



# WORLD SUSTAINABLE DEVELOPMENT SUMMIT 2023

MAINSTREAMING SUSTAINABLE DEVELOPMENT AND  
CLIMATE RESILIENCE FOR COLLECTIVE ACTION



SUMMIT OVERVIEW



The year 2023 marked the 22nd edition of the Summit series. In its journey since 2001, the platform has become a focal point for global thought leaders and practitioners to congregate and drive ambition and action for achieving sustainable development and to address the global challenge of climate change. The Summit series has emerged as the premier international event based in the Global South on sustainability which focuses on global futures while keeping an eye on present actions.

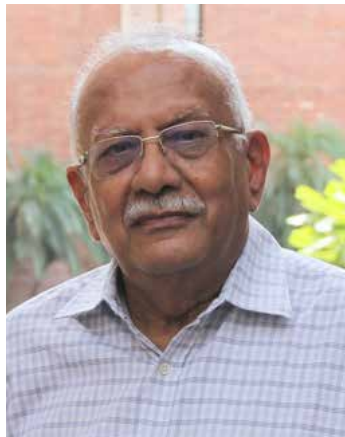
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# Chairman's Note

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**Mr Nitin Desai**  
Chairman, TERI

The year 2023 marked the 22nd edition of the World Sustainable Development Summit (WSDS). In its formative years, the Summit as a platform played a critical part in generating awareness on issues related to the environment and initiating conversations on sustainable development, climate change, biodiversity conservation, land degradation, water stress, and much more. Over the years, the focus has gently shifted towards an action-oriented approach, with the stress on solutions that could address the issues related to sustainable development and climate crisis.

This year too, the Summit sought to bring together the leadership of governments, corporations, research institutions, activists, and other stakeholders to drive and influence change. The WSDS carries forward the legacy of the Delhi Sustainable Development Summit instituted by The Energy and Resources Institute in 2001 under the visionary leadership of Dr RK Pachauri.

The word 'Sustainable Development,' when placed in the global policy discourse, meant connecting environment and development. The link between conserving resources and promoting sustainable livelihood is pertinent to sustainable development. However, the emerging connection between sustainable consumption and production has brought the focus on lifestyle changes. At COP26 in Glasgow, Prime Minister Mr Narendra Modi introduced the concept of Lifestyles for Environment or LiFE.

Over the years, the growing awareness in matters related to the environment and sustainable development globally, has strengthened the commitments from stakeholders including corporations to research institutes and non-governmental organizations linked across national boundaries towards climate action. There is, however, a missing horizontal link between institutions at the government level and at the international level. I hope we overcome the challenge of building these linkages to enable the collective leadership to address the issue globally. We need to promote creative ideas to ensure sustainable development, and this year, we welcome the strong role that India is playing in G20 with the Green Development Pact being a major theme in order to mainstream sustainable development.

The Summit facilitated an exchange of ideas, problems and solutions from stakeholders and representatives from across regions and countries on issues ranging from climate change impacts, building resilience, climate finance, sustainability in the areas of agriculture and water among others. At the same time, it pitched the need for collective

leadership to strengthen the idea of sustainable development for collective action. The Act4Earth initiative, which was launched at the previous edition of the WSDS, continued this year as well.

I congratulate the Director General of TERI, the Summit curator, and the entire team for putting together a successful event, and I look forward to the initiatives under Act4Earth and the future editions of WSDS, which will continue to nudge the world to come together to take urgent action for intra-generational and inter-generational equity.

# From the Director General's Desk



**Dr Vibha Dhawan**  
Director General, TERI

The flagship event of The Energy and Resources Institute (TERI), the World Sustainable Development Summit (WSDS) hosted its 22nd Edition in 2023. It brought together stakeholders from across the spectrum ranging from heads of state and the government to the grassroots level involving Union ministers, state ministers, climate negotiators, businesses, and youth. It has sought to serve as a forum for discussions, dialogues and strategic partnerships, and actions and solutions required to protect the only planet we have.

This is a critical year for India as it holds the G20 presidency. The process of Global Stocktake will culminate at the time of climate negotiations at COP28. Both these milestones are golden opportunities to further the voice of the Global South and its issues related to sustainable development and climate action. The Summit deliberations witnessed discussions on key issues such as finance, sustainable consumption, green development, inclusive energy transitions, climate action, nature-based solutions, among others.

I extend my gratitude to the Hon'ble Prime Minister, Mr Narendra Modi, for sharing an inaugural message with us. I want to especially thank the Ministry of Environment, Forest and Climate Change for extending support to the Summit since its inception. I thank Mr Bhupender Yadav, Hon'ble Minister of Environment, Forest and Climate Change, for gracing the inaugural session of WSDS 2023. I would also like to extend my gratitude to Ms Leena Nandan, Secretary, Ministry of Environment, Forest and Climate Change, for encouraging us.

I thank all partners and look forward to their extended and strengthened associations in the future editions of the Summit. I would like to acknowledge the Royal Norwegian Embassy [Country Partner]; Bloomberg Philanthropies [Star Partner]; Bill & Melinda Gates Foundation [Star Partner]; The Rockefeller Foundation [Premier Partner]; The Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection & International Climate Initiative [Senior Partner]; European Union [Senior Partner]; The World Bank [Senior Partner]; Tata Cleantech Capital [Associate Partner]; TERI School of Advanced Studies [Associate Partner]; Johnson Controls [Associate Partner]; Carnegie Climate Governance Initiative [Co-Associate Partner]; Capgemini [Co-Associate Partner]; International Energy Agency and McKinsey & Company [Co-Associate Partner].

In this particular Summit, we deliberated upon the problems encountered by the planet as well as the way forward to overcome the crisis. Meanwhile,

the preparations for WSDS 2024 have already started. I'm happy to share that the Summit, in tandem with its knowledge initiative - Act4Earth, launched last year, has engaged in topics that need immediate attention from world leaders, as well as forums including the G20 and COP28.

# Preface by the Summit Curator



**Dr Shailly Kedia**

Senior Fellow and Associate Director, TERI

Since its inception in 2001 as the Delhi Sustainable Development Summit and in 2016 transitioning to the World Sustainable Development Summit (WSDS), this Summit series has created a space for itself as the only independently convened multi-stakeholder event on sustainable development and climate action based in the Global South. WSDS activities are enshrined in the theory of constructivism, according to which, socialization leads to emergence, cascading and internalization of norms.

With the world approaching the crucial midpoint of the 2030 Agenda and the sustainable development goals, the 22nd edition of the Summit was held under the umbrella theme: *Mainstreaming Sustainable Development and Climate Resilience for Collective Action*. The Summit was held from 22–24 February 2023 at the India Habitat Centre in New Delhi. It was a pleasure to curate the Summit under the leadership of Dr Vibha Dhawan, Director General of The Energy and Resources Institute. It is extremely gratifying for me to have continued the thought legacy of the Summit, which was instituted under the vision of Dr Rajendra Kumar Pachauri in 2001.

The Summit discussions were informed by activities under the COP27 Compass and SDG Charter, which concluded with COP27 held in Sharm el-Sheikh in November 2022. As a part of the Summit activities, outputs of COP27 Compass and SDG Charter were launched in Sharm el-Sheikh at an official side event of the United Nations Framework Convention on Climate Change in the Blue Zone and at an COP27 Presidency event in the Green Zone.

This year, India is holding the Presidency of G20 which is a golden opportunity to further the voice of the Global South on issues related to sustainable development and climate action. The year will also see the important process of global stocktake at the climate negotiations at COP28. This Summit provided the setting of the stage through stakeholder engagement for these upcoming global milestones. WSDS 2023 witnessed the presence of the Dr Sultan Al Jaber, the COP28 President-designate, Mr Simon Stiell, the UNFCCC Executive Secretary, Mr Bhupender Yadav, the Union Environment Minister, and Mr Amitabh Kant, the G20 Sherpa.

After two virtual editions due to the pandemic, this was the first Summit largely held in an in-person mode with a few speakers contributing virtually and digitally. The Summit saw 1,200+ in-person delegates. 25 organizations partnered for the Summit. The Summit also saw engagement with Lifestyle for Environment (LiFE) as a special initiative. The media coverage for the Summit was 2,000+, social media reach was 1 million+ and the Summit page views were more than 85,000. The myriad of Summit sessions, which included 17 plenary sessions, 25 thematic tracks, 3 special events, and 18 exhibition booths and were driven by 109 plenary speakers and 184 thematic track speakers, witnessed in-depth deliberations on issues

ranging from G20 leadership, climate action, sustainable lifestyles, energy security, green growth, and climate finance.

