energy Transition Theater, at ONGC campus Goa. His presentation was based on **Deciphering Inter linkage of biodiversity loss and climate change: Achieving net zero via Decarbonisation in India.**



### **Major Takeaways from IEW 2024:**

The India Energy Week 2024 drew to a successful close in Goa on February 9th, marking an occasion of immense achievement. A press release from the Ministry of Petroleum and Natural Gas announced that the forthcoming edition of this prestigious global energy conference will take place at Yashobhoomi in New Delhi from February 11th to 14th. Additionally, Union Minister Hardeep Singh Puri disclosed that the fourth edition in 2026 will return to Goa, specifically at the IPSHEM-ONGC Training Institute.

The four-day event, inaugurated by Prime Minister Narendra Modi, showcased a plethora of global oil, gas, biofuels, and renewable energy companies, each presenting their products and services. The platform facilitated collaboration, innovation, and growth across the energy spectrum through meaningful partnerships, as highlighted in the release.



Prime Minister Modi, in his opening address on the first day of the India Energy Week, reiterated India's dedication to unprecedented levels of investment in the energy sector, promising new avenues for investment and development. He emphasized the significant government spending in the sector and its potential to stimulate further investment within India. Furthermore, PM Modi inaugurated the integrated Sea Survival Training Centre, ONGC Institute in Goa, and witnessed demonstrations of its capabilities. Throughout the day, various conferences and panels, including a ministerial panel on "Ensuring energy security for nations and industry in a VUCA world," were held, featuring esteemed participants from around the world.

On the second day, the International Energy Agency (IEA) released a report forecasting India's rise as the largest source of global oil demand growth between 2024 and 2030. Additionally, discussions centered around topics such as developing LNG markets and infrastructure, highlighting the critical role of affordable pricing and synchronized infrastructure in meeting energy targets. During a ministerial panel discussion titled 'South-South Cooperation: Energy for Inclusive Growth,' India's G20 Sherpa Amitabh Kant projected India's future as an exporter of clean energy by 2047, particularly through the export of green hydrogen.

The third day witnessed Union Minister Hardeep Singh Puri commending the technological innovations showcased at the event and announcing India's achievement of 12% ethanol

blending with petrol, ahead of schedule. This milestone prompted the government to revise the target for ethanol blending to 20% by 2025. Moreover, discussions during spotlight sessions emphasized India's role as an emerging energy demand center and the potential it holds for global energy trade. Bharat Petroleum Corporation Limited (BPCL) unveiled its initiative 'Pure for Sure,' aimed at enhancing last-mile delivery efficiency and elevating customer satisfaction levels. Overall, the India Energy Week 2024 served as a pivotal platform for dialogue, collaboration, and strategic planning to address the evolving energy landscape, reaffirming India's commitment to sustainable energy development and global energy cooperation.

### **Could hydrogen revolutionize the path to a greener, budget-friendly future?**

Prime Minister Narendra Modi's call for increased investment in India's energy sector resonates with the nation's imperative to meet its escalating energy demands while ensuring both security and affordability. Under the "Panchamrit" strategy, diversification takes center stage, with ambitious targets set for renewables, biofuels, and emerging clean energy sources such as hydrogen. This comprehensive approach aims to diminish reliance on fossil fuels and mitigate the impacts of climate change.

The announcement of a 20% ethanol blending target in petrol by 2025 marks a significant policy shift. This move not only reduces greenhouse gas emissions compared to traditional petrol but also strengthens energy security by decreasing import dependence. Moreover, it is anticipated to generate new opportunities for farmers and foster rural development. The spotlight on startups during the event underscores India's acknowledgment of the pivotal role that youthful innovation plays in propelling progress. By integrating startups into the energy value chain, there's potential for the creation of cutting-edge clean energy solutions, thus accelerating India's transition towards a sustainable future. The event's emphasis on green hydrogen, produced from renewable energy sources, underscores its transformative potential. With its clean and versatile nature, hydrogen can be utilized across various sectors, including transportation, power generation, and industrial applications. Its combustion emits no greenhouse gases, rendering it a crucial tool in combatting climate change. India's Green Hydrogen Mission signifies the government's commitment to establishing itself as a global leader in green hydrogen production and export. Through numerous collaborations and Memoranda of Understanding (MoUs) announced at the event, India is actively laying the groundwork for a thriving green hydrogen ecosystem. This initiative has the potential to attract substantial investments, foster job creation, and position India as a key player in the global energy landscape. Minister Puri's reaffirmation of India's focus on a gas-based economy, alongside cleaner sources like hydrogen, demonstrates a strategic approach. Gas presents a comparatively cleaner alternative to coal while offering stability and flexibility to the power grid. This balanced strategy ensures energy security while facilitating a gradual transition towards renewables in the long run.

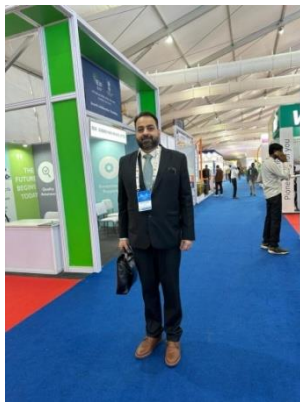
As the India Energy Week 2024 unfolds, it unveils a dynamic and ever-changing energy landscape for the nation. With a dedicated focus on renewables, alongside cleaner alternatives



like hydrogen, and a strategic push for diversification, India stands on the brink of a transformative era in its energy sector. Despite existing challenges, the developments witnessed at the event paint a promising picture of the future, where innovation and the adoption of clean energy solutions hold the key to ensuring energy security, environmental sustainability, and



robust economic growth for India. Hydrogen, with its remarkable versatility and potential for clean combustion, emerges as a pivotal player in this journey towards a sustainable energy future. Its wide-ranging applications across various sectors signify its potential to revolutionize India's energy landscape. However, the realization of this potential hinges upon India's ability to effectively harness and leverage hydrogen technology on a large scale. While the road ahead may pose hurdles, the momentum gained at the India Energy Week 2024 reflects a collective determination to overcome challenges and steer India towards a brighter energy future. With concerted efforts, strategic planning, and a commitment to innovation, India has the opportunity to not only meet its energy needs but also emerge as a global leader in the adoption and advancement of revolutionary energy technologies like hydrogen. Only time will reveal the extent to which India can capitalize on its potential and establish itself as a beacon of progress and sustainability in the realm of energy.



**The India Energy Week (IEW) 2024 concluded with notable success, wraps up with 30% more exhibitors.**

The event showcased a diverse array of innovations spanning over 18,000 square meters. Minister Puri praised the efforts of exhibitors, including individual entrepreneurs, for their contributions to technological innovation. He emphasized the significance of IEW as a prominent platform, facilitating interactions across a wide spectrum of industry professionals that might otherwise take much longer to connect with across different global geographies. Reflecting on the event's achievements, Minister Puri underscored the diversity and quality of technological innovations exhibited, highlighting IEW's growing prominence in the industry. Additionally, IEW 2024 featured the Energy Startup Challenge, recognizing Iron Technologies with the top prize, followed by Vasitara Private Limited and Aloe Ecell. Honorable mentions were awarded to Biofuels Junction and VDT Pipeline Integrity Solutions, showcasing the innovative spirit thriving within the Indian energy sector.

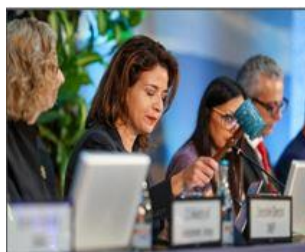
## UNEA - 6

26<sup>TH</sup> February – 1<sup>st</sup> March, 2024, Nairobi, Kenya

### OPENING:



The sixth session of the UN Environment Assembly (UNEA-6) began on Monday, February 26, 2024, at the UN Environment Programme (UNEP) headquarters in Nairobi, Kenya. During the opening of UNEA-6, President Leila Benali from Morocco emphasized the impact of major global conflicts, the rise of populist movements due to upcoming elections, and the opportunity UNEA-6 presents to restore trust in multilateralism and humanity.



The theme of “*Effective, inclusive, and sustainable multilateral actions to tackle climate change, biodiversity loss, and pollution*” was set for UNEA-6. It provided a moment to advance the global environmental agenda. During the opening session of UNEA-6, regional groups expressed their appreciation for the adoption of various global frameworks and agreements concerning biodiversity, chemicals, and marine biodiversity conservation. Additionally, they engaged in discussions regarding ongoing efforts, such as negotiations surrounding an international legally binding instrument on plastic pollution. Beyond regional groups, a multitude of other stakeholders, including major groups such as Business and Industry, Children and Youth, Farmers, Indigenous Peoples, Local Authorities, NGOs, Scientific and Technological communities, and Women, actively participated by presenting their unique perspectives and recommendations aimed at addressing environmental challenges and promoting sustainability.

This diverse array of viewpoints and recommendations underscored the comprehensive nature of discussions at UNEA-6, reflecting a collective call for concerted action to confront the triple planetary crisis and propel environmental sustainability forward.



The Sixth Session of the United Nations Environment Assembly concluded on 1 March 2024 with the adoption of 15 resolutions, two decisions and a Ministerial Declaration. Despite intense work over the two weeks in OECP, CoW, and later in informal consultations, four draft resolutions were withdrawn by the proponents:



- Solar Radiation Modification (SRM), submitted by Guinea, Monaco, Senegal, and Switzerland;
- Development of criteria, norms, standards and guidelines for nature-based solutions to support sustainable development, submitted by Cameroon;
- Effective, Inclusive and Sustainable Multilateral Actions towards Climate Justice, submitted by Sri Lanka; and
- Stepping up efforts for enhancing the circular economy transition domestically, regionally and globally, submitted by EU

#### **RESOLUTIONS ADOPTED:**

1. Circularity of a resilient and low-carbon sugar cane agro-industry
2. Amendments to the Instrument for the Establishment of the Restructured Global Environment Facility
3. Enhancing the role and viability of regional forums of environment ministers and United Nations Environment Programme regional offices in achieving multilateral cooperation in tackling environmental challenges
4. Promoting synergies, cooperation or collaboration for national implementation of multilateral environmental agreements and other relevant environmental instruments
5. Environmental aspects of minerals and metals
6. Fostering national action to address global environmental challenges through increased cooperation between the United Nations Environment Assembly, the United Nations Environment Programme and multilateral environmental agreements
7. Combating sand and dust storms
8. Promoting sustainable lifestyles

9. Sound management of chemicals and waste
10. Promoting regional cooperation on air pollution to improve air quality globally
11. Highly hazardous pesticides
12. Environmental assistance and recovery in areas affected by armed conflict
13. Effective and inclusive solutions for strengthening water policies to achieve sustainable development in the context of climate change, biodiversity loss and pollution
14. Strengthening international efforts to combat desertification and land degradation, restore degraded land, promote land conservation and sustainable land management, contribute to land degradation neutrality and enhance drought resilience [English only]
15. Strengthening ocean efforts to tackle climate change, marine biodiversity loss and pollution

#### **DECISIONS TAKEN:**

1. Management of trust funds and earmarked contributions
2. Provisional agenda, dates and venue of the seventh session of the United Nations Environment Assembly

#### **Joint Global Statement of Major Groups and Stakeholders for the 6th UN Environment Assembly (UNEA-6)**

A Joint Global Statement for the 6th UN Environment Assembly (UNEA-6) was presented by Major Groups and Stakeholders based on consultations and forums. The focus on tackling climate change, biodiversity loss, and pollution was welcomed, along with the recognition of the urgent need for international action to address these systemic threats to sustainable development.



#### **Nations fail to agree ban or research on solar geo-engineering**

At the United Nations Environment Assembly (UNEA) in Nairobi, some governments led by the African Group of countries wanted to ban SRM, while others led by Switzerland had pushed to set up an expert panel to research the nascent approach. However, no agreement was reached on how the United Nations should regulate controversial solar radiation management (SRM) techniques.

## **UN Environment Assembly Calls for Action to End the Use of the World's Most Toxic Pesticides by 2035**

The U.N. Environment Assembly (UNEA) called for action by 2035 to eliminate the use of the world's most toxic pesticides globally. These chemicals, known as highly hazardous pesticides (HHPs), pose serious threats to health and the environment.

### **Empty Efforts to Derail Plastics Treaty Negotiations at UNEA-6 Fail**

Efforts to derail plastics treaty negotiations at UNEA-6 failed, and the mandate to advance negotiations for a global plastics treaty was reaffirmed despite opposition from some countries.

### **UN Environment Assembly advances collaborative action on triple planetary crisis**

United action is deemed the superpower needed to address the triple planetary crisis, a pressing emergency that intensifies with each passing day. Biodiversity loss undermines economies and jeopardizes the well-being of billions, while pollution claims nine million lives annually. Rising sea levels, droughts, and floods pose existential risks for entire nations. In its Global Risk Report 2024, the World Economic Forum identified extreme weather as the foremost risk for the upcoming year, surpassing armed conflict and economic downturns. A major global report by UNEP's International Resource Panel, released this week, highlights that the unsustainable extraction, processing, and utilization of material resources for the global economy constitute the primary driver of the planetary crisis.



### ***MEA Day:***

UNEA-6 highlighted the importance of cooperation with multilateral environmental agreements (MEAs), with more than 170 ministers participating in discussions during a High-level Segment featuring leadership dialogues and a multi-stakeholder dialogue. Speakers underscored the significance of MEAs in addressing the triple planetary crisis, fostering environmental diplomacy, and revitalizing multilateralism. They emphasized stakeholder engagement, the identification of synergies among MEAs, and platforms for collaboration and information exchange and the need for collective will to address environmental challenges.



### ***Strengthening Science-Policy Interface:***

Discussions centered on establishing a science-policy panel to enhance chemical and waste management and pollution prevention. Speakers emphasized integrating traditional knowledge and fostering two-way communication between scientists and policymakers.

### ***Enhancing Cooperation:***

Speakers highlighted national action and stakeholder engagement as crucial for integrated implementation. Challenges such as communication gaps among ministries and funding constraints were addressed, with calls for discussions on private sector involvement and innovative funding sources.

### ***Opportunities for Integration:***

Opportunities for integrated action, particularly in implementing the Kunming-Montreal Global Biodiversity Framework (GBF) and the Global Framework on Chemicals, were emphasized. Collaboration among UN agencies and the need for a systems approach were highlighted as key strategies for effective MEA implementation. This urgency was not only about saving the planet but also about meeting the imminent deadline of UNEA-6.

### ***Leadership Dialogue:***

The session focused on leveraging science, data, and digitalization to transition to a sustainable



future. Speakers emphasized the importance of turning scientific findings into actionable policies and incorporating diverse perspectives and knowledge systems into decision-making processes.

### ***Multi-Stakeholder Dialogue:***

Speakers emphasized the need for collaborative efforts across society to address environmental challenges effectively. They highlighted the importance of empowering marginalized groups, fostering innovative partnerships, and ensuring transparency and inclusivity in decision-making processes. Overall, the discussions underscored the urgent need for collective action to tackle environmental crises and build a more sustainable future.

## **REPORT OF EXECUTIVE DIRECTOR:**

In her report, UNEP Executive Director Inger Andersen outlined six key areas where the sixth session of the United Nations Environment Assembly may seek to promote more effective, inclusive, and sustainable multilateral action:

1. Implementing the Kunming-Montreal Global Biodiversity Framework
2. Advancing integrated approaches for achieving a water-secure world
3. Ensuring responsible mining practices and promoting sustainable minerals and metals use
4. Enhancing cooperation concerning nutrients, particularly phosphorus
5. Reviewing climate-altering technologies and measures
6. Aligning the financial system with sustainability goals

### **UN Environment Assembly adopts India's resolution on sustainable lifestyles**

The United Nations Environment Assembly (UNEA) recently adopted a resolution on sustainable lifestyles put forward by India during its sixth session in Nairobi, Kenya. Co-sponsored by Sri Lanka and Bolivia, the resolution underscores the importance of adopting planet-friendly living practices, a concept championed by Prime Minister Narendra Modi through the Lifestyle for Environment (LiFE) movement. The resolution reaffirms commitments outlined in the 2030 Agenda for Sustainable Development, emphasizing the need for integrated, indivisible, and interdependent actions. It highlights the significance of ensuring that all individuals have access to relevant information and education for sustainable development, fostering lifestyles in harmony with nature. Recognizing the potential of behavioral changes



toward sustainable lifestyles, the resolution acknowledges the role of various stakeholders including the private sector, industry, local authorities, communities, and Indigenous peoples. It emphasizes the eradication of poverty as crucial for sustainable development and stresses the importance of education and skills in promoting sustainable consumption and production. Furthermore, the resolution calls for collaboration among member states, international organizations, NGOs, the private sector, and other stakeholders to create enabling conditions for sustainable lifestyles. It encourages the sharing of information, best practices, and research to facilitate the adoption of sustainable living practices. Additionally, the resolution requests the UNEP Executive Director, in partnership with UN Regional Commissions, to conduct regional dialogues on sustainable lifestyle practices. These dialogues aim to explore diverse approaches, including ecocentric approaches, and to promote living in harmony with nature.