Underscoring that, “Environment conservation is a commitment and not compulsion for India”, Shri Narendra Modi, Hon’ble Prime Minister of India, in his written message for the Summit, highlighted that the way forward is through collectiveness rather than selectiveness. Mr Bhupender Yadav, Hon’ble Minister of Environment, Forest, and Climate Change emphasized that combating climate change, biodiversity loss and land degradation transcends all political boundaries and hence is a shared global challenge. With high-level participation across the Summit, this Summit edition saw an extremely encouraging participation of Ministers from around the World. The Summit saw strong representation from political leadership around the world, which reflected the growing political traction to sustainability. A 10-point Act4Earth Manifesto, which encapsulated the key messages emerging from the Summit deliberations, was presented at the Summit. With continued partnership, we hope to continue the discussions under Act4Earth through 2023.

I express my sincere gratitude to the Ministry of Environment, Forest and Climate Change for nodal support for the Summit as well as for being a Special Initiative Partner for Mission LiFE. I would like to place on record support by Royal Norwegian Embassy (Country Partner); Bloomberg Philanthropies [Star Partner]; Bill and Melinda Gates Foundation [Star Partner]; Rockefeller Foundation [Premier Partner]; German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection and the International Climate Initiative [Senior Partner]; European Union [Senior Partner]; World Bank [Senior Partner]; Tata Capital [Senior Partner]; TERI School of Advanced Studies [Associate Partner]; International Energy Agency [Associate Partner]; Carnegie Climate Governance Initiative [Co-associate Partner]; Johnson Controls International [Co-associate Partner]; Capgemini [Co-associate Partner]; and McKinsey [Co-associate Partner].

I sincerely thank the International Steering Committee (ISC) members, TERI colleagues who assumed various roles in the run-up to and during the Summit, public relations services provider Kaizzen and the Team WSDS for their untiring efforts, cooperation, and support in conducting yet another successful edition.

This journey of ours, which has now completed 22 successful years, still has a long way to go. The 2024 Edition of the World Sustainable Development Summit will be organized under the Umbrella Theme of: *Leadership for Sustainable Development and Climate Justice* from 7–9 February 2024 in New Delhi. We look forward to bringing the world together once again at WSDS 2024, to continue our efforts of making sustainable development a globally shared goal.

# Acknowledgements

The 22nd Edition of the annual flagship event of The Energy and Resources Institute (TERI), the World Sustainable Development Summit (WSDS), was held in Hybrid mode from 22-24 February 2023 in New Delhi. The Summit deliberations focused on the umbrella theme: Mainstreaming Sustainable Development and Climate Resilience for Collective Action. WSWS 2023 was supported by the Ministry of Environment, Forest and Climate Change [Nodal Ministry] in partnership with the Royal Norwegian Embassy [Country Partner], Bloomberg Philanthropies and Bill and Melinda Gates Foundation [Star Partners]; Rockefeller Foundation [Premier Partner]; German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection, IKI, European Union and World Bank [Senior Partners]; Tata Capital, TERI School of Advanced Studies and International Energy Agency [Associate Partners], Carnegie Climate Governance Initiative, Johnson Controls International, Capgemini, and McKinsey [Co- associate Partners]. We express our sincere thanks to the Summit outreach partners: Kaizzen, Press Club India, The Foreign Correspondents Club, Climate Trends, Outlook Group, IFAT India, POP Movement, The World Sustainable Development Forum, The Climate Group and NRDC.

We thank Mr Nitin Desai (Chair, Governing Council, TERI) and Dr Vibha Dhawan (Director General, TERI) for their leadership and for their trust in the Summit team. We are grateful to Ambassador Puri (Distinguished Fellow, TERI) who energized the Summit team with his wisdom, motivation, and positivity. We would like to express our sincere gratitude to the International Steering Committee of the Summit, which comprised Ms Leena Nandan, Mr Manish Bapna, Ms Kathleen McGinty, Prof Kazuhiko Takeuchi, Mr Arne Walther, Dr Srivari Chandrasekhar, Ms Priya Shankar, Mr Anshu Bharadwaj, Ms Rachel Kyte, Ms Deepali Khanna, and Dr Purvi Mehta.

We thank the Advocacy Committee Members of WSWS Ms Aarti Khosla, Ms Bahar Dutt, Ms Fiona Harvey, Mr Himanshu Shekhar Mishra, Ms Jayashree Nandi, Dr Rajiv Chhibber, Mr Rajiv Tikoo, and Mr Vineet Handa.

We show appreciation to Ambassador Manjeev Singh Puri, Dr Prodipto Ghosh, Mr R R Rashmi, Mr Ajay Shankar, and Mr Vijay Kumar who guided us in the planning and brainstorming sessions. The Secretariat team acknowledges the colleagues from the Director General's office Mr Shyam Sundar Nayar, Mr Ritesh Kumar Jha, Ms Praba Charles who have been extremely instrumental in ensuring that communications go on time.

This year we had 25 thematic tracks, each thematic track requires the effort of the thematic leads, rapporteurs, and emcees. We thank the thematic track teams for their efforts. Our special acknowledgment to Ms Subhasree Vijayaraghavan and Ms Praveen Sharma for providing registration support. We thank our intern Mr Dennis Roy and consultants Ms Anuradha Mathur, Ms Ipshita Mitra and Ms Vidusshi Pathak.

The core coordination teams in TERI included Communications and Stakeholder Engagement, Information and Technology Services, TERI Publications and Administrative Services.

The Communications and Stakeholder Engagement team has tirelessly worked in promoting WSWS through media engagement, social media outreach, event management, and audio-visual content. From the Communications and Stakeholder Engagement team, we would like to acknowledge Ms P Anima, Ms Sonal Bajaj, Ms Ritu Ghai, Mr Sumit Bansal, Mr Shreyas Joshi, Ms Rumpa Banerjee, and Ms Palak Khanna.

Along with design support, TERI Publications has been instrumental in the delivery of knowledge products including the Daily Summit Bulletins, Special Issue of *TerraGreen*, and dissemination of Children's books. From TERI Publications Division, we would like to acknowledge Ms Anupama Jauhry, Mr Santosh Gautam, Mr Abhas Mukherjee, Mr Rajiv Sharma, Mr Sudeep Pawar, Mr Vijay Nipane, Mr Sachin Bhardwaj, Ms Shreya Mago, and Mr Sanjeev Sharma.

Along with managing the website and mailers, the IT team at TERI worked closely with the platform team to ensure the successful delivery of the Summit. We also thank them for their efforts in ensuring that we have a good WSDS website and information is also disseminated by our mailers. From the IT team, acknowledge Mr Amit Singhal, Mr Varun Prakash Pandey, Mr Rohit Chauhan, Mr Vir Bahadur Singh, Ms Aarti Parmar, Mr Pradeep Singh Negi, Mr Rahul Kumar, Ms Pawandeep Kaur, Mr Nitin, and Mr Shanu Kumar.

We thank Mr Sunit Tandon and his entire team at India Habitat Centre where we hosted the Summit. We thank Kaizzen who provided public relations services for the Summit.

We look forward to hosting another successful edition of the Summit next year as another milestone towards making 'sustainable development' a globally shared goal.

**WSDS Secretariat**

(Shailly Kedia, Sonali Mathur, Ravi Nair, and John Andruse)

# About WSDS

The World Sustainable Development Summit (WSDS) is the annual flagship multi-stakeholder initiative organized by The Energy and Resources Institute (TERI). Instituted in 2001, the Summit series has a legacy of over two decades for making 'sustainable development' a globally shared goal. Over the years, the Summit platform has brought together thought leaders, heads of state and government, scholars, corporates, youth groups, and civil society representatives from across the world. The Summit series has established itself as a responsible and an effective platform for mobilizing opinion-makers to drive ambition and advance pioneering actions to address some of the most relevant issues concerning sustainable development and climate change.

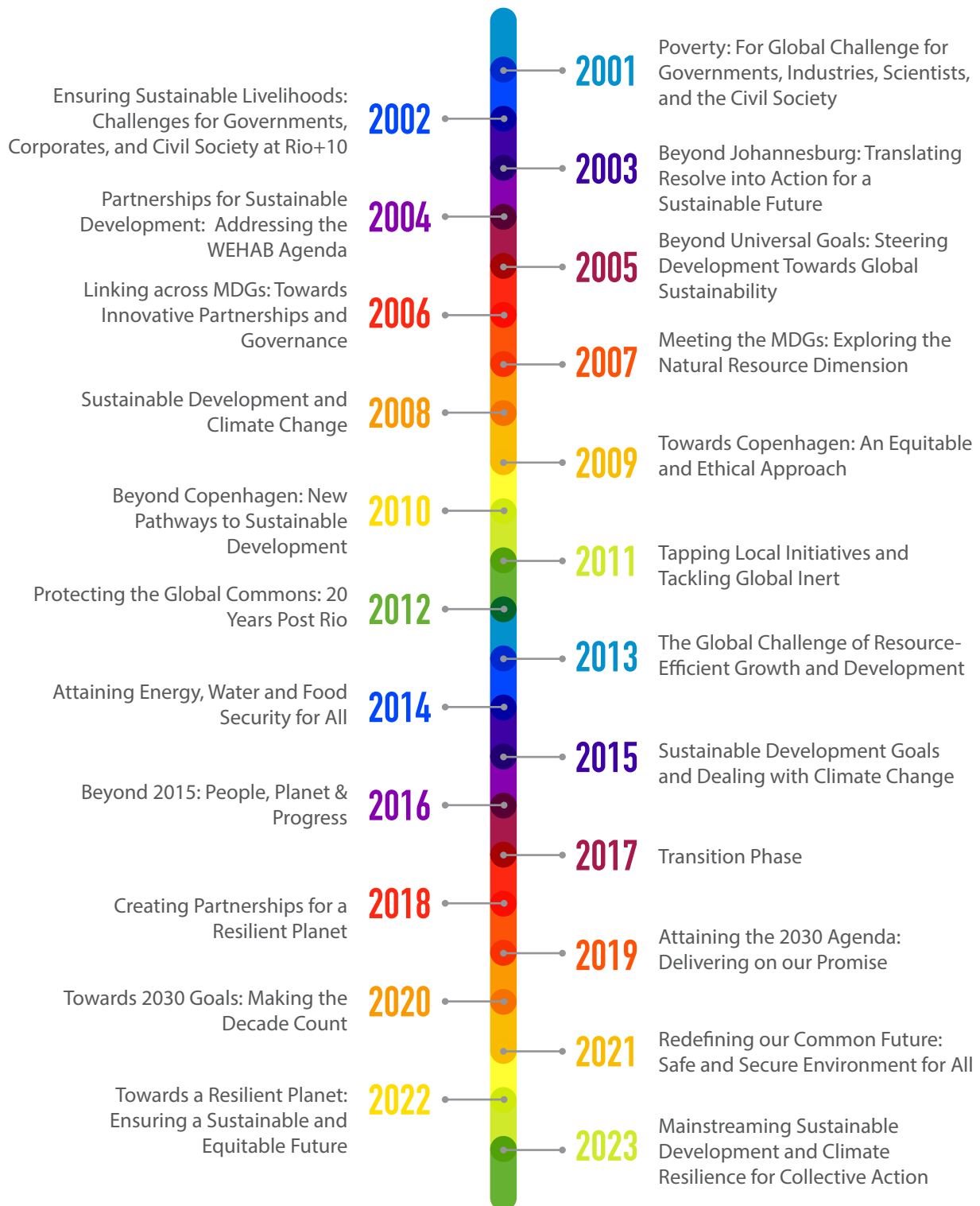
The only independently convened international Summit on sustainable development and environment, based in the Global South, WSDS strives to provide long-term solutions for the benefit of global communities by assembling the world's most enlightened leaders and thinkers on a single platform. In its previous editions, it has involved speakers, delegates, and participants to address several key issues pertaining to climate change and environment protection. As a result, the Summit has witnessed numerous partnerships that have promised to strengthen our collective endeavours towards imagining a sustainable and environmentally-secure future. The platform has reached out to the global community via exclusive features such as, High-level Ministerial Sessions, Plenary Sessions, Thematic Tracks, Youth Plenary, Women Leadership Session, International Dialogues, CEO Forum, Media Colloquium, and exhibitions on clean and green innovations.

Over the years, the Summit series has witnessed the participation of 56 Heads of State and Government, 126 Ministers, 13 Nobel Laureates, 3023 Speakers, 1888 Business Leaders, and 38,280 Delegates.

The Summit has an important role to play in not just providing a platform for dialogues, but also to create new knowledge outputs. This is enshrined in the theory of constructivism, according to which, learners construct knowledge rather than just passively taking in information. When leaders from various spheres come together and reflect upon their experiences, they build their own representations and incorporate new information into their pre-existing knowledge. By playing a constructivist role, the Summit will seek to reinforce commitment at all levels to enhance ambition and action through the Summit to create a more sustainable and equitable world for present and future generations.

The 22nd Edition of the annual flagship event of The Energy and Resources Institute (TERI)—the World Sustainable Development Summit (WSDS)—was held from February 22–24, 2023 at the India Habitat Centre in New Delhi. The Summit deliberations focused on the umbrella theme: Mainstreaming Sustainable Development and Climate Resilience for Collective Action. Considering the global milestones of G20 in India and the Global Stocktake at COP28, the deliberations at the 2023 edition of the Summit focused on topics such as green growth, lifestyles, energy security, climate action, SDG ambition, nature-based solutions and G20 leadership.

# Summit Series (2001–2023)



# Statistics @WSDS2023

**1203**

In-person Delegates

**25**

Partners

**2**

Heads of State/ Government

**16**

Expo Booths

**48**

Sessions

**2,000+**

Media Coverage

**278**

Speakers

**1 million+**

Social Media Reach

**23**

Ministers

**85,000+**

Website Users

# International Steering Committee

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**Dr Vibha Dhawan**  
Director General, The Energy and Resources Institute



**Ms Leena Nandan**  
Secretary to Government of India, Ministry of Environment, Forest and Climate Change



**Mr Manish Bapna**  
President & Chief Executive Officer, Natural Resources Defense Council (NRDC)



**Ms Kathleen McGinty**  
Vice President & Chief Sustainability, Government and Regulatory Affairs Officer, Johnson Controls



**Prof. Kazuhiko Takeuchi**  
President, Institute for Global Environmental Studies (IGES), Japan



**Mr Arne Walther**  
Former Secretary General of International Energy Forum & former Chairman, International Energy Agency



**Dr Srivari Chandrasekhar**  
Secretary, Department of Science and Technology, Government of India



**Ms Priya Shankar**  
India Director, Climate and Environment Program, Bloomberg Philanthropies



**Dr Srivari Chandrasekhar**  
Secretary, Department of Science and Technology, Government of India



**Ms Rachel Kyte**  
Dean, The Fletcher School at Tufts University



**Ms Deepali Khanna**  
Vice President, Asia The Rockefeller Foundation



**Dr Purvi Mehta**  
Deputy Director (Global Growth and Opportunities), Bill & Melinda Gates Foundation



सत्यमेव जयते

प्रधान मंत्री  
Prime Minister

### MESSAGE

It is most heartening to learn about World Sustainable Development Summit (WSDS) 2023. This initiative by The Energy and Resources Institute (TERI) to deliberate upon the theme – ‘Mainstreaming sustainable development and climate resilience for collective action’ is in consonance with the times we are in.

Extolling the Earth as Mother, our scriptures say, "माता भूमिः पुत्रो अहं पृथिव्या" meaning ‘The Earth is our Mother and we are her children’. The sentiment of वसुधैव कुटुम्बकम् or universal brotherhood has constantly guided the nation and its people. With such a glorious culture and philosophy of lofty traditions of living in harmony with nature, it is only natural for India to remain at the forefront of global efforts for environment protection.

WSDS-2023 is being hosted at a time when India holds the presidency of G20 and it is no coincidence that वसुधैव कुटुम्बकम् constitutes the theme of the duration of India’s G20 presidency. This has enhanced the pride and glory associated with both the occasions.

We firmly believe that development and nature can go hand-in-hand. With the objective of making sustainable development an integral part of everyday life, we launched Mission LiFE. The objective of this Mission is to adopt a lifestyle for environment. Environment is today not just a global cause, but also a personal as well as collective responsibility for every individual.

Environment conservation is a commitment and not compulsion for India. Human empowerment is impossible without a better environment and the way forward is through collectiveness rather than selectiveness.

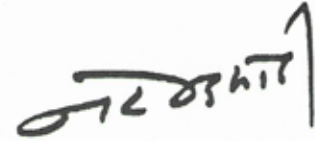
Our initiatives to adopt a healthier, cleaner lifestyle include upgrading infrastructure to encourage electric mobility, increased use of biofuel for transportation, leverage hydrogen as a fuel, convert waste to wealth and water treatment plants to ensure clean rivers.

We are striving to meet an increased portion of our demand for electricity from renewable and alternative sources of energy. Through latest technology and innovation, we are devising solutions to diverse urban challenges, particularly pollution and cleanliness.

Be it through measures for upliftment and empowerment of poor, or encouraging organic farming, or protecting farmers from the vagaries of nature, we have adopted a multi-dimensional approach to chart a long-term roadmap for sustainable and environment friendly lifestyle.

The conferring of Sustainable Development Leadership Award (SDLA) on the occasion recognises the contribution of global leaders from diverse fields towards the cause of sustainable development and environment protection.