### **Conclusion:**

The sixth session of the United Nations Environment Assembly (UNEA-6) has been marked by significant progress and collaborative efforts towards promoting sustainable lifestyles and

addressing environmental challenges. With the adoption of India's resolution on sustainable lifestyles, co-sponsored by Sri Lanka and Bolivia, UNEA-6 reaffirmed its commitment to the principles outlined in the 2030 Agenda for Sustainable Development. Throughout the session, global leaders and stakeholders emphasized the importance of behavioral changes, education, and collaboration in achieving sustainable development goals. The resolution recognizes the role of various stakeholders, including governments, the private sector, local communities, and Indigenous peoples, in fostering sustainable living practices. Furthermore, the resolution calls for enhanced cooperation and information sharing among member states and stakeholders to create enabling conditions for sustainable lifestyles. Regional dialogues on sustainable lifestyle practices, as proposed in the resolution, aim to explore diverse approaches and promote harmony with nature.

As UNEA-6 draws to a close, it leaves behind a legacy of renewed commitment to environmental stewardship and sustainable development. The progress made during this session sets the stage for continued efforts towards building a greener, more sustainable future for all.

By Shweta Tyagi\*



# UNFCCC COP - 28

30<sup>th</sup> November-12<sup>th</sup> December 2023, Dubai

The COP is the supreme decision-making body of the Convention. All States that are Parties to the Convention are represented at the COP, at which they review the implementation of the Convention and any other legal instruments that the COP adopts and take decisions necessary to promote the effective implementation of the Convention, including institutional and administrative arrangements.

The COP 28 Summit in Dubai marks a pivotal moment, with nations coming together to solidify their commitments in combating climate change. Since the landmark Paris Agreement, concrete and collaborative actions initiated by countries have been successful in addressing climate challenges such as global warming. Further in this direction, COP 28 has emerged as a crucial milestone, successfully uniting the world to address pressing environmental concerns. Beyond witnessing nations agreeing on ways to limit the global temperature rise within the 1.5-degree Celsius threshold, helping vulnerable communities adapt



to the effects of climate change, and achieving net-zero emissions, the Summit featured the Global Stocktake for the first time, examining the progress made in curbing global warming and underscoring the seriousness of countries in building a sustainable and resilient future through collaborative endeavors on the global stage.

As COP28 draws near, the world braces for pivotal decisions that could profoundly shape the course of global climate action. On one hand, the planet hurtles toward an impending climate catastrophe. On the other, governmental efforts to avert this crisis appear insufficient. Amidst these dire realities, a beacon of hope emerges in the form of a highly anticipated event—an acronym laden with the promise of change: COP28. This gathering holds the potential to steer us toward a more sustainable and resilient future.

## India Water Foundation at COP28

### Side Event

India Water Foundation co-organized a side event in partnership with Open Dialogues International Foundation, RE Scoop, Saving Our Planet, International Climate Development Initiative and Femmes Bladi. Speakers in the event were Dr. Arvind Kumar, President, India Water Foundation, Ms. Chiara Martinelli from CANEurope, Mr. Stephan Savarese from Saving Our Planet and Ms.



ChiaChun Angela Liang. The Discussion focused on if and how multi-stakeholder dialogues and other participatory engagement methods can be an effective tool for climate action in its different dimensions, including specific UNFCCC agenda themes (such as energy, just transition, gender, adaptation and resilience, science, It was an Interactive dialogue with the audience, combined with the discussion.

### **Multi-Stakeholder Policy Dialogue**

India Water Foundation organized a Multi-Stakeholder Policy Dialogue on 'Water Transversality & Climate Risk: Adaptation, Mitigation & Resilience Building' in collaboration with Global Alliance for a Sustainable Planet at the GASP Pavilion in the Blue Zone on 5th December 2023. The speakers in the event were Dr. Arvind Kumar, President, India Water Foundation, Dr. David Cooper Acting Executive Secretary, Convention of Biological Diversity, Dr. Satya Tripathi, Secretary General of GASP and former UN Assistant Secretary General, Mr. Eric Tardieu, Vice President, World Water Council, Dr. Eddy Moors, Rector, IHE Delft Institute of Water Education, Mr. Thomas Rebermark, Director- Swedish Water House- International Processes, Stockholm International Institute of Water, Mr. Anthony Mhagama, Manager of the SUSTAIN II Programme, IUCN, Mr. Hitesh Vaidya, Chief Technical Advisor, IWF. The event was moderated by Ms. Shweta Tyagi, Chief Functionary of India Water Foundation. The event highlighted the benefits and co-benefits of linkage of water and related sectors. Need for targeted climate finance and raising awareness for the role of water for climate mitigation and adaptation as well as resilience building.



### **Young Ambassador of Climate Change**

Our little Jalmitra, an ambassador for environment and Climate Dhananjay Kumar a student of amity International School, Pushp Vihar, Delhi attended COP28 as Green zone registered participant and explored breakthrough climate innovations, cutting-edge technology, interactive exhibits, inspiring art installations and film screenings. He also treated his taste buds to some sumptuous meals. The COP brought together young climate champions from over 180 countries to a platform to share their solutions on the global stage, and to deliver a clear message to leaders all over the world- We need to act now to address climate change. He addressed world leaders and made an appeal to other young delegates to reduce emissions to control global warming and to conserve our precious natural resources and use them responsibly for a sustainable planet. After all they are the future residents of Earth and shall hold all of us responsible for degrading the #environment and heating it.



## India at COP28

The COP28 was attended by a record number of delegates from the government of India with around 725 party delegates and 223 party overflow headed by Sh. Bhupendra Yadav, Union Minister of Environment, Forest and climate change. The India Pavilion hosted various events organized by several central ministries and state governments. The CoP 28 inauguration was attended by PM Modi and in his speech he made several points on how India has 17 percent of the world's population, is the most populous country but its share in global carbon emissions is less than 4 percent- although Climate agencies say that figure is about 7% . It's one of the few economies in the world that is on track to meet the NDC targets and has pledged to reduce emissions intensity by 45 percent by 2030, increase the share of non-fossil fuel to 50 percent of the mix. It is sticking to a net zero target of 2070, not bringing that earlier. India and UAE launched a Green Credit Initiative. He also made a big announcement- that India would like to host the CoP33 to be held in 2028 that India last hosted in 2002. India has refused to sign the COP28 Declaration on Climate and Health citing the lack of practicality in curbing greenhouse gases use for cooling in the health sector, as the reason. India expressed concerns that greenhouse gas reduction for cooling in the health sector could hinder its ability to meet the growing demands for medical services, particularly in remote and underserved areas. India also refrained from signing the pledge to triple the world's renewable energy capacity by 2030 even though New Delhi already committed to it as part of its G20 presidency. During the UN's climate talks here, 118 countries committed to tripling the global renewable energy capacity by 2030 in a highly endorsed initiative.



## Key themes Discussed

Beyond discussion of current progress and the future of fossil fuels, the GST decision includes important language on themes that emerged as critical throughout the conference:

- **Science:** The multiple references in the decision to findings in the IPCC's sixth assessment report are significant. The decision notes with 'alarm and serious concern' the IPCC's finding that human activities have 'unequivocally' caused global warming of about 1.1 °C and that climate impacts are already being felt in every region across the globe and disproportionately affecting those who have contributed least to these impacts. The decision also notes the IPCC's finding that feasible and effective mitigation options are already available in all sectors to keep 1.5 °C within reach with the necessary cooperation on technologies and support.
- **Equity:** The importance of equity between Parties, as well as the principle of common but differentiated responsibilities and respective capacities, was reiterated frequently

throughout discussions on the GST, culminating in multiple references to these concepts throughout the final decision text.

- **Nature:** A key theme throughout the conference were the critical links between achieving emission reductions and protecting biodiversity. This is reflected in the decision text, which contains language emphasizing the importance of conserving, protecting and restoring nature and ecosystems towards achieving the Paris Agreement temperature goal, and noting the importance of ensuring the integrity of all ecosystems and protection of biodiversity. A reference to enhanced efforts towards halting and reversing deforestation and forest degradation by 2030 was also included in the final text.
- **Technology and AI:** The GST decision underlines the fundamental role of technology development and transfer, endogenous technologies and innovation in facilitating urgent adaptation and mitigation action. Interestingly, it highlighted the role of the Technology Mechanism Initiative on Artificial Intelligence for Climate Action, which explores the role of AI in providing climate adaptation and mitigation solutions. In this regard, it is worth noting that outside negotiations, COP28 saw the launch of the AI Innovation Grand Challenge to develop AI solutions for climate action in developing countries, with a focus on least developed countries and Small Island Developing States. The GST decision also records Parties' agreement to establish a 'technology implementation programme' to strengthen support for the implementation of technology priorities identified by developing countries.
- **International cooperation:** Broadly, the final decision notes the importance of continued cooperation between Parties as well as placing Parties' actions within the context of achieving the Sustainable Development Goals.

### **Beyond the negotiating rooms: critical themes**

Outside of the formal negotiations, COP28 saw significant developments in a range of areas, from energy transition, cutting methane reductions and developing critical minerals, to protecting nature and health. We note some highlights below.

**Energy transition-** Discussions on the energy transition was a core focus at COP28. Outside of the GST decision, several announcements were made signalling an understanding of the important role of the energy transition in meeting the temperature goals of the Paris Agreement, including: COP28 President, Sultan Al Jaber, launched the Global Decarbonisation Accelerator which is based on three pillars: “rapidly scaling the energy system of tomorrow, decarbonising the energy system of today; and targeting methane and other non-CO2 greenhouse gases”. Over 60 countries signed the Global Cooling Pledge, a joint initiative between the UAE and the UN Environment Programme-led Cool Coalition. The Pledge aims to reduce emissions from cooling equipment by 68% by 2050 as well as increase access to sustainable cooling by 2030. The Global Cooling Pledge was launched just after the Cool Coalition published its Global Cooling

Watch Report which predicted that emissions from the cooling sector will more than double by 2050 and sets out sustainable cooling measures in three areas: “passive cooling, higher-energy efficiency standards, and a faster phase down of climate-warming refrigerants”.

**Methane and oil and gas industry decarbonisation-** Importantly, the final GST decision calls on Parties to contribute to efforts to accelerate and substantially reduce non-carbon-dioxide emissions globally, including in particular methane emissions by 2030. This reflects the dominance of discussions around combatting methane throughout the conference. The COP28 Global Methane Pledge Ministerial saw Ministers welcome a number of national actions and grant funding initiatives aimed at delivering on the Global Methane Pledge goal of cutting methane emissions by at least 30% by 2030 relative to 2020 levels. Kazakhstan, Kenya, Turkmenistan, Romania, and Angola joined the Global Methane Pledge, bringing total participation in the pledge to 155 governments. Additionally, the COP28 Presidency and Kingdom of Saudi Arabia launched the ‘Oil and Gas Decarbonisation Charter’, which calls on the oil and gas sector to increase their climate action. So far, the Charter has garnered the support of at least 50 oil and gas corporations from across the globe. Signatories to the Charter commit to net-zero operations by 2050 at the latest, ending routine flaring by 2030, and achieving ‘near-zero’ upstream methane emissions. Among other things, signatories also agree to:

- invest in renewables, low-carbon fuels and negative emissions technologies;
- increase transparency with respect to reporting on their greenhouse gas emissions and progress in reducing emissions;
- increase their alignment with broader industry best practices to accelerate decarbonisation of operations, aspiring to implement current best practices by 2030 to collectively reduce emission intensity; and
- provide secure and affordable energy to support the development of all economies.

**Hydrogen-** The final GST decision calls on Parties to contribute to global efforts on accelerating zero- and low-emission technologies, including low-carbon hydrogen production. Outside of formal decisions, the conference saw the launch of multiple initiatives to support scaling up of hydrogen production:

- The Intergovernmental Declaration of Intent on Mutual Recognition of Certification Schemes for Hydrogen and Hydrogen Derivatives. The participants to the declaration aim to accelerate the development of technological solutions to enable mutual certification scheme recognition through cooperation with the International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE) and the Hydrogen Technology Cooperation Programme (Hydrogen TCP). Participants will nominate government experts to work with IPHE and Hydrogen TCP to develop solutions for mutual recognition in the context of renewable and low-carbon hydrogen as well as hydrogen derivatives. The development of such solutions may set benchmarks for standards of hydrogen certification, particularly around how “green” the hydrogen must be.

- Publication of an ISO methodology (Technical Specification, TS 19870), which provides a global benchmark for assessing greenhouse gas emissions of hydrogen pathways on a life-cycle basis, namely from well to consumption gate, including every delivery gate. However, the ISO methodology has been criticised for lacking any threshold to determine whether the hydrogen is actually clean and green, including considering emissions generated in producing the hydrogen (e.g. from the electricity grid) as well as leakage in the generation of blue hydrogen (being hydrogen produced from gas).
- A Public-Private Action Statement on “cross-border trade corridors in hydrogen and derivatives” in partnership with the International Hydrogen Trade Forum and the Hydrogen Council, which provides for public-private partnerships to accelerate clean energy deployment.
- A Joint Agreement on the responsible deployment of renewables-based hydrogen, which seeks to align hydrogen deployment with an equitable, nature-positive and net zero future. The agreement noted six broad themes that should inform responsible deployment.

**Critical Minerals-** There was also recognition at COP28 around the central role of critical minerals in achieving the Paris Agreement climate goals through enabling the development of clean energy projects and technologies. UN Secretary-General António Guterres announced a panel would be set up that aims to ensure the shift from fossil fuels to renewable energy is just, sustainable and equitable. Referred to as the “Panel on Critical Energy Transition Minerals”, it will bring together governments, international organisations, industry and civil society to develop common and voluntary principles for guiding extractive industries, in order to achieve a just and sustainable transition. The focus on critical minerals is particularly important given the consensus at COP28 on tripling global renewable energy capacity by 2030, which will significantly increase demand for critical minerals. This will put strain on countries with extractive industries to ensure that those industries operate in ways that are aligned with the Paris Agreement and other international initiatives, such as the Kunming-Montreal Global Biodiversity Framework and the Sustainable Development Goals, as well as placing cost pressures on importing countries, particularly developing countries.

**Food, Agriculture and Water-** Transformation of agriculture and food systems emerged as a key discussion point throughout the conference. Perhaps most significantly, over 150 countries, endorsed the Declaration on Agriculture, Food Systems and Climate Action. Signatories to this Declaration agree to strengthen their shared and respective efforts to accelerate and scale science and evidence-based innovations - including local and indigenous knowledge - which increase sustainable productivity and production of agriculture as well as to integrate agriculture and food systems into National Adaptation Plans, NDCs, and other related strategies before COP30 convenes in 2025. Food, Agriculture and Water Day at COP28 saw several other major announcements, demonstrating the increasing recognition of the impacts of climate change on

our food systems as well as the impact of industrial agriculture on the environment. Some of the key announcements included:

- The UN High Level Champion for COP28, H.E Razan Al Mubarak, announced that over 200 non-State actors, including farmers, cities, businesses, and financial institutions, have signed the Call to Action for Transforming Food Systems for People, Nature, and Climate whereby signatories have committed to take ten priority actions to deliver the shared vision that by 2030, ‘food systems deliver significant, measurable progress for people, nature and climate’.
- The COP28 Presidency, together with the Food and Agricultural Organisation (FAO), the World Bank, CGIAR and the International Fund for Agricultural Development announced the Agrifood Sharm-El Sheikh Support Program. This is a three-year program which aims to enable countries and regions unlock finance and support for farmers, food producers, small agribusinesses and local communities.
- The COP28 Food-Agri-Climate National Action Toolkit was launched to provide a resource for national policy makers and decision-makers to accelerate efforts on climate action and agriculture system transformation.