Best wishes for fruitful deliberations at WSDS-2023 and towards making our Mother Earth cleaner and greener for future generations.



(Narendra Modi)

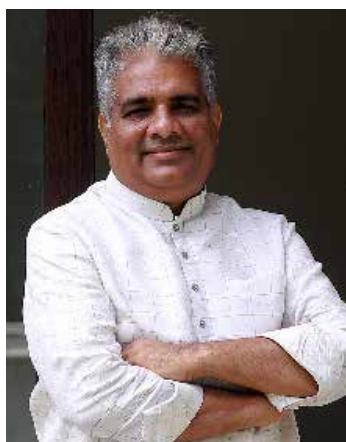
New Delhi

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20<sup>th</sup> February, 2023

# Opening Address

## Hon'ble Minister for Environment, Forest and Climate Change, Government of India, **Shri Bhupender Yadav**



**Shri Bhupender Yadav**

Hon'ble Minister for Environment, Forest and Climate Change, Government of India

Continuing last year's theme and discussion, the Summit, this year is premised on "Mainstreaming Sustainable Development and Climate Resilience for Collective Action" which came at no better time when India has assumed the G20 presidency. At a time, when the world is tackling the issues pertaining to climate action, environmental protection, and sustainable development, it is under the visionary leadership of Prime Minister Shri Narendra Modi, that India is emerging as an inspiration for countries across the globe, particularly on the fact that how economic development and conservation of environment can go hand in hand.

The vision of Prime Minister Shri Narendra Modi of correcting the ecological wrong into ecological harmony is taking shape by being reflected at the grassroots, where the successful implementation of Project Cheetah is an example among many. The second batch of cheetahs from South Africa was successfully introduced in Kuno National Park in Madhya Pradesh on 18th February 2023.

Combating Climate Change, Biodiversity Loss and Land Degradation transcends all political boundaries and hence is a shared global challenge. On multiple occasions both at the domestic and international stage, through evidence-based policymaking and implementation, India, has demonstrated that it has never been a part of the problem but is contributing significantly to become a part of the solution.

The provisions of Union Budget 2023 – 2024 presented in Parliament lays down the vision for 'Green Growth' across multiple sectors, with the underlying thought being that all future growth in the country has to essentially be green. With the concept of 'Green Growth' being a priority area in the Union Budget, it validates how sustainable development has been mainstreamed in Indian policy making process through a visionary approach.

India has already submitted its Long-Term Low Emission Development Strategy document at COP27 in Sharm El Sheikh, which is premised on two major pillars of climate justice and sustainable lifestyles alongside principles of CBDR-RC. With this, India has joined the list of select 58 countries who have submitted their new or updated LT-LEDS.

Not only at the domestic level but at international platform, particularly focusing on Climate Resilience, India has been helpful by providing value additional inputs, especially to Small Island Developing Nations who are particularly vulnerable to rising sea levels. India has created and been nurturing the CDRI or Coalition for Disaster Resilient Infrastructure. India has been making concerted efforts to engage various stakeholder institutions and individuals to promote innovation and resilience in infrastructure.

One such initiative is the “DRI Connect” which will be a web-based platform for stakeholders engaged in infrastructure sectors. The platform is envisaged to harness the collective intelligence of coalition membership towards the creation of new knowledge and actionable solutions to address challenges in resilient infrastructure and foster an environment of action-based learning and innovation on disaster resilient infrastructure.

The voice of Global South Summit launched by Prime Minister Shri Narendra Modi, which saw participation of 134 countries distributed across 10 sessions, gave the Global South a platform to discuss the pressing concerns of developing world. This was yet another testimony of India’s leadership, especially becoming the leading voice for global south.

With India taking over the G20 presidency, the discourse around sustainable development especially in the UN Critical Decade of Action has caught the global attention.

Living in harmony with nature has been traditionally ingrained in Indian ethos and same has been reflected by the mantra of LiFE or Lifestyle for Environment, as coined by Prime Minister Shri Narendra Modi. The mantra which focuses on nudging individual behaviour towards leading a sustainable lifestyle has received attention and appreciation from world leaders and leading experts across the globe and has been included in the cover decision text of Sharm El Sheikh Implementation plan at COP27. The ‘One-Word mass Movement’ – “Lifestyle for Environment”, to the global community which has been reflected in India’s updated NDCs, is now significant in propagating a healthy and sustainable way of living based on traditions and values of conservation and moderation which essentially has SDG 12 at its core on sustainable production and consumption.

Circular economy offers a new paradigm that emphasizes on the need to take a comprehensive view of products and processes. This leads to sustainable growth which is a key to an ‘Aatmanirbhar Bharat’. The Government has been actively formulating policies and promoting projects to drive the country towards a circular economy. India has already notified various rules, such as the Plastic Waste Management Rules, e-Waste Management Rules, Construction and Demolition Waste Management Rules, Metals Recycling Policy, etc., in this regard.

The first Environment and Climate Sustainability Working Group meeting of G20 which was held in Bengaluru on 9-11 February 2023 saw extensive deliberations on topics which had sustainable development and climate resilience at its heart. The delegates from G20 countries also deliberated on accelerating climate action, science and gaps and the role of Mission LiFE in further conservation of environment.

Despite being the fastest-growing economy in the world, India is taking giant strides at the domestic and international levels in tackling the triple planetary crisis in form of climate change, biodiversity loss and pollution. India under the able leadership of Prime Minister Shri Narendra Modi has got seventy five Ramsar Wetland sites, 33rd Elephant Reserve, 53rd tiger reserve, twelve Blue Flag Beaches, successfully implemented Single Use Plastic Ban, updated its NDCs, successfully reintroduced Cheetahs from two countries and demonstrated strong and bold leadership at COP27 in Sharm El Sheikh and COP15 in Montreal. These examples testify the fact that India's development trajectory and policymaking process has mainstreamed sustainable development and climate resilience at its core.

The World Sustainable Development Summit for the past two decades has been successful in engaging all the stakeholders from public and private sphere of life and has hence been forerunner in deliberating on subject of sustainable development.



# Tracing the Summit Days

## DAY 1: FEBRUARY 22, 2023

### INAUGURAL SESSION

#### VISIONARY LEADERSHIP FOR MAINSTREAMING SUSTAINABLE DEVELOPMENT AND CLIMATE RESILIENCE



#### ABOUT THE SESSION

The world is approaching the crucial midpoint of the 2030 Agenda and the sustainable development goals. Efforts have been made in bringing to the forefront the issues related to the environment, biodiversity loss, and climate change, and India has achieved many milestones in integrating sustainable development into the public, private, and societal discourses. But there is still a long way to go, especially in terms of horizontal and vertical integration of sustainable development across spheres. With this rationale, this year's WSWS focused on the overarching theme, 'Mainstreaming Sustainable Development and Climate Resilience for Collective Action'. The Inaugural Session set the stage for the Summit deliberations. As India is holding the Presidency of G20, this was a golden opportunity to further the voice of the Global South on issues related to sustainable development and climate action. H.E. Dr Sultan Al Jaber, COP28-President Designate conferred with Distinguished Alumni Award by TERI School of Advanced Studies. A TERI publication on low carbon development was also released.

## **SPEAKERS**

### *Welcome Address*

- Mr Nitin Desai, Chairman, The Energy and Resources Institute

### *Opening Address*

- Shri Bhupender Yadav, Hon'ble Minister for Environment, Forest and Climate Change

### *Inaugural Address*

- H.E. Dr Bharrat Jagdeo, Vice President, Republic of Guyana

### *Keynote Address*

- H.E. Dr Sultan Al Jaber, Special Envoy on Climate Change and COP28 President Designate, UAE

### *Special Message*

- Shri Narendra Modi, Hon'ble Prime Minister of India

### *Distinguished Alumni Award Announcement*

- Dr Shailesh Nayak, Chancellor, TERI School of Advanced Studies

### *Vote of Thanks*

- Dr Vibha Dhawan, Director General, The Energy and Resources Institute

## **KEY TAKEAWAYS**

- The emphasis should be on establishing a link between conserving resources and promoting sustainable livelihoods. There must be a connection between sustainable consumption and production, which is also echoed in the initiative launched by the Hon'ble Prime Minister through Lifestyle for Environment (LiFE).
- Economic development and conservation of the environment can go hand in hand. Combating climate change, biodiversity loss, and land degradation transcends all political boundaries. One of the key elements of the Union Budget 2023 is Green Growth focusing on the need for sustainable development.
- There must be a return to the principle of equity and justice not just in climate issues but also in sustainable development. For lasting solutions, there should be a balance in discussions that take place in the various bodies.
- Combined efforts are required in three areas: reducing fossil fuel production, carbon capture utilization and storage, and mass transit into renewable energy.
- Special attention must be given to the Small Island Developing States (SIDS) that are not only extremely vulnerable to the impacts of climate change but also fiscally stressed. These require a reform of the global financial system for achieving sustainable development.
- UAE, being one of the largest investors in renewable energy, is focusing on high growth low carbon pathway. UAE supports India's transformative pathway for a cleaner, greener, and bluer future for just and sustainable development for all.
- Transforming the food and water systems must be given the same attention as transitioning the energy and industrial systems. There must be a harmonious blend of environmental stewardship, environmental protection, and climate action in any nation's holistic development. There is a need for lots of capital to be available, accessible, and affordable. The world progresses through partnerships and not through polarization.
- For India, 'Environment conservation is a commitment and not a compulsion. Human empowerment is impossible without a better environment and the way forward is through collectiveness rather than selectiveness,' pointed out the Honourable Prime Minister Shri Narendra Modi.