**Health-** COP28 was the first COP to have a thematic day focused on health, recognising the negative impacts of climate change on health. The prominence given to health at this year’s conference has been welcomed by many, including the World Health Organisation. In a landmark development 123 countries, signed the UAE Climate and Health Declaration, which includes commitments to pursue eight common objectives such as “promoting steps to curb emissions and reduce waste in the health sector, such as by assessing the greenhouse gas emissions of health systems, and developing action plans, nationally determined decarbonisation targets, and procurement standards for national health systems, including supply chains.” In parallel, the Guiding Principles for Financing Climate and Health Solutions (Guiding Principles) were published. The key pillars of the Guiding Principles include improving the efficiency and equity of financing for health and for climate as well as accelerating climate and health solution to save and improve lives both for present and future generations.

**Climate Finance-** At COP28, Parties continued discussions on setting a new collective quantified goal on climate finance (NCQG) which will build on the goal of developed country Parties to mobilise USD 100 billion per year by 2020. While a number of Parties claim that the USD 100 billion per year target has not yet been met, an agreement was reached to advance the development of a draft negotiating text for consideration by the Parties at COP29, including at least three technical expert dialogues in 2024 to allow for in-depth technical discussions on the elements of the NCQG. Outside of the negotiating rooms, a number of efforts were made to progress climate finance. Some of the key announcements included: Thirteen national governments endorsed the UAE Leaders’ Declaration on a Global Climate Finance Framework which includes 10 articles over the four themes of making finance available, accessible and

affordable, collective action, opportunity for all and delivering at scale. The UAE, with launch partners BlackRock, Brookfield, and TPG, announced the launch of ALTÉRRRA, an investment platform which aims to facilitate private capital towards climate investments, focusing on emerging markets and developing economies..

**Nature-** The importance of nature, and recognition that countries need to coordinate and simultaneously implement strategies that address both climate change and biodiversity loss, was a central theme at the conference. The UAE COP28 Presidency and the Presidency to the 15th Conference of the Parties under the Convention on Biological Diversity released a joint statement recognising that there is no pathway to fully achieve the temperature goals of the Paris Agreement without “urgently addressing climate change, biodiversity loss and land degradation together in a coherent, synergistic and holistic manner”.

Nature, Land use and Oceans Day in the second week of the conference saw a focus on scaling solutions to protect, restore and effectively manage natural ecosystems, with key events and announcements including: A high-level ministerial event, ‘From Agreement to Action: Harnessing 30x30 to Tackle Climate Change’, was held which showcased that the global biodiversity target to protect at least 30 percent of the planet’s land and ocean by 2030, is also a critical way to help achieve the world’s climate goals. Nature finance was also a particular focus at COP28, with over \$186 million of new financing for nature-based solutions announced.

UNEP released its ‘State of Finance for Nature 2023’ report which found that nearly \$7 trillion of public and private finance is invested in activities that directly harm nature (some 30 times the amount spent on nature-based solutions annually). Meanwhile, the Inter-American Development Bank (IDB) and other multi-lateral development banks (MDBs) published the Common Principles to Track Nature-Related Finance, a set of principles to track nature-positive finance, aimed at making it easier for MDBs to implement screening and tracking systems that quantify the volume of finance going to nature-positive activities from direct and indirect activities

**Multi-level action, urbanisation, built environment and transport-** The GST text calls on Parties to contribute to accelerating the reduction of emissions from road transport including through development of infrastructure and rapid deployment of zero and low-emission vehicles. Multiple initiatives and announcements were made at COP28 to facilitate low-carbon transportation, as well as built environments and infrastructure. These included: The UAE Ministry of Climate Change and Environment, Abu Dhabi Waste Management Company, Tadweer, and Roland Berger, launched the Waste to Zero Initiative, which will host worldwide workshops and discussions which will focus on resource and waste management, the circular economy and emission reduction technologies. Led by France and Morocco, the Buildings Breakthrough was launched, which has the target to make near-zero emissions and climate resilient buildings ‘the new normal by 2030’. The UAE and Canada also launched the Cement and Concrete Breakthrough which will support new innovative technologies such as carbon



capture utilisation and storage to help accelerate the decarbonisation of the cement and concrete industry.

**Inclusivity, youth and gender equality-** Inclusivity was one of the four cross-cutting themes at COP28 with a thematic day focusing on youth, children, education and skills as well as gender equality, the just transition and the role of indigenous peoples in climate action also featuring in the COP28 thematic program. Some of the key announcements in this regard included:

- COP28 and YOUNGO (the Children and Youth Constituency of the UN Framework Convention on Climate Change) launched the first ever Youth Stocktake, an analysis of the involvement and inclusion of youth in the UNFCCC and climate diplomacy as well as offering strategies for enhancing youth participation.
- The COP28 Presidency launched a new COP28 Gender-Responsive Just Transition and Climate Action Partnership which was endorsed by 68 countries. Signatories to this Partnership have committed to strengthen efforts to fully incorporate the human rights of women and girls in just transition efforts as well as to encourage gender-responsive strategies on mitigation and adaptation, among others.
- The International Union for Conservation of Nature, International Indigenous Forum on Biodiversity (IIFB), and IUCN Indigenous Peoples Organisations (IPO) members launched the Podong Indigenous Peoples Initiative which will increase funding and capacity-building for indigenous peoples and organisations.
- In collaboration with the SME Climate Hub, the COP28 Presidency launched the COP28 & SME Climate Hub for MENA which will provide free resources to assist small and medium enterprises (SMEs) across the Middle East and North Africa make a climate commitment, as well as to measure, report and reduce emissions.

## Major Achievements

**Global Stock Take:** This will be the first CoP Global Stock Taking exercise (GST) to see how the world's actions in the past few years measure up against the Paris CoP 21 agreement in 2016. The Global Stocktake (GST) – the first comprehensive assessment of progress since the 2015 Paris Agreement – has been the headline agenda item in the lead-up to COP28. A 'technical dialogue' working group has led the process of collecting and summarising data on current progress over the last year, and submitted an output report that Parties discussed in Dubai. Producing a final decision text that establishes the urgency and action needed from Parties to meet those goals under Paris was a key deliverable for the COP28 Presidency.

The GST sets out the directives for governments establishing their next round of Nationally Determined Contributions (NDCs) – plans for emissions mitigation and climate adaptation to ensure we do not surpass 2°C of global warming, and aiming for below 1.5°C. A debate on fossil fuels was part of the GST process, with the potential to include some language around their

‘phasing out’ or ‘phasing down’ in the decision text. The final text includes a number of historic steps but represents incremental rather than transformative progress that many Parties – especially the Alliance of Small Island States (AOSIS) negotiating bloc – and climate activists were pushing for. In the final text Parties are encouraged to submit revised NDCs with ‘ambitious, economy-wide emission reduction targets, covering all greenhouse gases, sectors and categories and aligned with limiting global warming to 1.5°C, as informed by the latest science, in the light of different national circumstances’ (Paragraph 39).

The outcome of the fossil fuel debate in the language of the text is mixed: there is recognition of the need to ‘transition away from fossil fuels’ but this is limited to energy systems and includes an additional paragraph on ‘transitional fuels’. The text also includes commitments to triple renewable energy, double energy efficiency, and reduce methane emissions (although without a clear target) by 2030. Language on coal phase-out was diluted from ‘rapidly phasing down’ unabated coal with limits, to a more general ‘efforts towards phase-down’. The text also includes discussion on the need for adaptation support, protection of nature and biodiversity, and relevant sectoral transformations needed, including in food systems. Ultimately, although this decision includes important recognition of sectoral shifts needed, including on fossil fuels, it will be insufficient to stay below 1.5C of warming this century. While the GST includes valuable high-level decisions, the text includes many loopholes, and it remains to be seen how governments will incorporate these guidelines into their revised NDC submissions.

**Climate Finance-** Including a Loss and Damage Fund- On the first day of COP28, Parties agreed to the creation of a new fund for Loss and Damage. This was celebrated as a major win for the COP Presidency and an auspicious start to the conference. A number of governments announced new contributions at the outset, while others made commitments to the Fund later in the week, with pledges totalling \$770 million. The new Loss and Damage Fund is a significant accomplishment considering the issue failed entirely during negotiations at COP26 in Glasgow just two years ago. While the decision was widely praised – with credit to AOSIS and the Least Developed Countries group (LDCs) for pushing this forward over decades – it has involved a number of significant concessions. There are ongoing points of contention with the final agreement, which featured a compromise proposal for the Fund to be administered by the World Bank for an interim four-year period. These include:

- The World Bank is mainly loan-based, donor driven and rarely provides the types of non-revenue generating grants that are needed to support loss and damage impacts.
- Parties are encouraged, but not obligated, to contribute, and underlying questions of liability and compensation were entirely removed.
- Who is considered a donor and who should be a recipient – and where do oil-producing States fall?
- How Non-Economic Losses and Damages (NELD) will be considered for funding?
- Where will the Fund sit long-term?

Developing country Parties have continuously emphasised that while the agreement on the Fund is an important step, ambitious action on emissions mitigation – including a phase-out of fossil fuels – should be the top priority to reduce the need for Loss and Damage support. To that end, other Parties announced further climate finance support during Global Climate Finance Day, including pledges for the Least Developed Countries Fund and the Special Climate Change Fund (for SIDS) – both part of the Global Environment Facility (GEF) – for \$174.2 million. The Adaptation Fund also received \$160 million in new pledges, and the Green Climate Fund (GCF) received new contributions in the second replenishment cycle now totalling \$12.8 billion.

Further ongoing finance discussions included the New Collective Quantified Goal on Climate Finance (NCQG). Parties began preparations to establish a new global finance target beyond 2025. This will be an important policy area for mobilising climate finance in the coming year, especially considering that the previous commitment from developed countries for \$100 billion annually in climate finance is currently far below what was promised, with actual contributions at around \$10 billion annually.

**The Global Goal on Adaptation-** Negotiations on the Global Goal on Adaptation (GGA) focused on the application of a proposed new framework for monitoring and measuring progress on efforts around the world to adapt to the impacts of a changing climate, which has been under discussion through the Glasgow-Sharm El Sheikh Work Programme (GLaSS). Agreement on this framework for measurement was critical considering how difficult it is to standardise indicators and measure success around adaptation compared to the more straightforward targets of emissions reduction for mitigation. The final decision established a framework for achieving the GGA to ‘enhance adaptive capacity, strengthen resilience and reduce vulnerability to climate change in the context of the temperature goal of the Agreement’ established under the Paris Agreement. This framework includes measures to monitor and report on adaptation, as well as sectoral targets for 2030, including those related to health, water, and food supply. The text also recognises the importance of undertaking transformational adaptation that is informed by climate science and in line with the worldviews and values of Indigenous Peoples.

Despite the adoption of the framework, the final GGA text included only weak language on future finance commitments or how to monitor them. This will make it much more difficult for countries to ensure they can access the support needed to actually undertake transformational adaptation measures. While new financing was announced on adaptation for a few different Funds, this still falls far below what is needed to address the global adaptation finance gap in developing countries, which UNEP estimates in its 2023 Adaptation Gap Report ranges from \$215 billion to \$387 billion. Additionally, the ongoing need for more adaptation funding and potential for diplomatic pressure in this area was to some extent overshadowed by the early commitments to the new Loss and Damage Fund. Further discussions will continue on this finance component at COP29.

**Voluntary carbon markets (Article 6)**- In a disappointing outcome, Parties failed to adopt texts to progress markets under Articles 6.2 and 6.4 of the Paris Agreement. While the lack of progress on Article 6.2 will not prevent Parties from engaging in bilateral cooperation under Article 6.2 – and indeed a number of Article 6.2 agreements were signed on the sidelines of the conference – it does leave a degree of uncertainty on transparency, reporting and authorisation processes. Meanwhile, the absence of agreement on methodologies for Article 6.4 means that it will be at least another year before the crediting mechanism can operationalise. Outside of negotiations, COP28 saw political and business leaders support carbon markets as a key source of climate finance, and voluntary standards announced collaboration to bolster integrity and accountability in the voluntary market: hopefully, these efforts will help to steady what has been a volatile year for the voluntary carbon market. Negotiations continued around establishing a transparent framework for voluntary carbon markets under Articles 6 and 13 of the Paris Agreement, including one that avoids common problems with carbon offsetting, like double counting. While Article 6 debates also continued late into the evening of 12 December, many issues remained unresolved by the end of COP. Discussions on a supervisory body for carbon markets and on accounting for carbon credits were ultimately postponed for next year's agenda, leaving an ongoing vacuum in transparency and reporting in carbon markets.

**Green Pledge:** CoP 28 also has cleared a Global Renewables and Energy Efficiency Pledge, which aims to triple renewable-energy generation capacity by 2030 and calls for an end to new investments in coal- significantly India didn't sign on this.

**Health Pledge:** On the first Health Day at COP28, global leaders united in endorsing the health and climate change declaration, sounding the alarm on the severe health implications of climate change. India did not sign on to this either

**Fossil Fuel:** The role of fossil fuels is being hotly debated in the CoP- particularly as big consumers and big economies China and India are against any curtailment of its planned development- at present the final draft is stuck on using the term Phase-out vs Phase-down of fuel, as India had insisted in Glasgow CoP. India has also made it clear that cuts must be on all fossil fuel, not just Coal which it needs for thermal power- about 73% of Indian power generation is based on coal- and has indicated that Oil and Gas cuts must also be included.

**Beginning of the End-**COP28 concluded with an agreement marking the initiation of the end of the fossil fuel era. The agreement focuses on a prompt, fair, and just transition, emphasizing significant reductions in emissions and increased financial support. Nearly 200 participating Parties united in Dubai, showcasing global solidarity, and decided on the world's inaugural 'global stocktake' to enhance climate action by the decade's end. The primary objective remains maintaining the global temperature rise below 1.5°C. Simon Stiell, the UN Climate Change Executive Secretary, highlighted in the closing speech that while the transition from the fossil fuel era hasn't been completed, this agreement signifies the commencement of that process. Stiell

stressed the urgency for governments and businesses to translate these commitments into tangible real-world results promptly.

**Emissions intensive industries and a just transition-** Regardless of nuances in the GST decision text, the transition away from fossil fuels is critical. For businesses in emissions intensive sectors, building the concept of just transition into their decarbonisation strategies is important, and the decision on the just transition work program indicates the breadth of the considerations that firms should take into account when considering how they will support the transition not only of workers but also of communities in fossil-fuel dependent regions. Providing adequate and innovative financing and incentives to support the transition will pose challenges for Government. Meanwhile, we expect the newly established Net Zero Authority will have plenty of work to do in supporting just transition. For industries with material methane emissions, this conference saw a ramp up in global efforts to combat methane emissions.

**Carbon and biodiversity project developers-** While Article 6 negotiations stagnated at COP28, we saw much work to bolster integrity of international voluntary carbon markets and support demand for high integrity units. It remains to be seen whether a more successful outcome on Article 6 can be achieved by next year's conference, to provide much needed certainty for the future of these markets – particularly of Article 6.4. The recognition at the conference that there is no pathway to fully achieve the temperature goals of the Paris Agreement without addressing climate change, biodiversity loss and land degradation together in a coherent, synergistic and holistic manner can be expected to see momentum for biodiversity protection initiatives grow, and we expect to see the Federal Government to continue to progress its Nature Positive agenda as we head into 2024.

**Corporates-** Importantly, COP28 saw the official end of the work of the Task Force on Climate-related Financial Disclosures (**TCFD**). The ISSB's new standards on climate disclosure reflect the culmination of the work of the TCFD, and are set to be the global best practice benchmark going forward, and are set to soon form the basis of a mandatory climate reporting regime. Meanwhile, the release of the Voluntary Carbon Markets Integrity Initiative's supporting materials for its claims code of practice just ahead of COP provides a useful framework for corporates to consider their approaches to decarbonisation strategies and carbon credit procurement.

## **Conclusion:**

The outcomes of COP28, in combination with the plethora of declarations and initiatives across an array of sectors that we have seen over the past weeks, will give rise to a number of challenges and opportunities for Indian businesses as we look ahead to 2024. While it will take time to digest the details of the decisions and declaration, we see key takeaways for business. COP 28 showcased a significant turning point in global climate finance, marked by landmark funds and substantial commitments from influential nations. The conference emphasized the

indispensable role of accountability, reflected through transparent reporting mechanisms and commitments for future evaluation and acknowledgment of challenges. A pivotal shift was highlighted from discussing 'what' needs to be done to defining the 'how,' urging practical steps and immediate actions for accelerated global climate efforts. With the conclusion of the inaugural Global Stocktake, COP28 sets the stage for a new cycle within the Paris Agreement, propelled by actionable solutions aimed at halving emissions, bridging adaptation gaps, and fortifying resilience by 2030.

The event echoes a resounding call for transformational change, emphasizing initiatives, commitments, and shared responsibility, paving the way toward a sustainable, resilient future nurtured by global action. Ultimately, this year's COP included a number of high-level outcomes that could help drive more ambitious national policy in the transition away from fossil fuels, in climate finance contributions, and in support for adaptation. However, these measures came at a cost, with much of the actual language on follow-through in these areas watered down by many 'developed' and oil producing Parties.

Even where the UAE Presidency team initially pushed for stronger commitments – including in the language on fossil fuel phase-outs – the final decision text does not meet the goal of staying below 1.5°C. The process by the end of COP left many of the most vulnerable countries behind, especially when the COP President passed the decision text without allowing for comment, while the AOSIS bloc was not yet physically present in the room. While this COP has produced some significant steps forward, the lack of specific commitments and pervasive loopholes mean it will be up to the Parties themselves to decide the extent to which these high-level agreements are embedded in national policy and in revised NDC submissions.

## ARTICLES

### Air Pollution: The Silent Killer

Dr. Arvind Kumar\*

**A**ir pollution, stemming from the introduction of noxious agents such as gases, particles, and biological compounds, can inflict severe harm on the health and well-being of humans, animals, plants, and the natural surroundings. This pervasive concern, recognized as air pollution, stands as a foremost contributor to fatalities and illnesses on a worldwide scale, with a particularly profound impact in nations of lower and middle income where air quality standards are frequently breached. As per the World Air Quality Report 2023 India's capital, Delhi, ranks 4th as the most polluted city in the world after Chiang Mai (Thailand), Kathmandu (Nepal), and Shenyang (China). According to statistics from the World Health Organization (WHO), air pollution is responsible for an annual toll of seven million lives and subjects nine out of every ten people to elevated levels of harmful pollutants. Furthermore, the economic toll of air pollution is substantial, accounting for an annual cost of \$2.9 trillion or 3.3% of the global GDP.

Air pollution results from various primary sources, notably the combustion of fossil fuels like coal, oil, and gas for power generation, transportation, industrial activities, and household usage. In addition to these, emissions from factories, mines, and agricultural practices play a significant role in exacerbating air pollution. The burning of biomass, encompassing materials such as wood, crop residues, and animal excrement, for cooking and heating, further compounds the issue. Furthermore, improper waste disposal methods, such as the open burning of refuse and fires in landfills, introduce pollutants into the atmosphere. Lastly, natural events like volcanic eruptions, dust storms, and wildfires also contribute to the presence of pollutants in the air. Collectively, these sources release a spectrum of pollutants into the environment, including particulate matter (PM), ozone (O<sub>3</sub>), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), methane (CH<sub>4</sub>), and black carbon (BC).



#### Impact on Human Health and Environment

Image Source/Credit/Courtesy: India Today

A diverse array of deleterious consequences, both in terms of human health and the pristine natural environment, can be attributed to atmospheric contaminants. Notably, particulate matter (PM), composed of minuscule solid or liquid particles suspended in the atmosphere, possesses the remarkable capacity to profoundly infiltrate the pulmonary and circulatory systems, thereby

precipitating a spectrum of respiratory and cardiovascular afflictions, including asthma, chronic obstructive pulmonary disease (COPD), stroke, and lung carcinoma. Furthermore, PM exerts its detrimental influence by impeding optical clarity, inflicting damage upon agricultural crops, and actively contributing to the overarching concern of climate change. An equally compelling instance lies in the formation of ozone (O<sub>3</sub>), which arises as a consequence of the intricate interplay between nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs) when subjected to the radiant influence of sunlight. Ozone, a formidable protagonist among atmospheric pollutants, wields the potential to incite irritation in the sensory organs, namely the eyes, nose, and throat, thus exacerbating preexisting respiratory maladies such as asthma and bronchitis. Furthermore, O<sub>3</sub> stands guilty of perpetrating extensive harm to vegetation, curtailing agricultural yields, and rendering structural materials like rubber and plastics susceptible to degradation.

Moreover, as we delve into the realm of nitrogen oxides (NO<sub>x</sub>), primarily birthed from the combustion processes of vehicles and power plants, NO<sub>x</sub> reveals its role in aiding in the formation of both ozone (O<sub>3</sub>) and particulate matter (PM). NO<sub>x</sub>'s consequences extend further, orchestrating acid rain, a corrosive downpour capable of wreaking havoc upon aquatic ecosystems and defacing the structures of yore. In this atmospheric intrigue, NO<sub>x</sub>'s insidious influence takes a sinister turn as it infiltrates the human respiratory system, giving rise to inflammation and diminished lung function. Meanwhile, sulfur dioxide (SO<sub>2</sub>) emerges from the burning of coal and oil, joining forces with NO<sub>x</sub> in the formation of PM and acid rain. The plot thickens as SO<sub>2</sub> exercises its mysterious power over our respiratory faculties, inducing coughing,



wheezing, and breathless mysteries that haunt our existence. Not content with these sinister machinations, SO<sub>2</sub> extends its reach into the nervous system, unleashing headaches, nausea, and dizzying spells that baffle the mind. Carbon monoxide (CO) emanating predominantly from the cryptic recesses of incomplete combustion involving fossil fuels and biomass, CO takes its residence within the very blood, binding to

hemoglobin and obfuscating the delivery of life-sustaining oxygen to organs and tissues. The result: an array of afflictions, from headaches to inexplicable fatigue, drowsiness, and at the most the curtain of death itself. But CO's intrigue doesn't end there; it extends to the realm of the cardiovascular system, where it raises the specter of heart attacks and arrhythmias, adding another layer to this atmospheric enigma.

Moreover, the enigmatic presence of methane (CH<sub>4</sub>) beckons from the concealed recesses of natural reservoirs, like the mysterious realm of wetlands and the cryptic dominion of termites. It is also summoned forth by the enigmatic rituals of human activities, including the enigmatic machinations of agriculture and the enigmatic domains of landfills. The enigma deepens as we uncover CH<sub>4</sub>'s formidable credentials as a greenhouse gas, which unfurls a conundrum of staggering global significance. CH<sub>4</sub> assumes a pivotal role in the intricate drama of global



warming and the mysterious ballet of climate change. As we delve deeper into the enigma, CH<sub>4</sub> engages in enigmatic partnerships with other elusive pollutants, including the shadowy companions of nitrogen oxides (NO<sub>x</sub>) and ozone (O<sub>3</sub>), all of which conspire to influence the very alchemy of the atmosphere. This clandestine collaboration gives rise to a plethora of effects that cast a shroud of enigma over air quality, leading us down a labyrinthine path of uncertainty.

Image Courtesy/Credit/Source: The Hindu

In this enigmatic odyssey through the atmospheric enigma, we encounter yet another enigmatic character, known as black carbon (BC). Emerging primarily from the arcane realms of incomplete combustion, where fossil fuels and biomass smolder in perplexing unity, BC steps into the limelight as a cryptic component of particulate matter (PM). It possesses an enigmatic faculty to ensnare the sun's radiant energy, weaving a spell that warms the very fabric of the atmosphere while nudging the global thermostat toward an uncertain destiny. But the enigma persists, for BC's influence extends into the cryptic terrain of human health, where it wraps its enigmatic tendrils around the respiratory and cardiovascular systems, casting an ambiguous cloak over the eyes and skin. In this intricate expedition through the labyrinth of the atmosphere's shadowy corridors, we find ourselves entangled in an enigmatic web of mystery, with more questions than answers, as the enigmatic interactions of these elements continue to perplex and beguile.

### **Air Pollution in India**

India, home to 21 out of the 30 most polluted cities worldwide, stands as one of the highly polluted nations. The State of Global Air 2020 report reveals that in 2019, air pollution claimed the lives of 1.67 million individuals in India, constituting 18% of the nation's total fatalities. Furthermore, the economic toll of air pollution amounted to \$36.8 billion, equivalent to 1.36% of India's GDP in the same year. Several factors contribute to the alarming levels of air pollution in India.

The swift growth of urban areas and the intensification of industrial activities have raised the need for energy and transportation. Consequently, there has been a proliferation of coal-fired power plants, factories, mines, and vehicles, releasing substantial quantities of pollutants into the atmosphere. Furthermore, the extensive adoption of biomass resources, like wood, crop residues, and animal dung, for culinary purposes and warmth, particularly in rural regions, contributes to approximately one-third of particulate matter (PM) pollution in the Indo-Gangetic Plain. This practice exposes millions of individuals, particularly women and children, to elevated levels of indoor air pollution.

Agricultural practices, particularly the burning of crop residues concentrated in states like Punjab and Haryana, generate substantial amounts of smoke and ash, significantly impacting air quality in neighboring areas such as Delhi and the National Capital Region (NCR). Inadequate waste management, including the open incineration of garbage and landfill fires, releases noxious gases

and particles into the atmosphere, posing a menacing hazard to the well-being and security of residents in close proximity. Moreover, natural occurrences like dust storms and wildfires, coupled with specific meteorological conditions such as low wind speeds, high humidity, and temperature inversion, have the capacity to confine pollutants close to ground level, further exacerbating the deteriorating state of air quality.

Delhi, renowned for its exceptionally high annual average PM 2.5 concentration of 98.6  $\mu\text{g}/\text{m}^3$ , surpasses the WHO guideline of 10  $\mu\text{g}/\text{m}^3$  by nearly tenfold. Additionally, Delhi experiences severe smog episodes, particularly in the winter season, due to the combined effects of neighboring states' crop burning, escalated utilization of biomass and coal for heating, and unfavorable weather conditions. Consequently, an alarming amalgamation of pollutants contaminates the air in the city.

Uttar Pradesh, home to 14 out of the 20 most polluted cities in the nation, as reported by the IQAir AirVisual 2019 World Air Quality Report<sup>7</sup>, also bears the unfortunate distinction of having the highest recorded number of deaths caused by air pollution in the country. In 2019 alone, the state witnessed a staggering 350,000 fatalities attributed to this environmental hazard<sup>4</sup>. The sources of air pollution in Uttar Pradesh are diverse and include industries, vehicles, power plants, brick kilns, biomass burning, and waste disposal.



Bihar, known for having four of the country's top 10 most polluted cities, as reported by the IQAir AirVisual 2019 World Air Quality Report<sup>7</sup>, also experiences the second highest number of deaths caused by air pollution in the nation, with a staggering 197,000 fatalities in 2019. The state of

Bihar is impacted by a combination of local and regional factors contributing to air pollution, including vehicular emissions, industrial activities, power plants, agricultural and biomass burning, as well as dust storms.

In India, air pollution is an annual reiteration, primarily stemming from the insufficient enforcement of emissions control measures across various sources and the absence of a comprehensive, all-encompassing strategy to address the transboundary nature of this challenge.

### **Tackling the Air Pollution Crisis**

Considering the enormity of the air pollution crisis, it's worth contemplating some potential solutions to address this issue in India. By implementing the National Clean Air Programme (NCAP) with the goal of achieving a 20-30% reduction in PM 2.5 and PM 10 concentrations by 2024, compared to the 2017 levels, across 122 non-attainment cities, and this will be achieved through city-specific action plans, robust monitoring networks, awareness campaigns, and capacity building. Simultaneously, promoting and funding clean and renewable energy sources

such as solar, wind, and hydro, while phasing out coal-fired power plants, which serve as the primary contributors to both greenhouse gas emissions and air pollution in India.

Besides, appropriate measures need to be taken to improve the public transportation system, encouraging the use of electric and hybrid vehicles, bicycles, and other eco-friendly modes of transport, and imposing stricter emission standards and fuel quality norms for the vehicles on the road. Additionally, to discourage the burning of crop residues, farmers can be encouraged to explore alternative methods such as utilizing the residues for bioenergy, composting, or mulching. Additionally, adopting conservation agriculture practices like no-till farming, crop rotation, and cover crops can also be helpful. Another approach is to improve the accessibility and affordability of clean cooking fuels and technologies like LPG, biogas, and improved cook stoves. This can help reduce the dependence on biomass, which is the primary source of household air pollution in India.

Furthermore, it is equally important to enhance the waste management system, encourage the sorting, reusing, and decomposing of waste, and prohibit the incineration of trash and landfill fires, which are the primary causes of hazardous pollutants like dioxins and furans in the atmosphere along with establishing and executing clean air action plans at the state and regional levels that consider the sources and effects of air pollution throughout the air shed and require the collaboration and coordination of multiple stakeholders, including governments, businesses, civil society, and individuals.

## **Way Forward**

Air pollution poses a stealthy menace, imperiling the health of numerous individuals and the global environment. This issue, both in India and worldwide, demands immediate and resolute action to curtail the release of noxious pollutants and enhance the quality of the air we breathe. India must actively partake in international and regional endeavors and organizations, including the Paris Agreement, the Climate and Clean Air Coalition, the South Asian Association for Regional Cooperation, and the World Health Organization. By engaging in these forums, India can foster the exchange of best practices, the sharing of vital data and information, the mobilization of resources, and the coordination of efforts aimed at tackling the shared challenges of air pollution and climate change. Furthermore, India should adopt and champion the adoption of cutting-edge, cost-effective technologies. These tools, such as satellite-based monitoring, low-cost sensors, artificial intelligence, big data analytics, and blockchain, will empower the measurement, tracking, reporting, and verification of air pollution emissions and impacts. Additionally, they will furnish timely and precise feedback and guidance to policymakers and the general public.

In India, it is crucial to enhance the understanding and capabilities of various stakeholders, including government bodies, industries, civil society, and the general public, regarding the origins and repercussions of air pollution. It is imperative that these stakeholders not only

comprehend the root causes but also adhere to pertinent policies, regulations, standards, and incentivizing mechanisms aimed at curtailing emissions and minimizing exposure to pollutants, ultimately leading to the enhancement of air quality. Furthermore, India should undertake additional measures, encompassing improved urban planning and design, the promotion of environmentally friendly and circular economic practices, bolstering environmental governance and accountability, and reinforcing research and development efforts. These actions will address the fundamental causes and drivers of air pollution while concurrently fostering sustainable and health-oriented development.

**\*President, India Water Foundation**

# Shaping Tomorrow's Cities: A Blueprint for Sustainable Urbanization

**Mr. Hitesh Vaidya\***

**A**s humanity propels itself into an era dominated by urbanisation, we find ourselves at a pivotal moment in history, compelled to re-imagine cities not as mere concrete jungles but as vibrant, evolving entities with a shared aspiration for a superior future. In this transformative age, the concept of a "Nature Positive City" has materialised, emphasising the intricate equilibrium among human advancement, economic well-being, and environmental concord as not merely aspirational but imperative.

In this era of heightened environmental consciousness, the narrative revolves around cities as physical entities and dynamic ecosystems competing globally. Therefore, the interplay between planning ecosystems is more pivotal than ever. Cities of tomorrow must prioritise economic resilience and inclusivity and serve as beacons of environmental stewardship. Integrating sustainable practices into urban planning is no longer an option but a fundamental necessity for the well-being of current and future generations. As we shape tomorrow's cities, the commitment to environmental sustainability is a cornerstone, ensuring that our urban landscapes thrive harmoniously with the natural world.

An unwavering commitment to sustainability is at the core of shaping the cities of tomorrow. Cities increasingly strive to adopt environmentally conscious practices, incorporating eco-friendly infrastructure, renewable energy solutions, green spaces, energy-efficient buildings, and sustainable transportation systems. Striking the right balance between sustainability, inclusivity, and economic resilience is paramount to creating flourishing cities while offering residents a high quality of life. These three pillars are interconnected and pivotal to realising the transformative agenda set forth by the Sustainable Development Goals (SDGs) and the New Urban Agenda (NUA).