## Making Words Count @WSDS2023



“ There should be a specific link between conserving resources and protecting livelihoods. A horizontal link between institutions at the government and global level is missing, and we need to make these connections.

**Mr Nitin Desai**  
Chairman, TERI



“ Returning to principles of equity and justice should be not only in climate issues but also in sustainable development. We know the known, but from a developing world perspective, we need the ability to do the known. Balancing extremes in global discussions is needed if we need lasting solutions.

**H.E. Dr Bharrat Jagdeo**  
Vice President, Republic of Guyana



“ Transitioning in food and water systems is as important as transitioning in energy systems. Let's ensure that the progress is truly inclusive so that no one is left behind. Step change and progress require a lot of capital; capital that should be available, if available, accessible, and if accessible, affordable.

**H.E. Dr Sultan Al Jaber**  
Special Envoy on Climate Change and  
COP28 President Designate, UAE



“ India has been correcting ecological wrongs into ecological harmony. Living in harmony with nature has been traditionally in our ethos which is reflected in the mantra of the Lifestyle for Environment initiative of India.

**Shri Bhupender Yadav**  
Hon'ble Minister for Environment,  
Forest and Climate Change



“ Environmental conservation is a commitment and not a compulsion for India. Human empowerment is impossible without a better environment and the way forward is through collectiveness rather than selectiveness.

**Shri Narendra Modi**  
Hon'ble Prime Minister of India

## OPENING SESSION

### LEADERSHIP FOR PEOPLE AND NATURE-CENTRED APPROACHES



#### ABOUT THE SESSION

Sustainable and effective climate action demands the joining together of a varied group of stakeholders to act for the planet, from global leaders to youth and corporations. The session's objective was to examine the current global progress made towards deliberating on a holistic and integrated approach to environmental management concerning the significance of nature-centred approaches combined with leadership for people, with a focus on mainstreaming leadership and collaboration across disciplines and exercising creative thinking to address serious environmental concerns.

#### SPEAKERS

##### *Chair's Address*

- Mr Nitin Desai, Chairman, The Energy and Resources Institute

##### *Mainstreaming Sustainable Development- DG's Flag-off*

- Dr Vibha Dhawan, Director General, The Energy and Resources Institute

##### *Presidential Address*

- H.E. Dr Bharrat Jagdeo, Vice President, Republic of Guyana

##### *Keynote Addresses*

- Prof. Jeffrey D Sachs, Professor, Earth Institute and Columbia University
- Mr Manish Bapna, President and Chief Executive Officer, Natural Resources Defense Council

##### *Vote of Thanks*

- Dr Shailly Kedia, Senior Fellow and Associate Director, TERI

**KEY TAKEAWAYS**

- With India holding the G20 Presidency this year, there has been a fundamental shift in global politics that may herald the emergence of a truly multilateral world. India must therefore seize this opportunity to elevate the voice of the Global South on issues relating to sustainable development and climate change.
- Sustainability should be viewed from the perspective of adaptation, which necessitates the creation of nature-based solutions. This will ensure a global impact on sustainability metrics while also preserving ecosystem biodiversity and harmony with nature.
- If vulnerable countries have to build viable sustainable development policies, the world must work together and give support for adaptation and mitigation strategies in these nations. One of the ways is to offer these nations incentives and substitutes so they will continue to maintain the forests.
- This year will see the crucial processes of the global stocktake and the climate negotiations at COP 28, and both these milestones present a golden opportunity to advance the voice of the Global South on matters related to sustainable development and climate action.
- Forests are an integral factor in the subjects of climate solutions, ecosystems, and biodiversity. The Global South's (forest-rich countries) concerns are about protecting the forests while sustaining economic growth. Being large carbon sinks, Guyana's forests have been instrumental in helping the nation reach its net zero target goals.
- India must confront the climate catastrophe. There were three crucial conferences—the Addis Ababa conference on financing for sustainable development, the New York conference on the post-2015 sustainable development framework with its 17 goals and 169 indicators, and the Paris Agreement on climate change at the end of 2015. This period was marked by an exceptionally high level of enthusiasm and positive energy.
- Support to the poor countries is pertinent if the objective of an integrated agenda is to be accomplished in addition to achieving equity in realizing the 2030 targets.

## Making Words Count @WSDS2023



When we started WSDS, 22 years ago, a lot of our focus was on informing people about Sustainable Development, Climate Change, and Land Degradation. Today, our focus is on actions we need to take in order to address sustainable development issues. And that is why the nature of our summit has progressed from an information summit to an action-oriented summit. Last year, we launched Act4Earth; it sought to bring together the leadership of the government, corporations, research institutions, and others to achieve sustainable development goals.

**Mr Nitin Desai**  
Chairman, TERI



To deliberate on issues of climate change and sustainability, TERI through WSDS has brought together prominent leaders from the government, international organizations with academia and civil society to mainstream climate resilience for climate change. We have a long way to go especially in terms of horizontal and vertical integration of sustainable development across spheres. This edition of the summit becomes more important as India is holding G20 Presidency.

**Dr Vibha Dhawan**  
Director General, TERI



If forests were a country, it'd be the third largest country after the USA and China. Still, until now, forests are not included in UNFCCC in a manner that will advantage us in preserving forests. In the last two years, we have expanded Low Carbon Development Strategy to focus more on forests into biodiversity, integrated water management, blue economy, etc. Sustainability means adaptation and we are developing a nature-based solution that has a global impact.

**H.E. Dr Bharrat Jagdeo**  
Vice President, Republic of Guyana



We are amidst droughts, floods, heatwaves, and rising sea levels: everything that was projected. This world is not looking for each other. We are in an exhilarating crisis. The most positive news we have is that we have G20 Presidency in India's hands. This is a fundamental change in global politics which is underway. We are at the beginning of the multi-lateral world.

**Prof. Jeffrey D Sachs**

Professor, Earth Institute and Columbia University



Sustainable development is an integrated agenda. We cannot tackle climate change without recognizing poverty and development. And we cannot tackle poverty without tackling climate change, and there was a recognition that finance was central to both agendas. A 50% of staying below 1.5°C means we can emit only 9 years of emissions we emitted in 2022. As per Climate COP on finance report, the developing world needs 2.3 billion dollars to meet climate goals.

**Mr Manish Bapna**

President and Chief Executive Officer,  
Natural Resources Defense Council



Thanks to each one of you to join the summit where we seek to make commitments for the present and future generations. We remain deeply encouraged by your presence and express our gratitude for your kind words and inspiring messages.

**Dr Shailly Kedia**

Senior Fellow and Associate Director, TERI

## PLENARY SESSION

### FINANCING SUSTAINABLE DEVELOPMENT AND CLIMATE ACTIONS FOR REALIZING THE 2030 AGENDA



#### ABOUT THE SESSION

This plenary session had the esteemed panellists deliberating on climate finance, which is one of the pillars in the proposed Green Development Pact outcome of the G20 under India's G20 presidency. According to the latest financing for Sustainable Development Report, the world has seen some positive developments as far as green energy finance is concerned.