India has proactively shaped the NUA, presenting its vision and action plan through a comprehensive country report. The India National Habitat III Report outlines ten critical national drivers shaping urban development. Ambitious urban missions and historic policy initiatives launched during the Habitat III process contributed to infrastructure development and enhanced the urban governance ecosystem. India outlines its vision and action plan through the National Habitat III Report, contributing to global discussions. The G20 presidency and the U20 summit emphasised critical areas for reimagining cities, including sustainability, inclusivity, economic viability, and data and digitisation as tools for speed and scale. The opportunity to revisit and enhance our urban landscapes presented itself during India's G20 presidency and the U20

summit, where city leaders from 105 cities across G20 nations discussed the following critical areas for reimagining towns for a better future.

1. **Reimagining Cities as a Trilogy of Sustainability, Inclusivity, and Economic Viability:** City leaders recognised the importance of viewing urban development through the lens of sustainability, inclusivity, and economic viability. The notion of a trilogy emphasised the interconnectedness of these three pillars, where a balance must be struck to ensure cities thrive in the long run.
2. **Data and Digitization as Tools for Speed and Scale:** In the digital age, harnessing the power of data and digitisation emerged as critical tools for accelerating and scaling up urban development initiatives. Innovative city technologies, data analytics, and digital platforms were essential to enhance efficiency, transparency, and overall governance.
3. **Behavior Change – Individual and Institutional:** Creating livable cities necessitates shifting individual and institutional behaviour. Citizens and organisations must embrace sustainable practices, while institutions must adopt policies prioritising the well-being of residents and the environment. Behavioural change became a cornerstone for building resilient and adaptable urban communities.
4. **Culture as a Catalyst for Economic Development:** Recognizing the unique cultural identity of each city, leaders emphasised leveraging local culture as a catalyst for economic development. By integrating cultural assets into urban planning, cities can preserve their identity and stimulate economic growth through tourism and creative industries.
5. **Resilience in Infrastructure and Development Finance:** Resilience emerged as a critical factor in infrastructure and development finance. City leaders stressed the importance of building a robust infrastructure capable of withstanding shocks, whether health crises, natural disasters, or economic downturns. Additionally, a thorough overhaul of development finance models was proposed to ensure sustainability and adaptability.

## **Converting Aspirations to Action**

The evolution of urban landscapes necessitates a strategic approach that integrates diverse policies, aligns governmental tiers, and embraces cooperative federalism. It is imperative to conceptualise the city not merely as a physical entity but as a dynamic spatial unit, where planning involves seamless integration and strategies harmonising with national and state policies. The consensus is clear: urban science is a pivotal force in creating livable cities, ensuring unbiased access to resources, safeguarding cultural heritage, and championing environmental sustainability. Recognising that ecological, social, and economic challenges are interlinked, our urban policies must adopt an integrated approach that addresses these facets holistically. By embracing energy efficiency principles, utilising sustainable materials, facilitating eco-friendly mobility alternatives, and promoting responsible consumption, urban

spaces can become catalysts for positive change. The integration of scientific insights amplifies the sustainability quotient in urban planning. However, it is crucial to understand that borders do not confine urban sustainability; collaborative efforts worldwide are required. Applying this principle to our urban landscapes necessitates policies and practices prioritising inclusivity, ensuring that sustainability benefits reach all communities, regardless of socio-economic status. Together, they compose the blueprint for urban development that not only addresses the challenges of today but also paves the way for a harmonious and prosperous future.

1. **Citizens:** Cities, at their core, are not just conglomerations of structures; they are dynamic communities where people live, work, and thrive. Planning, then, must be a tool that enhances the quality of life for all citizens, fostering inclusivity and resilience. The citizens are not passive recipients of urban development but active contributors and stakeholders. In this interconnected era, where information flows freely and communities are more engaged than ever, planning becomes a collaborative endeavour that reflects the collective aspirations of the people. Defining and measuring success in urban development projects is crucial. Establishing clear metrics enables city leaders to track progress, identify areas for improvement, and ensure that their initiatives align with the broader goals of sustainability and livability. Engaging communities, fostering government-community relationships, and collaborating within the quadruple helix create a web of connectivity that propels growth.
2. **Data:** Cities worldwide aspire to position themselves as competitive destinations. Quality of life and ease of business are prerequisites for attracting talent, businesses, and investments. The advancement of urban planning is intricately linked to the evolving science of urban evolution. Evidence-based planning is a cornerstone driven by empirical data and rigorous research. The ability to decipher patterns, predict future trends, and make informed decisions based on scientific evidence distinguishes modern urban planning. It helps connect cities to citizens and create spaces that are accessible, inclusive, and reflective of the diverse identities that make up urban populations. It involves understanding the unique character of each city and leveraging its unique selling points (USPs) to enhance the overall urban experience. This scientific approach allows planners to navigate the complexities of urban development, foresee challenges, and devise solutions grounded in robust analysis to deploy flexible systems of planning, governance, and service delivery to maximise community benefits.
3. **Nature:** A profound connection to nature lies at the heart of urban planning. Recognising the delicate balance between urbanisation and the environment is paramount. The call for sustainability, as highlighted earlier, underscores the importance of integrating nature into the very fabric of city planning. Green spaces, renewable energy solutions, and ecological considerations become not just features but integral elements that nurture a symbiotic relationship between the urban and the natural.

4. **Governance:** Empowered cities are not dictated by external forces. They wield administrative and financial control, shaping their destinies in alignment with the aspirations of their residents. Planning for the future demands foresight, adaptability, and the ability to envision the long-term consequences of present decisions. The delicate art of visionary city planning lies in balancing immediate needs with sustainable, future-oriented solutions. Thus, delineating roles, responsibilities, explicit mandates, and authorities, including financial powers, are essential. Decentralised models and empowered local bodies emerge as critical factors to drive initiatives at the regional level. Recognising that "Who" is as significant as "How" and "What" in the planning process becomes paramount.
5. **Skilling and Reskilling:** The science of urban planning relies on a foundation of knowledge encompassing diverse fields such as architecture, sociology, economics, and environmental science. Informed decision-making stems from a comprehensive understanding of the intricacies of urban systems. Moreover, knowledge extends beyond mere data; it encompasses the wisdom to interpret information, foresee trends, and make choices that align with the broader goals of sustainability, inclusivity, and economic resilience. Therefore, the workforce involved in urban development must acquire new skills to keep pace with evolving technologies and approaches. Skilling and reskilling programs are essential to equip professionals with the tools to implement innovative urban solutions. By sharing experiences and knowledge, cities can avoid reinventing the wheel and accelerate progress toward common goals. Learning from global best practices and fostering collaboration between towns are vital to successful urban planning.
6. **Innovations and Collaborations:** The complexity of urban challenges requires a nuanced understanding that transcends individual expertise. No single entity possesses absolute knowledge, and therein lies the significance of partnerships and collaborations. Collaboration becomes the linchpin for practical solutions in urban planning, where the considerations span environmental sustainability, economic resilience, social inclusivity, and more. Bringing together diverse perspectives, skills, and experiences fosters a collective intelligence more significant than the sum of its parts. Leveraging technology enhances efficiency and fosters an environment of continuous innovation. Urban challenges often extend beyond municipal or national borders. Collaborations at regional, national, and even global levels become essential to address issues like climate change, migration, and the equitable distribution of resources. Shared knowledge and innovation should become a constant driving force to empower cities to learn from each other's successes and challenges, accelerating the development of effective and sustainable urban solutions. Partnerships will be the catalyst for driving investments and translating development visions into reality.



7. **Action:** Spatial thinking encourages a holistic approach to urban planning, considering the interconnectedness of form, time, scale, and agency. In the dynamic urban planning arena, action catalyses transformation. The result is significant, as it becomes the defining factor for the entire process. Prioritising outcomes and outputs encompass the practical implementation of policies, the development of infrastructure, and the execution of plans that shape cities' physical and social landscapes. Meaningful action is not confined to the bureaucratic realm; it involves engaging communities, fostering collaboration, and empowering citizens to participate actively in the evolution of their urban environment.

Crafting and governance of livable cities demand a nuanced and comprehensive approach. As we navigate the transformative landscape of urbanisation, these guiding principles compose the blueprint for urban development, ensuring cities endure the test of time and not only compete but also lead in the journey towards a sustainable, prosperous future to meet the evolving demands of a dynamic world.

\*Hitesh Vaidya, Former Director, National Institute of Urban Affairs and Country Representative, UN-Habitat, India

# Water Ethics: Guiding Principles for Sustainable Management

Mr. Mahendra Mehta\*

## Introduction

**W**ater ethics play a crucial role in sustainable water resources management, as professionals must navigate complex challenges to ensure equitable access, ecological integrity, and long-term sustainability. This article explores the concept of water ethics and presents key principles that guide professionals in making informed decisions and implementing sustainable practices.



## Ethics Understanding Water

Water ethics is a branch of environmental ethics focused on the moral and philosophical dimensions of water management. It recognizes water's inherent value and advocates for its equitable distribution, responsible use, and protection. Water ethics emphasizes the interdependence of human societies and the environment, acknowledging water as a common heritage shared by all beings and ecosystems.

## Key Principles of Water Ethics

- 1. Respect for Water:** Professionals in water resources management should recognize and respect the intrinsic value of water, considering it as a common heritage that deserves protection and preservation.
- 2. Equity and Justice:** Water ethics emphasize equitable access to water, addressing the needs of present and future generations as well as marginalized communities disproportionately affected by water scarcity.
- 3. Sustainability:** Professionals should adopt an integrated approach that balances social, economic, and environmental factors to meet current water needs without compromising future generations' ability to meet their own needs.
- 4. Participation and Engagement:** Inclusive and participatory processes engage local communities, indigenous peoples, and relevant stakeholders, leading to informed, transparent, and socially just outcomes.

**5. Ecosystem Protection:** Professionals should prioritize the ecological integrity of water bodies, ensuring the preservation and restoration of healthy aquatic ecosystems that support biodiversity and sustain water resources.

**6. Watershed Approach:** A holistic watershed-based approach recognizes the interconnectivity of water systems, considering the entire hydrological cycle, upstream-downstream interactions, water quality, and ecosystem health.

**7. Efficiency and Conservation:** Promoting efficient water use and conservation practices addresses the growing demand for water. This includes advocating for water-efficient technologies, incentivizing conservation measures, and raising awareness about responsible water use.

### **Challenges and Implementation**

Implementing water ethics faces challenges such as conflicting interests, institutional barriers, and resource limitations. Professionals can overcome these challenges by integrating water ethics principles into policy frameworks, adopting adaptive management strategies, and fostering collaboration among stakeholders.

To integrate water ethics, professionals must advocate for robust water policies and regulations that prioritize sustainability and equity. This involves establishing water rights, implementing water quality standards, and monitoring and enforcing compliance. Adaptive management enables professionals to respond effectively to uncertainties and complex water management issues by continuously learning, adjusting, and engaging stakeholders in ongoing dialogue.

Collaboration and partnerships among governments, NGOs, communities, and the private sector are essential for successful water management. Professionals should foster cooperation, knowledge-sharing, and capacity-building initiatives to enhance understanding of water ethics and achieve sustainable solutions.

### **Conclusion**

Water ethics provide a guiding framework for professionals in water resources management to make socially just, environmentally sustainable, and economically viable decisions. By embracing principles such as respect for water, equity, sustainability, and ecosystem protection, professionals contribute to the wise stewardship of water resources. Overcoming challenges and implementing water ethics require inclusive participation, adaptive management, and collaboration. As professionals, it is our responsibility to ensure the ethical management of water resources, valuing, protecting, and equitably sharing water for present and future generations.

*\*Principal Advisor IWF Australia Chapter (Former Commissioner (GW), Ministry of Water Resources, Government of India)*

# **Bridging the Gender Gap in Cyber-security**

Kavita Prasad\*

## **Introduction**

Gender diversity and inclusion are crucial in all industries, and in this rapidly evolving digital landscape, cyber security has become an integral part of our lives. However, the field of cyber security continues to face a significant gender gap. The gender gap in cyber security is a pressing issue that needs to be addressed. Women are significantly underrepresented in this field, which not only leads to a lack of diversity but also hinders the overall progress and effectiveness of the industry.

As technology progresses, so do the cyber threats in the rapidly growing AI world. However, one concerning trend persists - the gender gap in cyber-security, also women and girls continue to face GBV or cyber harassment and are underrepresented in this field. This article aims to shed light on this issue and explore the efforts made to bridge the gender gap in cyber-security. We will explore the reasons behind this gender gap and discuss the advantages of bridging it to create a more inclusive and effective cyber-security community. We will also highlight the impact of policy reforms in promoting gender equality in the field.

## **Lack of Female Representation in Cyber Security**

The lack of female representation in cyber security is evident from the low percentage of women in the industry. According to a report by the International Information System Security Certification Consortium (ISC2), women represent only about 24% of the global cyber-security workforce. This imbalance not only restricts the talent pool but also limits the perspectives and insights that women can bring to the table.

## **Stereotypes and Societal Barriers**

One of the main reasons for the gender gap in cyber security is the prevalence of stereotypes and societal barriers. From an early age, girls are often discouraged from pursuing careers in technology and are steered towards more traditionally feminine roles. This discouragement, combined with societal biases that often perceive cyber security as a male-dominated industry and stereotypes, creates a barrier and discourages women to participate and lead the field.

"The underrepresentation of women in cyber security is not due to their abilities or competence, but rather the result of deeply ingrained stereotypes." - Osama Manzar

## **Lack of Role Models and Mentors**

Another significant factor contributing to the gender gap in cyber security is the lack of visible role models and mentors. Without female professionals to look up to or guide them, women may

feel isolated and discouraged from pursuing a career in this industry. Additionally, the absence of mentorship opportunities hinders their professional growth and development.

### **Gender-based violence (GBV or Cyber Harassment against Women and marginalized groups)**

Cyber harassment is a pervasive issue that affects millions of women and girls worldwide. From online stalking to revenge porn, the consequences of these acts can have severe emotional, physiological, social and psychological impacts. Furthermore, the fear of cyber harassment often discourages many women and girls from pursuing careers in technology and cyber-security. Information technology has allowed Gender-Based Violence to take new forms. This includes cyber-stalking, online harassment, sexting, gender trolling, accessing private data through hacking and sharing intimate images, videos or audio clips online without consent. It is essential to address this issue to create a safe and inclusive environment for all.

### **The Importance of Bridging the Gender Gap**

Bridging the gender gap in cyber security is not just a matter of equality; it is essential for the progress and effectiveness of the industry. The significant gender gap or social exclusion not only hinders diversity but also limits the potential for innovation and problem-solving. Bridging the gender gap in cyber-security is crucial for several reasons.

Firstly, it ensures a more inclusive workforce that reflects the diverse perspectives and experiences of society as a whole. This diversity brings fresh ideas and approaches to tackling cyber threats, ultimately strengthening our collective security. Secondly, increasing the participation of women and marginalized groups in cyber-security can help address the severe shortage of skilled professionals in this field. With cyber threats becoming increasingly sophisticated and prevalent, we need all hands on deck to protect our digital infrastructure. Furthermore, empowering women and marginalized groups in cyber-security can serve as an inspiration for future generations. By showcasing successful role models who have excelled in this field despite societal barriers, we can encourage young individuals to pursue careers in cyber-security.

To bridge the gender gap in cyber-security, it is essential to provide equal opportunities for education and training. Encouraging girls from an early age to explore STEM subjects can help break down stereotypes and build their confidence in pursuing careers in fields like cyber-security. Additionally, creating supportive environments within organizations is crucial. Companies should actively promote diversity and inclusion initiatives that foster an inclusive culture where everyone feels valued and empowered to contribute their unique perspectives. Various social surveys are evident for the relationship between offline and online violence. The crime of abuse and violence including cyber violence, are deeply rooted, the social inequalities and gender issues imbalances that exist offline and are mirrored online. A UK study of cyber

stalking found that over half (54%) of the cases involved a first encounter in a real-world situation, separating cyber attacks from violence in ‘real life’ fails to see the bigger picture.