#### SPEAKERS

##### *Introductory Remarks*

- Dr Vibha Dhawan, Director General, TERI

##### *Ministerial Address*

- H.E. Mr Laszlo Borbely, State Counsellor to Prime Minister, Government of Romania

##### *Chair*

- Mr Manish Bapna, President & Chief Executive Officer, Natural Resources Defense Council

##### *MDB Perspective*

- Dr Pradeep Tharakan, Regional Advisor – South Asia, Asian Development Bank

##### *Leadership Addresses*

- Mr Amit Prothi, Director General, Coalition for Disaster Resilient Infrastructure
- Mr Mahendra Singhi, Managing Director and CEO, Dalmia Cement (Bharat) Limited
- Mr Bård Vegar Solhjell, Director General, Norad
- Dr Dhruva Purkayastha, Director – India, Climate Policy Initiative

**KEY TAKEAWAYS**

- Green budgeting is a tool involving budgetary planning designed to systematically map and track the sources of funds, outlays, expenditures, and policies. Areas such as climate adaptation, sustainable consumption and production, biodiversity preservation, and pollution abatement need much more attention.
- The Addis Agenda global framework for financing sustainable development supports the implementation of the 2030 Agenda. This comprises the sustainable development goals through innovative financing and diverse sources of finance including domestic public resources, private business and finance, development cooperation, debt, trade, systemic issues, and technology and capacity.
- Everyone is responsible for contributing to sustainable development. Without a clear message (or an able) partnership with civil society, it is difficult to ensure sustainable investments.
- The COVID-19 pandemic plunged millions into extreme poverty in 2021, and according to the United Nations, one in five developing countries' gross domestic product per capita would not return to 2019 levels by the end of 2023. In this regard, sustainable financing for the future will rest on three pillars: more capital, Paris Agreement-aligned policies, and new investment models.
- There is a need for strengthening financing mechanisms and processes. In this context, every dollar invested in resilient infrastructure will lead to four-fold returns. India needs to build 20 more cities like Mumbai to accommodate the urban push.
- The Indian financial institutions are risk averse and they need to share risk along with multilateral development banks to provide financial access to clean technologies for corporates and small- and medium-sized enterprises SMEs.
- Developing countries have emphasized bridging the financing gap between mitigation and adaptation actions. Questions around barriers towards scalable financing for adaptation and resilience must be addressed. India is a global leader and it has shown leadership in solar power, hydrogen, and even in its G20 leadership.
- The five pillars of the Green Development Pact, under India's G20 Presidency, are envisaged to include: LiFE, Circular Economy, Climate Finance, Accelerating Progress on SDGs, and Energy Transitions and Energy Security.

## Making Words Count @WSDS2023



Green budgeting is a tool involving budgetary planning designed to systematically map and track the sources of funds, outlays, expenditures, and policies. Areas such as climate adaptation, sustainable consumption and production, biodiversity preservation, and pollution abatement need much more attention.

**Dr Vibha Dhawan**

Director General, TERI



Everyone is responsible to contribute to sustainable development and lead the vision to be a leader. Without a very clear message and a strong partnership with civil society, we will fail to achieve sustainable investments.

**H.E. Mr Laszlo Borbely**

State Counsellor to Prime Minister, Government of Romania



Sustainable financing for the future will rest on three pillars: more capital, Paris Agreement-aligned policies, and new investment models. Decarbonization is freedom.

**Dr Pradeep Tharakan**

Regional Advisor –South Asia, Asian Development Bank



Every dollar invested in resilient infrastructure will lead to four-fold returns. India needs to build 20 more cities like Mumbai to accommodate the urban push. The globe is already 1°C warmer and it is unlikely we will stay within the 1.5°C target.

**Mr Amit Prothi**

Director General, Coalition for Disaster Resilient Infrastructure



India's green growth strategy has worked. The Indian financial institutions are risk averse and they need to share risk along with MDBs to provide financial access to clean technologies for Indian corporates and SMEs.

**Mr Mahendra Singhi**

Managing Director and CEO, Dalmia Cement (Bharat) Limited



India is a global leader in so many ways. It has shown leadership in solar power, hydrogen, and even in its G20 leadership.

**Mr Bård Vegar Solhjell**

Director General, Norad



Cost of money is far higher in emerging economies than in OECD countries; nearly seven times higher than OECD countries. Therefore, modification of the financial architecture to socialize the climate investments is needed.

**Dr Dhruva Purkayastha**

Director – India, Climate Policy Initiative



We are at a crossroads between two very different futures. We know finance is at the heart of the better environmental future we are hoping for.

**Mr Manish Bapna**

President and Chief Executive Officer, Natural Resources Defense Council

## FIRESIDE CHAT

### DRIVING AMBITION AND ACTION FOR A SUSTAINABLE FUTURE



#### ABOUT THE SESSION

As the quest for a sustainable future is the only thing binding the globe together, it is crucial that major corporations, as well as governments and international organizations, take the lead in defending the planet and its intricate ecosystems. The fireside conversation sought inputs from eminent speakers on how G20 can inspire the developed world to elevate its ambition in the fight against climate change. At the end of the session, TERI and the Government of Guyana signed a Memorandum of Understanding and agreed to collaborate, share expertise, and act as knowledge partners in working towards sustainable development of agriculture, agribusiness, and related areas in the country of Guyana. The focus areas include nano-fertilizers, bio-pesticides and nano-pesticides, mycorrhiza products, and agricultural crop diversification.

#### SPEAKERS

##### *Panellists*

- H.E. Dr Bharrat Jagdeo, Vice President, Republic of Guyana
- Prof. Jeffrey D Sachs, Professor, Earth Institute and Columbia University

##### *Moderator*

- Ambassador Manjeev Singh Puri, Distinguished Fellow, TERI

#### KEY TAKEAWAYS

- The idea of multilateralism that is required must reflect the entire world, focusing on emerging nations. There is a necessity to address climate change demands, and come up with robust solutions, possibly within existing structures or through incremental transformation.

- The UN charter is the closest in terms of reaching the goal of multilateralism. The proposal must be implemented because it was the best one that the best American president has ever had. At present, it is not functioning quite well.
- Predictability is required if significant amounts of private funding are to be obtained to address critical climate issues, and a carbon price in particular offers that predictability.
- Politics and its intertwining with economics could be the answer to all concerns and issues surrounding climate change.
- The developing world absorbed a larger share of the carbon budget despite the underground reality that the developing world has a massive energy deficit among many people who do not even have access to electricity. It is now almost a case of equal burden sharing, as small countries must also make equal pledges for decarbonization under the Paris Agreement.
- Countries have to go through a nightmare when it comes to the practice of intermediation of funds because they have to fill out forms that are frequently difficult to navigate, and it becomes more difficult and complex to raise money in the private sector – especially if there is a limited technical capability – for amounts to the tune of hundred million dollars.

## Making Words Count @WSDS2023



The answer to sustainability lies in politics and its intertwining with economics for nation-states like India. Nation states have to learn to collaborate for their own benefit and future; we need to work and act together.

**Ambassador Manjeev Singh Puri**

Distinguished Fellow, TERI



Common But Differential Responsibilities (CBDRs) have been effectively eroded to equal burden sharing because the developed world refused to enhance its decarbonization. We have to reform the entire architecture for scaling up funding for achieving greening infrastructure.

**H.E. Dr Bharrat Jagdeo**

Vice President, Republic of Guyana



Multilateralism is essential for developing countries as it represents the whole world and not just the North Atlantic world. A stronger African Union will lead to a better world along with India and China as I believe in a world with strong regional cooperation between nation states.

**Prof. Jeffery D Sachs**

Professor, Earth Institute Columbia University



## PLENARY SESSION

### G20 LEADERSHIP FOR A GREEN DEVELOPMENT PACT



#### ABOUT THE SESSION

In this plenary, discussions on various topics unfolded, which included proposals on the specifics of the Green Development Pact, internalization of LiFE through the G20 forum, a collaboration of G20 countries to further circular economy, norms on climate finance that can be pushed for through the G20 and G7 forums, a collaboration of G20 countries to address the energy trilemma of energy security, energy equity, and environmental sustainability, and the role of G20 in accelerating progress on the sustainable development goals.

#### SPEAKERS

##### *Global Leadership Message*

- H.E. Mr Michael Bloomberg, UN Secretary-General's Special Envoy for Climate Ambition and Solutions

##### *Sherpa's Vision Address*

- Mr Amitabh Kant, Sherpa, G20, Ministry of External Affairs

##### *Ministerial Addresses*

- H.E. Mr Steven Guilbeault, Minister, Environment and Climate Change, Canada
- H.E. Mr Hiroshi Ono, Vice-Minister for Global Environmental Affairs, Ministry of the Environment, Japan

##### *Keynote Addresses*

- Prof Iain Martin, Vice Chancellor, Deakin University
- Dr Bruno Oberle, Director General, International Union for Conservation of Nature

##### *Moderators*

- Dr Anshu Bharadwaj, Chief Executive Officer, Shakti Sustainable Energy Foundation
- Ms Suruchi Bhadwal, Director, TERI

## KEY TAKEAWAYS

- University–Government–Industry partnership is needed to address climate change and other deliverables that must be achieved. This is an issue that requires coalition and framing through the G20.
- To decarbonize the world, it is important to decarbonize the hard-to-abate sectors and, therefore, renewables are needed to crack water electrolyzers to produce green hydrogen at a long size and scale, and entrepreneurs require long-term institutional financing or lending and new instruments that can enable overcoming all challenges.
- Green Development Pact requires a major behavioural change in terms of the consumption pattern that includes community and individual actions.
- Lifestyle for Environment has great potential to reduce global emissions. More cooperation on the project is required for the establishment of high-integrity problem markets through agency mechanisms from all border countries.
- The 100 billion investment is a long way to go, as committed during the Kunming Montreal process, though all developed countries are investing around 2.5% of the gross domestic product in creating and maintaining the sustainability infrastructure.
- As issues related to pollution in Indian cities are relative to the burning of agricultural waste, second-generation biofuels will help reduce that by using wastes of any product from agriculture to produce biofuels.
- All standards of flex-fuel hybrid cars from Toyota in Brazil are the lowest emitting vehicles in the world more than electric vehicles in a country with a high percentage of renewables in its electricity mix. Further, ethanol is the best way to transport and store while hydrogen is very dangerous to transport and store. So, the agenda of green hydrogen has enormous potential to reduce dependence on non-renewable resources.