Bridging the gender gap in cyber security is not only a matter of diversity and inclusion but also a strategic imperative. Research has shown that diverse teams are more effective at problem-solving and innovation. By encouraging more women and marginalized individuals to pursue careers in cyber security, we can tap into a wider range of perspectives, skills, and experiences.

### **Diverse Perspectives and Solutions**

Diversity in any field, including cyber security, brings with it a wide range of perspectives and ideas. By including more women in the industry, we can tap into their unique insights and experiences, leading to more innovative and effective solutions to combat cyber threats.

### **Enhanced Problem-Solving and Risk Management**

Research has shown that diverse teams are more successful at problem-solving and risk management. By bridging the gender gap, we can create a more inclusive environment where a variety of voices are heard, thus improving the overall resilience and adaptability of the cyber security community.

### **Encouraging Young Talent and Closing the Skills Gap**

To continue advancing in cyber security, it is essential to encourage young talent, regardless of gender, to pursue careers in this field. By bridging the gender gap and creating a more inclusive environment, we can attract a wider pool of talent and close the skills gap that currently exists.

### **Steps to Bridge the Gender Gap**

Addressing the gender gap in cyber security requires concerted efforts from various stakeholders, including organizations, educational institutions, and society as a whole.

### **Promoting STEM Education for Girls**

To bridge the gender gap, we need to start at a young age by promoting STEM (Science, Technology, Engineering, and Mathematics) education for girls. This can be achieved by providing equal opportunities, offering mentorship programs, and showcasing successful female role models in the technology and cyber security fields.

### **Creating Inclusive Work Environments**

Organizations must work towards creating inclusive work environments that promote diversity and provide equal opportunities for all employees. This involves implementing policies and practices that support gender equality, offering mentorship and leadership development programs, and fostering a culture of inclusivity and respect. It is a social and moral responsibility

to create safe online space for women and girls. Social media platforms and online communities should take a proactive approach to combating harassment and ensuring user safety.

### **Women empowerment in cyber security**

It is crucial to actively encourage and support women who are presently interested in cyber security as a career. This can be done through encouraging diverse hiring practices, creating equal opportunities, a safe and healthy environment, scholarships, internships, and networking with educational institutions and/or civil societies. By providing resources and guidance, we can empower women to break through the barriers and excel in the field of cyber security.

### **The participation of Women in the GC3B conference**

The Global Cyber security Capacity Centre (GC3B) conference serves as a platform for cyber security experts to come together and address the challenges in the field. The board brings together global leaders, policymakers, and experts to discuss ways to strengthen cyber security and bridge the gender divide. By highlighting the importance of gender equality in cyber security, the GC3B conference helps raise awareness and encourages collaborative efforts towards change. One of the pressing issues discussed in these conferences is the gender gap present in the industry. While the number of women participating in GC3B conferences has increased over the years, there is still a significant underrepresentation of women in the field. The GC3B Conference Framework aims to tackle the gender gap in cyber security.

### **Policy reforms and their impact**

To address the gender gap in cyber security, policy reforms play a crucial role. One such example is the implementation of gender equality initiatives by organizations and governments. These initiatives aim to promote and support the inclusion of women in the field. A key policy reform is the establishment of scholarships and grants specifically designed to encourage women to pursue education and careers in cyber security. These financial incentives help break down economic barriers that often deter women from entering the field. By providing equal opportunities for women, policy reforms contribute to levelling the playing field and bridging the gender gap.

Additionally, policy reforms can introduce diversity quotas for boards and leadership positions in cyber security organizations. This ensures that women have a seat at the decision-making table, allowing their perspectives to be heard and considered. By diversifying leadership roles, organizations can benefit from a broader range of ideas and solutions, leading to better overall outcomes.

### **Fostering a supportive environment**

Creating a supportive environment is essential to encourage more women to pursue careers in cyber security. This includes addressing the unconscious biases that exist within the industry and

promoting inclusive policies and practices. Mentorship programs are highly effective in supporting women in cyber security. These programs pair experienced professionals with aspiring individuals, providing guidance, support, and valuable insights. Through mentorship, women can gain confidence, learn from the experiences of their mentors, and network with other professionals in the field. Organizations, civil societies and educational institutions can also play a significant role by fostering a culture of inclusivity. This involves encouraging equal opportunities, promoting work-life balance, and providing support systems that promote career growth for women in cyber security.

## **Conclusion**

Bridging the gender gap and skill gap in cyber security is crucial for the advancement of the industry as a whole. Efforts to increase the participation of women in conferences like GC3B are a step in the right direction. Policy reforms that promote gender equality and create equal opportunities help level the playing field and encourage more women to pursue careers in cyber security.

However, it is vital to go beyond conference participation and policy reforms. Organizations, governments, civil societies and individuals need to actively foster a supportive environment that encourages women to enter and thrive in the field. By addressing unconscious biases, offering mentorship programs, and creating inclusive cultures, we can bridge the gender gap and unlock the full potential of women in cyber security.

In conclusion, ***“bridging the gender gap in cyber security is not just about achieving equality; it's about harnessing untapped talent, driving innovation, and strengthening our defences against cyber threats.”***

By empowering women and marginalized groups within this sector, we can create a more secure digital landscape for all. The field of cyber security has seen significant growth in recent years, with the increasing reliance on digital technologies and the rise in cyber threats. However, one area that still requires attention is the gender gap within this sector. Women and marginalized groups continue to be underrepresented in cyber security roles, despite their potential contributions. This includes providing targeted training initiatives or capacity building by raising awareness about the importance of diversity in cyber security through campaigns and events that can help challenge stereotypes and attract more individuals from underrepresented backgrounds.

By actively promoting gender equality within the cyber security sector, we can ensure that our digital infrastructure is protected by a diverse workforce equipped with different perspectives and approaches. Gender-sensitive behaviour matters in international cyber security. Bridging the gender gap helps to define and impact our online behaviour; It helps to determine access and influence power; and It is a factor that underlines vulnerability.



By understanding the challenges women and girls face in this field or due to Gender Based Violence GBV, we can take steps towards bridging the gap as malicious cyber operations can differently impact vulnerable groups and raise cyber crime. Let us work together to ensure digital equality to bridge the gender gap in cyber security for a safer world.

**Ms. Kavita Prasad, Sr. Consultant (IWF)**

## ARTICLE PUBLISHED

### **Harnessing Water Use Efficiency Through Transversality Systemic Approach (Published In ICID)**



In the past, the main force behind the demand for food has been the growth of the population. However, with a slowdown in global population growth rates, other factors like increasing per capita income and individual food consumption are now gaining more importance in influencing the global demand for food. As of the first quarter of 2023, the world's population has reached 8 billion, and projections indicate that it is expected to further increase to 9.2 billion by the year 2050. This marks a progression from the global population of 7.6 billion in 2018, which grew to 8 billion by the closing part of the first quarter of (Figure) 2023.....Read more [https://www.focusglobalreporter.org/wp-content/uploads/2024/02/ArvindKumar\\_icid-article.pdf](https://www.focusglobalreporter.org/wp-content/uploads/2024/02/ArvindKumar_icid-article.pdf)

### **Promises And Perils of Climate Negotiations (Published In Law Street Journal)**

In the past three decades, the United Nations has sponsored 28 annual climate summits. But that process has failed to provide a legally binding path to significant carbon emission reductions or to the phase out of fossil fuels responsible for the climate crisis. The just concluded COP28 summit, held in Dubai and largely controlled by fossil fuel interests, has pledged “transitioning away from fossil fuels” but that deal is also voluntary. Now, with the world on track for catastrophic global warming, litigation is increasingly being used to force governments to fossil fuels and enforce existing laws.....Read more <https://lawstreet.co/environment/promises-and-perils-of-climate-negotiations/>

### **India Water Foundation President, Dr. Arvind Kumar, Advocates for Sustainable Water Access at 54th UNHRC Session (Published In Law Street Journal)**

Right to Water is not a privilege it is a basic human right and for the first time in its history, the United Nations has recognized that everyone, everywhere, has the right to live in a safe, clean, healthy and sustainable environment including clean air, safe and sufficient water, healthy and

sustainably produced food, non-toxic environments, healthy ecosystems and biodiversity and a safe, livable climate. With the urgent global challenges posed by environmental degradation and the triple planetary crisis of climate change, pollution, and nature and biodiversity loss, the question .....Read more <https://lawstreet.co/environment/india-water-foundation-president-dr-arvind-kumar-advocates-for-sustainable-water-access-at-54th-unhrc-session>

## Blue Economy for Food And Livelihood Security (Published In Law Street Journal)

NEW DELHI: Every individual not only has the right to feed themselves and their family in dignity, but also has the responsibility to do everything within their power to do so.

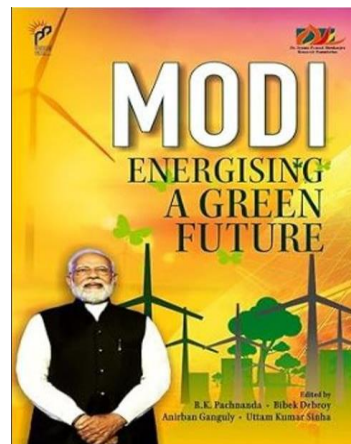


This means the every person must have access to resources and the freedom to exercise their human rights and responsibilities. Last year, 735 million people went hungry. More than 3 billion cannot afford a healthy diet proving that we are going backward on our goal of zero hunger by 2030. States are obliged to develop, individually and

through international cooperation, a range of measures of production, conservation and distribution of food to ensure that everyone is able to access enough food to be free from hunger and malnutrition. ....Read more <https://lawstreet.co/environment/blue-economy-for-food-and-livelihood-security>

## India's Pursuit of Energy Security: Potentials and Prospects

The publication titled Modi : Energising A Green Future was formally released on 8th January 2024 at India International Centre by Sh. Bhupendra Singh Yadav, Union Cabinet Minister of Environment Forests and Climate Change, Government of India. It has been edited by Sh. Anirban Ganguly, Chairman, Shyama Prasad Mukherjee Research Foundation, Sh. Bibek Debroy, Chairman , Economic Advisory Council to the Prime Minister, Sh. Ranjit Pachnanda, former Chairman, Haryana State Electricity regulatory Board and Sh. Uttam Sinha, Senior Fellow, Manohar Parrikar Institute for Defense Studies.



I am extremely grateful to all the editors for giving me an opportunity to contribute to this milestone publication. This publication highlights how Climate Change and energy security are interconnected and are two sides of the same coin. India has shown the world what it takes to be a climate leader. This volume presents a well-integrated collection of chapters from distinguished decision-makers, influential opinion makers, and

eminent experts creating in the process a synergy of views supporting India`s transition to affordable and sustainable energy that not only reduces emissions, but spurs economic growth and promotes sustainable climate investments. Please get your copy now by clicking on

[https://www.amazon.in/Modi-Energising-Green-Future-Pachnanda/dp/9390095875/ref=sr\\_1\\_8?qid=1692692532&refinements=p\\_27%3AUttam%20Kumar%20Sinha&s=b ooks&sr=1-8&fbclid=IwAR3cjRraCLG7jj9Li\\_ljvaBpGfynk0ScgmpdvLv47ZZst9ZDXNq0nNalVk0](https://www.amazon.in/Modi-Energising-Green-Future-Pachnanda/dp/9390095875/ref=sr_1_8?qid=1692692532&refinements=p_27%3AUttam%20Kumar%20Sinha&s=b ooks&sr=1-8&fbclid=IwAR3cjRraCLG7jj9Li_ljvaBpGfynk0ScgmpdvLv47ZZst9ZDXNq0nNalVk0)

## MEETINGS:

### Meeting with the President of the World Bank

At COP 28 Dr. Arvind Kumar, President, India Water Foundation had a wonderful opportunity to meet and have a fruitful discussion with Mr. Ajay Banga, President of the World Bank. I was deeply touched by his graciousness, warm gesture and humble demeanour. Also had a highly productive comprehensive bilateral meeting with Mr. Saroj Kumar Jha, Global Director, Global Water Practice, World Bank group. Our discussion steered from World Bank strategy and work plan for India to exploring opportunities of engaging with the World Bank and contributing to its future endeavours.



### Meeting with the Chief Minister of Chhattisgarh

Under the able leadership of Prime Minister Sh. Narendra Modiji towards achieving the targets of Viksit Bharat by transforming the India Economy from fifth largest in the world to third, as a partner in progress we had an audience with the Hon'ble Chief Minister of Chhattisgarh Sh. Vishnu Deo Sai at Chhattisgarh Sadan, New Delhi & presented my publication India at 75 and Beyond to HCM which he accepted graciously. His humble and warm demeanour is what makes him a people's leader. HCM Sh. Sai is doing incredible work in the state and I am sure his dynamic approach will propel Chhattisgarh towards a trajectory of Prosperity and development.

## FRIDAY BLOGS

### **Deciphering interlinkages of Nature and Human Rights at the 54th session of UNHRC**

2023 mark the 75th anniversary of the Universal Declaration on Human Rights (UNDHR). The Human Rights Council is known as the most open and accessible body in the entire UN structure. This is precisely as it should be given that every human being is entitled to human rights under international law and deserves a chance to be heard. With the Council meeting three times a year in regular session, plus universal periodic review (UPR) and special sessions, side events, expert panels and a regular call for submissions from nongovernmental organizations, civil society has a special year-round place in the Council's activities.....Click here <https://www.focusglobalreporter.org/deciphering-interlinkages-of-nature-and-human-rights-at-the-54th-session-of-unhrc/>

### **New Alliance and Global South the New Mantra of G20 India Presidency**

Under the theme of 'Vasudhaiva Kutumbakam' the G20 leaders met at a defining moment in history where the decisions made will determine the future of people and planet. It is with the philosophy of living in harmony with surrounding ecosystem that commitment to concrete actions were taken to address global challenges. Before the G20 summit opened in Delhi against the backdrop of the aftermath of the COVID-19 pandemic and Russia-Ukraine tensions, there were several concerns about the outcome of the event. But despite these concerns, India successfully hosted the summit with the presence of key international leaders, from U.S. President Joe Biden to Brazil's.....Click here <https://www.focusglobalreporter.org/new-alliance-and-global-south-the-new-mantra-of-g20-india-presidency/>

### **The SDG Summit 2023: Is it a Path to transformative action?**

Is the Political Declaration at the UN SDG Summit 2023 actually a transformative action or just old wine in new bottle? A fundamental shift is needed in how the world tackles existing crises – from climate change to conflicts, from poverty to polarisation, from food security to financialisation of human rights, from shrinking civic space to social security gaps, from debt to the digital divide, from gender backlash to growth obsession. Was the summit able to address all these issues?.....Click here <https://www.focusglobalreporter.org/the-sdg-summit-2023-is-it-a-path-to-transformative-action/>

## **Article 6.4: A tool for just transitioning?**

Europe is experiencing some of the hottest temperatures of summer 2023 so far, as a ‘heat dome’ expands over the southern half of the continent. While flying back from Geneva yesterday I saw all the mountains without ice caps, and then CNN confirmed that this summer Switzerland lost 4% of its glaciers. Since 1907 this summer has been the hottest for Geneva. Isn’t it frightening?.....Click here <https://www.focusglobalreporter.org/article-6-4-a-tool-for-just-transitioning/>

## **Eco-fragile Himalayan Region: A clarion call for disaster Mitigation**

The world is facing increasingly complex climate-related challenges that are reducing our resilience to climate shocks and increasing our vulnerability to natural hazards. The frequency and intensity of climate-related hazards such as cyclones, flooding, and drought are rising, affecting millions of people each year. Loss of lives, livelihoods, huge infrastructural losses which comes out to be Click here <https://www.focusglobalreporter.org/eco-fragile-himalayan-region-a-clarion-call-for-disaster-mitigation/>

## **The 54th Session of the UN Human Rights Council (HRC): An Overview**

The 54th regular session of the UN Human Rights Council (HRC), which was held from September 11 to October 13, 2023, was a meeting of the main intergovernmental body within the United Nations system responsible for the promotion and protection of all human rights around the globe. The session addressed issues such as reprisals, arbitrary detention, systemic racism, enforced disappearances, water..... Click here <https://www.focusglobalreporter.org/the-54th-session-of-the-un-human-rights-council-hrc-an-overview/>