## Making Words Count @WSDS2023



Climate change is accelerating and affecting many lives. At the same time, the steps we take to fight climate change can also benefit the economy and public health by cleaning the air and water. India's G20 presidency is a great opportunity to show the way forward. India is helping other countries to work together and share ideas.

**H.E. Mr Michael Bloomberg**

UN Secretary-General's Special Envoy for Climate Ambition and Solutions



Irrespective of its contribution to carbon emissions, India believes that it must be the first country in the world to industrialize without carbonizing the world. To be able to produce green hydrogen, you need long-term lending of 25-30 years and new instruments that can enable you to do hedging.

**Mr Amitabh Kant**

Sherpa, G20, Ministry of External Affairs



G20 can go a long way to help the world achieve its climate goals and access clean energy. This is a critical decade for action. Choosing an ambitious path to ensure the best possible future and finding solutions to climate change risks can bring all countries to work together. For this, G20 can play a critical role.

**H.E. Mr Steven Guilbeault**

Minister, Environment and Climate Change, Canada



Demand-side measures identified in LiFE have great potential to reduce global emissions. Moreover, several approaches can identify sustainable advantages in technology to increase resource efficiency, and the circular economy concept under the G20 green development pact is important.

**H.E. Mr Hiroshi Ono**

Vice-Minister for Global Environmental Affairs, Ministry of the Environment, Japan



On the climate and mitigation side, it is a different game. It is not global good, it is about creating a completely new infrastructure and changing the infrastructure (model) from a fossil-fuel-linked infrastructure to a non-fossil fuel and not-carbon-bounded one.

**Dr Bruno Oberle**

Director General, International Union for Conservation of Nature



G20 is an opportunity for Brazil and India to come together. The second-generation biofuels in India will be a revolution.

**H.E. Mr Andre Correa do Lago**

Ambassador of Brazil to India and Bhutan



Universities have played a fundamental role in giving us the technologies that enable us to address climate change. It is not only about science; it is about developing policies as well. Individual institutions trying out things and leading locally are essential. I think we look to our leaders to enable and facilitate that change through policy, robust models, support, and encouragement.

**Prof. Iain Martin**

Vice Chancellor, Deakin University



## PLENARY SESSION

### LIFESTYLES FOR ENVIRONMENT: INSTITUTIONS, POLICIES, AND SOCIAL MOVEMENTS



#### ABOUT THE SESSION

The session aimed to highlight the importance of LiFE (Lifestyle for Environment) as one of the strategies to combat climate change risks. The mission LiFE was announced by the Hon'ble Prime Minister of India, Shri Narendra Modi, as part of COP26 of the UNFCCC at Glasgow, United Kingdom. Discussions revolved around demystifying the concept of LiFE, its need and importance in sustainable development, and the direction in which the policies, institutions, and governance mechanisms need to evolve to integrate its concept.

#### SPEAKERS

##### *Chair*

Dr Prodipto Ghosh, Distinguished Fellow, TERI

##### *Ministerial Addresses*

- H.E. Ms Mariam Almhairi, Minister, Ministry of Climate Change and Environment, United Arab Emirates
- H.E. Dr Yasmine Fouad, Minister, Ministry of Environment, Egypt

##### *Global Leadership Addresses*

- Prof. Jeffrey D. Sachs, Professor, Earth Institute and Columbia University
- Prof. Jean-Pascal van Ypersele, Former IPCC Vice-Chair
- Dr Erik Solheim, Former Executive Director of UN Environment and President Green Belt and Road Institute, BRI Green Development Institute
- Dr Janez Potočnik, Co-chair, International Resource Panel

##### *Discussant*

- Dr Suneel Pandey, Director, TERI

## **KEY TAKEAWAYS**

- Conceptual clarity is required concerning the LiFE initiative. The assessment indices for sustainable consumption and production need to be more objective and transparent.
- A total of three-fourths of the emission reduction can be achieved through technological transformation and not just by lifestyle changes. So, the effort must be directed more towards technology transition with an appropriate mix of behavioural change.
- Lifestyle changes by individuals should be facilitated by legal, economic, and policy frameworks that influence individual action.
- Demand management or demand reduction as a strategy should be applied keeping in mind the principles of equity. The burden of demand reduction should not fall on people with a lack of sufficient access to resources.
- Community participation and awareness, robust partnerships, and collective action are necessary for the implementation of the mission called LiFE.

## Making Words Count @WSDS2023



Every individual has a role to play to encourage a sustainable way of living. We have been overconsuming for too long and now we have to think about every small action that we can do because that accumulates and will make a difference. The LiFE initiative really reflects the true empowerment of the community to overcome global challenges.

**Ms Mariam Almheiri**

Minister, Ministry of Climate Change and Environment,  
United Arab Emirates



The comprehensive concepts of sustainable development will not be achieved without participation at both the international and the national levels. Discussions are important between all stakeholders, such as the government, private sector, and scientists in addition to studying past experiences, while working to understand the ground reality and trying to change it for the better to achieve optimal exploitation of natural resources.

**Dr Ali Abou Senna**

CEO, Egyptian Environmental Affairs Agency and Assistant  
Minister



For a huge amount of transformation, it is a change of technology and not a change of lifestyle. If we internalize all the externalities of a cow, they would be a lot more expensive, and the conclusion about it is, that people are going to consume less beef – that is a significant behavioural change of diet to a more ‘Indian style’ diet.

**Prof. Jeffrey D Sachs**

Professor, Earth Institute and Columbia University



We have been using the atmosphere as a big dustbin, as a free dustbin mostly and the size of the dustbin the inhabitants of this planet are using everywhere, is not the same. Lifestyles are of course led by individuals, but there is a collective aspect to that notion. Governments, the private sector, and other actors have a responsibility in terms of providing the right framework to facilitate action by individuals.

**Prof. Jean-Pascal van Ypersele**

Former Vice Chair, IPCC



We must avoid a negative finger-pointing agenda and talk about positive agenda for change – it is mainly about change in society, political decisions to organize society, and business decisions as to how we draw on technology to scale that change, adding to that the component of lifestyle change.

**Dr Erik Solheim**

Former Executive Director of UN Environment and President Green Belt and Road Institute, BRI Green Development Institute



Trying to maintain the current economic system and at the same time fixing a chronic triple planetary crisis is not consistent for it creates a lot of confusion. Taking painkillers will not heal chronic diseases. We need to move from an extraction-based production to a creation-based one. We must reward the responsible, innovative, and creative ways of meeting human needs.

**Dr Janez Potočnik**

Co-chair, International Resource Panel



## PLENARY SESSION

### TOWARDS ENERGY SECURITY AND INCLUSIVE ENERGY TRANSITIONS



#### ABOUT THE SESSION

Energy security has been one of the central pillars for countries around the world, as energy is essential for human development and economic growth. Energy security according to the International Energy Agency is the uninterrupted availability of energy sources at an affordable price. The Russia–Ukraine conflict situation has an impact on energy security, especially in the European Union (EU) where countries are speeding away from reliance on fossil fuels. In this background, the session aimed to explore the imperatives of inclusion in energy transitions in terms of availability, accessibility, affordability, awareness, acceptability, reliability, and demand and supply policy interventions.