## **Agrifood Systems Transformation and Climate Action**

Agrifood systems are a major contributor to climate change, but they also have the potential to be part of the solution. Being the complex networks of people, activities, and resources that produce, process, and consume food, agrifood systems are significant for human well-being, nutrition, and health but they also have significant impacts on the environment and climate. According to the FAO, .....Click here <https://www.focusglobalreporter.org/agrifood-systems-transformation-and-climate-action/>

## **From Breathing Noxious AIR to clear blue Skies ??**

At this time of year like the advent of festival season the annual ritual of Air Pollution also arrives in Delhi. Its air is increasingly becoming more polluted and unbreathable, harming our health, economies and the planet and is a global scale problem and one of the biggest contributors to climate change. South Asia is home to some of the world's countries most vulnerable to climate change.....Click here <https://www.focusglobalreporter.org/from-breathing-noxious-air-to-clear-blue-skies/>

## **India US strategic Partnership: Vision for a Vibrant Indo Pacific**

Our planet is buckling under the weight of intertwined environmental crises: conflict, climate change, biodiversity loss and pollution. These unfolding catastrophes are getting worse by the day and jeopardizing decades of hard-won development gains. Especially in the Asia Pacific region as in just the last few months, countries from India to Vanuatu have been blanketed in record heat, lashed by cyclones and floodwaters. ....Click here <https://www.focusglobalreporter.org/india-us-strategic-partnership-vision-for-a-vibrant-indo-pacific/>

## **G20 Leaders Delhi Declaration: Setting a Precedent for COP 28?**

Summer 2023's record-setting temperatures aren't just a set of numbers – they result in dire real-world consequences. From sweltering temperatures in USA, to wildfires across Canada, and extreme flooding in Europe and Asia, extreme weather is threatening lives and livelihoods around the world. It has been reiterated numerous times that humans are responsible for all global heating over the past 200 years leading to a current temperature rise of 1.1°C above pre-industrial levels, which .....Click here <https://www.focusglobalreporter.org/climate-negotiations-from-g20-delhi-declaration-to-prospects-at-cop-28/>

## **Human Rights: A Privilege or What Else?**

Human rights are rights we have simply because we exist as human beings – they are not granted by any state. These universal rights are inherent to us all, regardless of nationality, sex, national or ethnic origin, color, religion, language, or any other status. They range from the most fundamental – the right to life – to those that make life worth living, such as the rights to food, education, work, health, and. ....Click here <https://www.focusglobalreporter.org/endless-conflict-environment-and-human-rights-violations/>

## **Redefining Climate Actions and Commitments at COP 28**

A landmark deal to help the world's poorest and most vulnerable countries pay for the irreversible impacts of climate disaster was agreed on the first day of the Cop28 UN summit. Host country UAE and Germany both pledged \$100m (£79m) to the loss and damage startup fund, which will aim to keep up with the rising costs caused by extreme weather and slow-onset disasters such as sea level rise, ocean acidification and melting glaciers. There may still be an entire month to go in 2023 but the United Nations has announced on that 2023 is set to be has been.....Click here <https://www.focusglobalreporter.org/redefining-climate-actions-and-commitments-at-cop-28/>

## **Loss and Damage Fund an Edifice for Resilience?**

In an agreement on a loss and damage fund to help developing countries cope with the effects of climate change, COP28 began with a historic landmark deal. Developing nations that have contributed the least to the climate crisis have been facing the brunt of its devastating floods, drought and sea-level rise. The support of developed nations for the fund was established during last year's climate summit in Egypt after several years of negotiations. During his address, Prime Minister Modiji voiced.....Click here <https://www.focusglobalreporter.org/loss-and-damage-fund-an-edifice-for-resilience/>

## **Biggest COP ever concluded without consensus**

The 28th edition of the Conference of the Parties (COP 28) to the United Nations Framework Convention on Climate Change (UNFCCC) unfolded in the dynamic city of Dubai, UAE, spanning from November 30 to December 12, 2023. Notably, this COP marked a historic milestone as the first instance where a member of the Organization of the Petroleum Exporting Countries (OPEC) played host to the global climate forum.....click here <https://www.focusglobalreporter.org/biggest-cop-ever-concluded-without-consensus/>

## **Envisioning a paradigm shift in Agriculture sector!**

Agriculture represents a crucial sector that underpins our population growth and well-being. It has been providing nourishment for generations. According to the United Nations, agricultural development is one of the most powerful tools to combat extreme poverty, boost prosperity, and feed the global population. India, a predominantly agrarian country and a few decades ago, India's agriculture industry was the backbone of its economy, contributing a staggering 75% to the country's GDP. Fast forward to the present.....Click here <https://www.focusglobalreporter.org/envisioning-a-paradigm-shift-in-agriculture-sector/>



## **IME Corridor: Will change World order or a missed opportunity?**

Economic corridors are infrastructure projects designed to enhance connectivity and facilitate economic development between different regions or countries involving the development of transportation and logistics infrastructure, such as roads, railways, ports, and digital connectivity, to facilitate the movement of goods, services, and people. During the G20 summit in New Delhi in September, world leaders unveiled.....Click here <https://www.focusglobalreporter.org/ime-corridor-will-change-world-order-or-a-missed-opportunity/>

## **Climate Finance at COP28: Is it old wine in new bottle?**

In 2023 most of the planet including the oceans experienced above-average or record-breaking heat, with more intense rainfall and catastrophic flooding and damage. Changing rainfall patterns led to massive forest fires scorching millions of hectares. A quarter of the world's population – 1.8 billion people – is directly exposed to substantial flood risk: 90% live in low- and middle-income countries and 40% are poor or extremely poor.....Click here <https://www.focusglobalreporter.org/climate-finance-at-cop28-is-it-old-wine-in-new-bottle/>

## **World Economic Forum: Swanky gathering or Actionable Commitments too?**

Our planet is heading for a scorching three-degree increase in global temperatures. Droughts, storms, fires and floods are pummeling countries and communities. Before travelling to the United Nations climate talks at COP28 in Dubai, I saw for myself the dramatic receding of Himalayan glaciers, the accelerated melting of the ice sheet in Antarctica and glaciers disappearing in Switzerland”.....Click here <https://www.focusglobalreporter.org/world-economic-forum-swanky-gathering-or-actionable-commitments-too/>

## **Harnessing the Multidimensionality of Wetlands for Human Wellbeing**

In an era of planetary crises and increasing environmental challenges, finding innovative and sustainable solutions to safeguard the health of our planet and promote human well-being is paramount and wetlands play a crucial role in it. As per recent estimates, wetlands of at least 2.25 ha in size make up 4.86% of country's geographical area (15.98 million-hectares). Wetlands, including marshes.....Click here <https://www.focusglobalreporter.org/harnessing-the-multidimensionality-of-wetlands-for-human-wellbeing/>

## **Accelerating Actions to address Planetary Crises**

The United Nations Environment Assembly is the world's highest-level decision-making body for matters related to the environment. It sets priorities for global environmental policies and international environmental law. Understanding these challenges and preserving and rehabilitating our environment is at the heart of the 2030 Agenda for Sustainable Development. The natural world – the very foundation of our societies and economies – is buckling under the weight of three intertwined environmental crises: climate change, biodiversity loss and pollution. These unfolding catastrophes are getting .....Click here <https://www.focusglobalreporter.org/accelerating-actions-to-address-planetary-crises/>

## **Tackling Agrarian Crisis for Viksit Bharat**

Agriculture contributes 16% of the overall GDP and accounts for employment of approximately 52% of the Indian population. Rapid growth in agriculture is essential not only for self-reliance but also to earn valuable foreign exchange. Even PM Modi in his speech at Gujarat yesterday underscored the importance of sustainable agricultural practices and livestock management for India's economic growth and prosperit,.....Click here <https://www.focusglobalreporter.org/tackling-agrarian-crisis-for-viksit-bharat/>

## **The quest for Human Rights in a polarized World**

Human rights reflect shared values and apply to every human being regardless of the specific laws that their country may hold. Such values also apply to human beings of any race, religion or any other identity marker. But is it being upheld in countries? With the Palestine, Israel conflict even the basic human rights like right to water, medicine, food etc is also thwarted. Human rights are a necessary means of protection against oppressors and allow speaking up and advocating through the legal system. Everyone is entitled ,.....Click here <https://www.focusglobalreporter.org/the-quest-for-human-rights-in-a-polarized-world/>

## **How UNEA 6 outcomes are relevant for 55th UN HRC?**

On the face of the triple planetary crisis of climate change, biodiversity loss and pollution, the world has not just an environment to do list but an environment must to do list. There is growing recognition that the environment needs to be re-evaluated and better protected. Developments, such as a values assessment by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), the concept of bio-cultural rights and the acknowledgment of granting rights to nature, emphasize the intrinsic value.....Click here <https://www.focusglobalreporter.org/how-unea-6-outcomes-are-relevant-for-55th-un-hrc/>

## **Preserve and Conserve Rivers to attain their Pristine Glory**

Rivers are the lifeline of every country, similarly for millions of Indians through millennia. It's a country which also derives its modern name India from river Indus. While some rivers are worshipped as deities, others sustain lives around them. In either case, Indians have a profound sense of reverence for their rivers. However, the health of many such rivers has taken a severe beating in recent decades owing to unchecked industrial activities and a lack of proper waste management systems. Every day, an estimated more than .....Click here <https://www.focusglobalreporter.org/preserve-and-conserve-rivers-to-attain-their-pristine-glory/>

## **Water Transversality for Peace**

Water is a basic human right of every individual inhabiting the planet, without water life is impossible. Access to safe water is imperative for civilizations to prosper. However, conflicts over water are continuing to pose severe risks on populations and the environment across the globe. When properly managed, water can, and should, instead be a peacemaking platform for long lasting cooperation. Over the course of the 20th Century, global water use grew at more than twice the rate of population increase. Today, this dissonance .....Click here <https://www.focusglobalreporter.org/water-transversality-for-peace/>

## **Swerving Growing Food Insecurity**

There is no food security without peace, and no peace without food security, it is no coincidence that half of the world's hungry people live in conflict-affected zones. Out of 258 million people facing high levels of acute food insecurity, over two thirds — 174 million — are there because of climate and conflict. The world cannot afford to leave behind farmers, pastoralists, fisherfolk and foresters. Amidst the urgency of global food insecurity, Director-General of the Food and Agriculture Organization of the United Nations (FAO), delivered a resounding call to action at the Expert Group Meeting on Sustainable Development Goal 2 (SDG2). With a backdrop of widening disparities and mounting challenges exacerbated by conflicts, economic strains, and the climate crisis and underscored the imperative to halt the escalating .....Click here <https://www.focusglobalreporter.org/swerving-growing-food-insecurity/>

## UPCOMING MAJOR EVENTS

### IWF's Water Transversality Global Awards and Conclave

India Water Foundation's Water Transversality Global Awards and Conclave was announced in January supported by the Ministry of Jal Shakti, Department of Water Resources, RD & GR Govt. of India to be held on


**28-29 November 2024**. These awards are to felicitate leaders in transversality. Considering the fact that sustainable Environment is an integral part of the life's existence on earth, it was felt necessary to institute world's first of its kind globally the IWF's Water Transversality Global Awards and conclave is the first of its kind awards in the globe which



celebrates the commitment to excellence in multisectors, encouraging all the actors in the water and related sectors, to adopt holistic approach, and to bring in synergy towards sustainability, environment conservation and management. Entries are open to become partners, sponsors and apply for the award. To apply click on - <https://lnkd.in/djWvNtb3>

# MAJOR EVENTS TWEET'S GALLERY

**SPEAKER**  
**DR. ARVIND KUMAR**  
President,  
India Water Foundation




“We have to harvest the opportunities that the #agriculture and #foodsystems offer to lift people out of #poverty and the future must be built on bottom-up systems-thinking approaches.”

High Level Policy Dialogue on Deciphering Nexus of Poverty Eradication, Food Security and Climate Change through Multi-Stakeholder Partnerships Organised by India Water Foundation

UNEP January 2014, 9.11 - 9.22 AM EST, New York Head (11.41 - 10.00 1381 EST Visual Site Event)

**CHAIR ADDRESS:**  
**SH. GAJENDRA SINGH SHEKHAWAT**  
Union Minister of Jal Shakti,  
Ministry of Jal Shakti, Govt. of India




“Access to potable water plays a crucial role in controlling waterborne diseases, ensuring healthier communities and instead of walking long distances to collect water, Women now engage in economic activities, contributing to family income and reducing poverty.”

High Level Policy Dialogue on Deciphering Nexus of Poverty Eradication, Food Security and Climate Change through Multi-Stakeholder Partnerships Organised by India Water Foundation

UNEP January 2014, 9.11 - 9.22 AM EST, New York Head (11.41 - 10.00 1381 EST Visual Site Event)

**SPEAKER**  
**MS. LIN YANG**  
Deputy Executive Secretary for  
Programme of ESCAP




“Strengthen cross sectoral public private partnerships which align interests and values, harness diverse expertise and perspectives open the way for innovation.”

High Level Policy Dialogue on Deciphering Nexus of Poverty Eradication, Food Security and Climate Change through Multi-Stakeholder Partnerships Organised by India Water Foundation

UNEP January 2014, 9.11 - 9.22 AM EST, New York Head (11.41 - 10.00 1381 EST Visual Site Event)

**SPEAKER**  
**DR. SUSAN GARDNER**  
Director, Ecosystem Division  
UN Environment Programme




“Through the economics and biodiversity economics initiatives called #TEEB we can use true cost accounting and put a dollar back in nature and ecosystem services and many cross-cutting benefits they provide to people.”

High Level Policy Dialogue on Deciphering Nexus of Poverty Eradication, Food Security and Climate Change through Multi-Stakeholder Partnerships Organised by India Water Foundation

UNEP January 2014, 9.11 - 9.22 AM EST, New York Head (11.41 - 10.00 1381 EST Visual Site Event)

**SPEAKER**  
**MR. SHOMBI SHARP**  
UN Resident Coordinator,  
India Office




“Indigenous SDGs remain our roadmap to restore sustainability. From the G20 in New Delhi to the General Assembly in New York to COP 28 in Dubai, last year closed on a strong call to step up #multisectoralpartnership to meet this overlapping crisis.”

High Level Policy Dialogue on Deciphering Nexus of Poverty Eradication, Food Security and Climate Change through Multi-Stakeholder Partnerships Organised by India Water Foundation

UNEP January 2014, 9.11 - 9.22 AM EST, New York Head (11.41 - 10.00 1381 EST Visual Site Event)

**SPEAKER**  
**MR. SATYA TRIPATHI**  
Secretary-General,  
Global Alliance for a Sustainable Planet




“Regenerative Farming in Andhra is a system scale example of ecosystem restoration, increased farmer income and has unlocked immense potential for women.”

High Level Policy Dialogue on Deciphering Nexus of Poverty Eradication, Food Security and Climate Change through Multi-Stakeholder Partnerships Organised by India Water Foundation

UNEP January 2014, 9.11 - 9.22 AM EST, New York Head (11.41 - 10.00 1381 EST Visual Site Event)

**SPEAKER**  
**MS. DANI GAILLARD-PICHER**  
International Policy Advisor, Swedish  
Water House, SIWI




“A broad holistic approach is required to achieve the goals along with partnership and collaboration. Multisectoral collaboration needs to be working with the government sectors and looking for public participation.”

High Level Policy Dialogue on Deciphering Nexus of Poverty Eradication, Food Security and Climate Change through Multi-Stakeholder Partnerships Organised by India Water Foundation

UNEP January 2014, 9.11 - 9.22 AM EST, New York Head (11.41 - 10.00 1381 EST Visual Site Event)

**SPEAKER**  
**DR. ARVIND KUMAR**  
President,  
India Water Foundation




“To balance the combined pressures of climate change and growing populations, we need to re-evaluate what we eat and where and how it's grown. We have to consume responsibly.”

High Level Policy Dialogue on Deciphering Nexus of Poverty Eradication, Food Security and Climate Change through Multi-Stakeholder Partnerships Organised by India Water Foundation

UNEP January 2014, 9.11 - 9.22 AM EST, New York Head (11.41 - 10.00 1381 EST Visual Site Event)

**SPEAKER**  
**MR. SATYA TRIPATHI**  
Secretary-General,  
Global Alliance for a Sustainable Planet




“Agroecology sequesters soil organic carbon, improves public health, reduces poverty, regenerates ecosystems and also unlock the bigger fortune for countries like India.”

High Level Policy Dialogue on Deciphering Nexus of Poverty Eradication, Food Security and Climate Change through Multi-Stakeholder Partnerships Organised by India Water Foundation

UNEP January 2014, 9.11 - 9.22 AM EST, New York Head (11.41 - 10.00 1381 EST Visual Site Event)

**SPEAKER**  
**DR. SUSAN GARDNER**  
Director, Ecosystem Division  
UN Environment Programme




Our ongoing projects in India in partnership with the Moefcc and MOA offered world real evidence that scaling up sustainable agricultural solutions revealed that if enabling policies on organic farming and agroforestry were introduced soils erosion rates can be decreased up to 7 % carbon sequestration rates can rise by 7.5 % by 2050 with an economic value of more than 200 million USD.

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20<sup>th</sup> January 2024, 9:15 - 10:00 AM IST, New York time  
10:45 - 11:30 AM IST EDT, Virtual Side Event

**SPEAKER**  
**MS. LIN YANG**  
Deputy Executive Secretary for  
Programme of ESCAP




It's critical to scale up use of data to support adaptation investments and resilience building strategies which are risk informed.

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**SPEAKER**  
**MR. SATYA TRIPATHI**  
Secretary-General,  
Global Alliance for a Sustainable Planet




With the government of Andhra Pradesh we are creating a world's first billion dollar regenerative agriculture lending facility and make Andhra net zero way ahead of developed countries.

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**SPEAKER**  
**MS. DANI GAILLARD-PICHER**  
International Policy Advisor, Swedish  
Water House, SIWI




Without water there is no food and when we waste water, this makes achieving our 2030 goals all the more challenging.

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**SPEAKER**  
**MS. LIN YANG**  
Deputy Executive Secretary for  
Programme of ESCAP




The cross sectoral and cross border nature of risk in food climate and macroeconomic nexus calls for inclusive regional and multilateral collaboration to emphasise enhancing solidarity so that no one is left behind.

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**MODERATOR**  
**MS. SHWETA TYAGI**  
Chief Functionary,  
India Water Foundation




It's important to strengthen the interface between science, policymaking and society to improve public-private transparency, information-sharing and cross-sectoral collaboration to find solutions that minimize trade-offs and balance the economic, environmental and social dimensions of agrifood systems transformation.

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20<sup>th</sup> January 2024, 9:15 - 10:00 AM IST, New York time  
10:45 - 11:30 AM IST EDT, Virtual Side Event

**SPEAKER**  
**MR. SANJEEV BHUCHAR**  
Senior Watershed Management  
Specialist, ICIMOD




Strong need of policy and behavioural change, regional and transboundary collaboration, sustainable financing is required.

High Level Policy Dialogue  
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20<sup>th</sup> January 2024, 9:15 - 10:00 AM IST, New York time  
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**SPEAKER**  
**DR. ARVIND KUMAR**  
President,  
India Water Foundation



Water can fight climate change. Sustainable water management is central to building the resilience of societies and ecosystems and to reducing carbon emissions. Climate-resilient infrastructure will lead to the strengthening of public health systems, maintenance of cultural and ecosystem diversity, prevention of migration of ethnic communities, and sustainable sources of water leading to equity and equitable access.

34<sup>th</sup> Session of the United Nations Human Rights Council  
Official Side Event on  
"Safeguarding Human Right to  
Water and Sanitation in India amidst Climate Emergency"  
Organised  
by  
India Water Foundation  
Special Consultative Status with UN-ECOSOC  
Room No. XXV, Palais des Nations, Geneva  
Date: 14<sup>th</sup> September 2023, Time: 17 - 18 Hrs Geneva Times (Hybrid)


**SPEAKER**  
**MR. SATYA TRIPATHI**  
Secretary-General,  
Global Alliance for Sustainable Planet



We have to Prioritize access to water and sanitation services in rural and marginalized communities. Engage local communities in the planning, implementation, and management of water and sanitation projects. Launch public awareness campaigns to educate citizens about water conservation, hygiene practices, and the importance of sanitation.

34<sup>th</sup> Session of the United Nations Human Rights Council  
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**SPEAKER**  
**MS. KARIN GARDES**  
SIWI's Chief Operating Officer and Executive Director, SIWI (Acting)



Climate change is a multiplier of inequalities and that requires tailored solutions. These solutions should target specifically the most vulnerable people, focusing on conditions of accessibility, acceptability and affordability of the WASH services. India has made significant progress in the water and sanitation sector and it all boils down to improved water governance.

54<sup>th</sup> Session of the United Nations Human Rights Council  
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Room No. XXV, Palais des Nations, Geneva  
Date: 14<sup>th</sup> September 2023, Time: 17-18 Hrs Geneva Time (Hr:Beit)

**SPEAKER**  
**DR. RAJAN SUDESH RATNA**  
Deputy Head and Senior Economic Affairs Officer, UNESCAP-SSWA Office



Despite these overall sub-regional situations, countries have performed well on some of the targets and other countries must learn from successful initiatives and replicate them. For example, India's Jal Jeevan Mission, a drive to provide drinking water to every house is a successful example where the current target has been achieved well ahead of time. Similarly, the Swachh Bharat Abhiyan (Clean India Mission) is another success story.

54<sup>th</sup> Session of the United Nations Human Rights Council  
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**SPEAKER**  
**MS. SONJA KOEPEL**  
Co-secretary, Protocol on Water and Health and Secretary of the Water Convention, UNECE



The Protocol on Water and Health, provides a practical tool for implementing the 2030 Agenda: Its progressive target setting and national reporting on all aspects of water, sanitation, hygiene and health are mechanisms to accelerate progress. I call on all Central Asian countries to ratify and implement the Protocol and use its many tools such as the equitable access scorecard and the target-setting approach to progressively realize the human rights to water and sanitation.

54<sup>th</sup> Session of the United Nations Human Rights Council  
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**SPEAKER**  
**MR. VISHWA RANJAN SINHA**  
Programme officer, Water and Wetlands, South Asia, IUCN



Water governance capacity should be understood as the competence of a society to ensure the development of sustainable water resources and the implementation of effective water management by means of transparent, coherent, and cost effective policy law and institutions (e.g. for progress on safe water supply and sanitation services, for integrated water resource management, etc.

54<sup>th</sup> Session of the United Nations Human Rights Council  
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**MODERATOR**  
**MS. SHWETA TYAGI**  
Chief Functionary, India Water Foundation



The accelerated efforts in the Water and sanitation sector in India are to be applauded. The way forward should be stressing on water infrastructure designed to resist and recover from catastrophic weather events, such as droughts and floods. Water-related data and information are critical to understand the social, economic and environmental demands and complexity of water and sanitation challenges and to effectively target measures and funding.

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**SPEAKER**  
**DR. ARVIND KUMAR**  
President, India Water Foundation



International water law has developed principles and norms that provide the basis for transboundary water cooperation, which can avoid conflict and contribute to stability and peace. Unfortunately, only 32 out of the 153 countries sharing transboundary waters have at least 90% of their transboundary basin area covered by an operational arrangement for water cooperation.

Celebrating World Water Day 2024  
Sixteen Years of IWF's Journey  
High Level Policy Dialogue  
Stewardship for achieving Water Partnerships for Peace by Transversality Systemic Approach  
Organised by  
**India Water Foundation**  
20<sup>th</sup> March 2024, 12:00 - 13:30 Hrs IST, Virtual


**SPEAKER**  
**DR. ARVIND KUMAR**  
President, India Water Foundation



Leveraging water for peace also involves governance arrangements that both avoid and manage disputes. The most prominent mechanisms include international frameworks and norms for meeting the human rights to water and protecting water sources and systems, particularly during armed conflicts and in transboundary settings.

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20<sup>th</sup> March 2024, 12:00 - 13:30 Hrs IST, Virtual


**Chair Address**  
**H.E. MS. ARMIDA S. ALISJAHBANA**  
Under-Secretary-General of the United Nations and Executive Secretary, UN ESCAP



We need sustained dialogues and cooperation in transboundary river basin also in river basin that cross administrative boundaries within countries.

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**Chair Address**  
**H.E. MS. ARMIDA S. ALISJAHBANA**  
Under-Secretary-General of the United Nations and Executive Secretary, UN ESCAP



We must develop financing strategy that sustain the health of every stage of the water cycle including flows of water for nature. Therefore water management system must be based on natural systems.

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20<sup>th</sup> March 2024, 12:00 - 13:30 Hrs IST, Virtual

**SPEAKER**  
**DR. ERIC TARDIEU**  
Director General - International Office  
for Water, Secretary General-INBO,  
Vice President - WWC




“We need to work in parallel at transboundary scale and also at national and local level. Without effective and relevant policies in water and related sectors fruitful and peaceful implementation of transboundary approaches is difficult.”




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Peace by Transversality Systemic Approach  
Organized by  
India Water Foundation  
28<sup>th</sup> March 2024, 12:00 - 12:30 (IST, Virtual)

**SPEAKER**  
**DR. ERIC TARDIEU**  
Director General - International Office  
for Water, Secretary General-INBO,  
Vice President - WWC




“Higher uncertainty in the river flows leads to disturbed hydrological cycles. Water and nature integration is crucial and effective solutions to address not just climate change but other human needs.”




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28<sup>th</sup> March 2024, 12:00 - 12:30 (IST, Virtual)

**SPEAKER**  
**DR. EDDY J. MOORS**  
Rector,  
IHE Delft Institute of Water Education




“Cross border water cooperation is more common than cross border conflict. Nearly every water related intervention involves some kind of cooperation.”




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**SPEAKER**  
**DR. EDDY J. MOORS**  
Rector,  
IHE Delft Institute of Water Education




“If we need to change from the way we are dealing with transboundary conflict we need behavior change. Capacitating youth through programmes such as young water diplomats course and crowd (Cross Regional Learning for Water Diplomacy) of IHE Delft may help.”




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28<sup>th</sup> March 2024, 12:00 - 12:30 (IST, Virtual)

**SPEAKER**  
**MR. ATUL BAGAI**  
Head – UNEP Country Office  
India



“I am really honoured to be associated with IWF and a great worked they have done by taking a lead on water issues in the country. I am enthused by Dr. Kumar's network of organization of national and international level and contributing to this water for a.”



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28<sup>th</sup> March 2024, 12:00 - 12:30 (IST, Virtual)

**SPEAKER**  
**DR. RAJAN SUDESH RATNA**  
Deputy Head and Senior Economic  
Affairs Officer, United Nations ESCAP  
South and South West Asia Office



“Lack of transboundary water cooperation has multifaceted impact. We need to bridge the gap of knowledge by capacity building, knowledge exchange, sharing data and having cooperation between countries on data sharing and shared water.”



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28<sup>th</sup> March 2024, 12:00 - 12:30 (IST, Virtual)

**SPEAKER**  
**MS. DANIELLE G. PICHER**  
International Policy Advisor,  
Swedish Water House, SWH



“Because transboundary water account for sixty percent of worlds fresh water flows and more than 3 billion people depend on them, progress on transboundary water cooperation needs to be accelerated to promote sustainable economic development, climate action and resilience, disaster risk reduction and peace building in these basins.”



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28<sup>th</sup> March 2024, 12:00 - 12:30 (IST, Virtual)

**SPEAKER**  
**MS. SHWETA TYAGI**  
Chief Functionary  
India Water Foundation



“Research and development, innovative technical as well as financial solutions, but also new inclusive governance and circular business models are a must when working towards accelerated cross-sectoral implementation.”



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India Water Foundation  
28<sup>th</sup> March 2024, 12:00 - 12:30 (IST, Virtual)

**SPEAKER**  
**MS. SRABANI ROY**  
Strategic Group Leader,  
ICIMOD




“Assessing the economic value of EbA approaches(NCA) aligned with NAP/ LAPs and it increases resilience of socio ecological systems.”



“Managing Ecosystems for Multiple Benefits  
via  
EbA for Climate Adaptation and Resilience”  
An official virtual site event  
Organized by  
India Water Foundation  
28<sup>th</sup> February 2024, 10:45 - 11:00 (In Bengali Time  
10:15 - 10:30 (In IST)



**SPEAKER**  
**DR. ARVIND KUMAR**  
President,  
India Water Foundation




“EbA takes into account the transversality approach of water and emphasizes water as a socio-economic connector and indicator that interlinks sectors like agriculture, energy, biodiversity through actor-sector synergy and inter-sectoral convergence.”

ESCAP  
HAPFSD  
Water

“Managing Ecosystems for Multiple Benefits via EbA for Climate Adaptation and Resilience”  
An official virtual side event  
Organized by  
India Water Foundation  
22<sup>nd</sup> February 2024, 16:45 - 18:00 (In Bangkok Time)  
(03:15 - 16:30 (In IST))

**SPEAKER**  
**DR. ARVIND KUMAR**  
President,  
India Water Foundation



“The Ecosystem based Adaptation (EbA) approach if implemented promotes societal resilience via ecosystem management and conservation and recognizes the centrality of ecosystems in the adaptation process”

ESCAP  
HAPFSD  
Water

“Managing Ecosystems for Multiple Benefits via EbA for Climate Adaptation and Resilience”  
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Organized by  
India Water Foundation  
22<sup>nd</sup> February 2024, 16:45 - 18:00 (In Bangkok Time)  
(03:15 - 16:30 (In IST))

**SPEAKER**  
**MS. HITOMI RANKINEY**  
Chief Environment and Development  
Policy Section, UN ESCAP




“Financing and better investment is crucial, including external funding for creating social capitals. The private sector is benefited by the ecosystem hence it should also contribute to the financial building of the ecosystem.”

ESCAP  
HAPFSD  
Water

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**SPEAKER**  
**MS. HITOMI RANKINEY**  
Chief Environment and Development  
Policy Section, UN ESCAP



“EbA is critical and essential, food security and climate change is one of the six transformation pathways. We have to understand how ecosystems interact with each other.”

ESCAP  
HAPFSD  
Water

“Managing Ecosystems for Multiple Benefits via EbA for Climate Adaptation and Resilience”  
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22<sup>nd</sup> February 2024, 16:45 - 18:00 (In Bangkok Time)  
(03:15 - 16:30 (In IST))

**SPEAKER**  
**DR. M.V. RAMANA MURTHY**  
Advisor & Programme Head, Deep Ocean  
Mission, Ministry of Earth Sciences



“Adopt integrated coastal management approaches that consider ecological, social and economic aspects. build capacity and equip local communities with the knowledge and skills to participate in coastal resilience efforts.”

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Water

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22<sup>nd</sup> February 2024, 16:45 - 18:00 (In Bangkok Time)  
(03:15 - 16:30 (In IST))

**SPEAKER**  
**MS. TEMINA LALANI-SHARIF**  
Regional Director South Asia,  
CGIAR



“To achieve sustainability, we should adopt environment based policy actions which are circular and nature based.”

ESCAP  
HAPFSD  
Water

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22<sup>nd</sup> February 2024, 16:45 - 18:00 (In Bangkok Time)  
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**SPEAKER**  
**MS. TEMINA LALANI-SHARIF**  
Regional Director South Asia,  
CGIAR




“Expanding regenerative pathways by increasing soil quality and health through nature based solutions are crucial for agroecology”

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HAPFSD  
Water

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22<sup>nd</sup> February 2024, 16:45 - 18:00 (In Bangkok Time)  
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**SPEAKER**  
**MR. KAZUYA SUZUKI**  
Chief Representative of JICA,  
JICA Thailand Office




“At JICA we supervise conservation and restoration activities and participation of stakeholders, raising awareness through CEPA”

ESCAP  
HAPFSD  
Water

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22<sup>nd</sup> February 2024, 16:45 - 18:00 (In Bangkok Time)  
(03:15 - 16:30 (In IST))

**SPEAKER**  
**DR. AMANI ALFARRA**  
Program Manager - Water &  
Natural Resource Management,  
FAO Rome



“Policy guidelines are essential for success while minimizing environmental impact in Eba implementation.”

ESCAP  
HAPFSD  
Water

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For more information.....  
[www.indiawaterfoundation.org](http://www.indiawaterfoundation.org)

Ms. Shweta Tyagi  
Chief Functionary  
India Water Foundation  
TEL. NO. 91-11-26349533

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