#### SPEAKERS

##### *Ministerial Addresses*

- Mr Suman Bery, Vice Chairperson, NITI Aayog, India
- H.E. Ms Kadri Simson, European Commissioner for Energy

##### *Leadership Addresses*

- Dr Damilola Ogunbiyi, CEO and Special Representative of the UN Secretary-General for Sustainable Energy for All
- Mr Arne Walther, Former Chairman, International Energy Agency
- Lord Adair Turner, Chairman, Energy Transitions Commission
- Prof. Kazuhiko Takeuchi, President, Institute for Global Environmental Studies
- Dr Jon Creyts, Chief Executive Officer, Rocky Mountain Institute
- Mr Saurabh Kumar, India Head, Global Energy Alliance for People and Planet
- Ms Seema Paul, Program Director, Sequoia Climate Foundation

##### *Moderator*

- Mr AK Saxena, Senior Director, TERI

## **KEY TAKEAWAYS**

- It is important to have nimble and agile policies along with substantial government actions for facilitating new energy resources. Carefully targeted subsidy schemes would encourage renewables while ensuring affordability.
- Creating common transparent and interoperable standards across the complex global supply chain is essential. Engagement on Scope 3 emissions, involvement of MSME sectors, and pulling forward entrepreneurial activity will ensure solutions towards sustainable development.
- Producers of low-carbon steel, low-carbon cement, and other materials must be rewarded so that those countries and companies buying these products can gain confidence about contributing to global climate goals.
- Hydrogen can act as the best solution for decarbonizing heavy industry and other 'hard-to-abate' sectors. Electricity grid integration and regional interconnections should also be prioritized to improve energy security.
- Collective action is needed to end energy poverty. A just energy transition must be promoted. To meet the twin objectives of energy access and energy transition, more funding should be provided to developing countries.

## Making Words Count @WSDS2023



Energy security is usually seen from the supply-side perspective. However, it is equally important to underline that the demand side has an extremely important role in furthering energy security. We need to keep in mind that nobody is left behind in our quest for meeting the demand for energy from newer sources.

**Mr A K Saxena**  
Senior Director, TERI



Green hydrogen will be a part of India's success and it will be a pillar of our energy dialogue in future. One year ago, the Russian invasion of Ukraine kicked off a huge shift and how we think of our energy systems. We have not changed course but simply the speed at which we reach our end destination. Our sustainability and climate goals remain the same. Our ambition is now even higher. Accelerating the roll-out of renewables is a strategic investment in our sustainable future and economic growth. It is the key to unlocking our energy security.

**H.E. Ms Kadri Simson**  
European Commissioner for Energy



Hon'ble Prime Minister Shri Narendra Modi's 'Lifestyle for the Environment' mission essentially looks to citizens to be the custodians of the planet and not just the government. For a country like India, nimble and agile policies as well as substantial government actions are required for facilitating new energy sources. A central policy design dilemma is: how do you provide the protection or how do you encourage renewables while ensuring affordability? The answer to that obviously lies in carefully targeted subsidy schemes.

**Mr Suman Bery**  
Vice Chairperson, NITI Aayog, India (TBC)



The G20 countries have to accelerate the energy transition. It is vital to provide more funding to developing countries to ensure that the twin objectives – energy access and energy transition – are met. There is no pathway to ‘net zero’ without addressing energy poverty systematically. So, we must use every opportunity to act decisively.

**Dr Damilola Ogunbiyi**

CEO and Special Representative of the UN Secretary-General for Sustainable Energy for All



We have to focus on the demand and energy efficiency side along with decarbonizing the energy supply. Every time somebody drives down the streets of Delhi or London in a 4-wheeler, 3-wheeler, or 2-wheeler, if it is an internal combustion engine then they will be turning 75% of the energy into heat and only 25% of energy into kinetic energy. If we switch to battery electric vehicles, 90% or more of the energy will provide mobility. To reach net zero we have to decarbonize the energy supply and, in particular, decarbonize the electricity supply. But it is also important for us to focus on the demand side, energy efficiency, and energy productivity.

**Lord Adair Turner**

Chairman, Energy Transitions Commission



India has significant potential to become a leader in renewable energy technologies. We must work together to find innovative solutions for a sustainable future.

**Prof. Kazuhiko Takeuchi**

President, Institute of Global Environmental Studies



We are transitioning in the energy world and India is perfectly poised to build, accelerate, and benefit from it. Clean, green molecules are key resources to decarbonize the base sectors such as steel, ammonia, and shipping.

**Dr Jon Creyts**

Chief Executive Officer, Rocky Mountain Institute





Global developments tell us that we are moving to a new normal. We have to do more than just put on our life jackets, we must navigate through rough waters ahead, of geopolitical change, economic change, and climate change. We are all on the same boat but I am afraid that the boat is leaking.

**Mr Arne Walther**

Former Chairman, International Energy Agency



The policymakers and regulators need to be nimble and need to look at what is needed. There is a need for convergence in terms of ideas, in terms of policies and regulations. And I must say, India stands as a shining example of what ambition would look like, and how we can catalyse very large-scale interventions.

**Mr Saurabh Kumar**

India Head, Global Energy Alliance for People and Planet



If we really emphasize energy efficiency, which is the first fuel and rightly called so, we can reduce the demand for energy and when we reduce the demand for energy, we would reduce the infrastructure investment costs and we do not have to ask for finance from the North. We need it, and we deserve to have it but we do not have to ask for that much more.

**Ms Seema Paul**

Program Director, Sequoia Climate Foundation

## FIRESIDE CHAT

### SUSTAINABLE OCEAN MANAGEMENT FOR PEOPLE AND PLANET



#### ABOUT THE SESSION

The objective of the session was to examine some of the innovations linked to oceans, which include marine spatial planning and how it can contribute to addressing the triple planetary crisis of climate change, pollution, and biodiversity loss. Particular focus was given to policy initiatives as a result of the India-Norway collaboration, and the role it can play to enhance integrated ocean management through marine spatial planning.

#### SPEAKERS

##### *Introductory Remarks*

- Dr Vibha Dhawan, Director General, TERI

##### *Panellists*

- Dr M Ravichandran, Secretary, Ministry of Earth Sciences
- Dr Erik Olsen, Head of Research/Research Manager, Institute of Marine Research

##### *Moderator*

- H.E. Mr Hans Jacob Frydenlund, Norwegian Ambassador

#### KEY TAKEAWAYS

- To enjoy the benefits of the ocean, there is a need to change the behaviour of considering the ocean as the largest garbage dump. It is imperative to find ways to balance competing interests from different economic activities (shipping, fisheries, aquaculture, oil production, and tourism).
- The top-to-bottom approach, which could work in some European countries, might not be suitable for India. The marine management plans must be customized depending on the specific situations and needs of different regions.

- The availability of granular data with respect to social and economic parameters will help in building more robust state-specific marine spatial plans.
- There is a need to develop a holistic understanding of all human activities before coming up with necessary actions and plans in a sustainable manner across sectors. This could lead to economic and social growth – increased income, jobs, and opportunities – without affecting the ecosystem. It also helps in identifying those areas that are unexplored and have potential/opportunities for new economic activities.
- Marine management can be used as a catalyst with the necessary information for the blue economy. In India's case, it is necessary to manoeuvre a more complicated landscape on the local level, state level, and national level, and it needs to fit the system/management cautiously.

## Making Words Count @WSDS2023



Ocean, being a major resource provider, its sustainability is critically intertwined with the well-being of humanity. Sustainable ocean management targets finding solutions to triad issues related to pollution, climate change, and biodiversity loss.

**Dr Vibha Dhawan**  
Director General, TERI



Taking care of ocean stress along with sustainable resource harnessing is the key to ensuring better ocean management. The extent of ocean management planning goes beyond the scientific and technical data inputs, rather it incorporates the dynamics of social and other local/regional factors.

**Dr M Ravichandran**  
Secretary, Ministry of Earth Sciences



An understanding of integrated systems comprising different sectors associated with oceans will help in better planning. Improved marine management and planning can be a catalyst for the blue economy.

**Dr Erik Olsen**  
Head of Research/Research Manager, Institute of Marine Research



The pathways of ocean conservation will be found in the routes of ocean resource extraction. The Indian union territories (Puducherry and Lakshadweep) have immense potential in initiating ocean-conserving activities.

**H.E. Mr Hans Jacob Frydenlund**  
Norwegian Ambassador

## CEO FORUM

### ACCELERATING BUSINESS ACTIONS FOR REALIZING SUSTAINABLE DEVELOPMENT GOALS



#### ABOUT THE SESSION

The world is grappling with unprecedented challenges in the form of socio-economic inequities, unemployment, climate change, environmental degradation, and health crisis. In such a scenario, this session concentrated on how the business sector can play an important role in providing much-needed support in terms of technological development, innovation, and finance. At the end of this session, a Memorandum of Understanding was signed between TERI and Capgemini to accelerate the Sustainability and ESG (Environmental, Social, and Governance) goals. Capgemini will leverage its sustainable advisory and digital expertise while integrating domain industry capabilities of TERI across clean and renewable energy, water management, carbon sequestration, climate change, and overall sustainability management for its new and existing clients.

#### SPEAKERS

##### *Keynote Address*

- Ms Soma Mondal, Chairperson, Steel Authority of India Limited

##### *Leadership Addresses*

- Mr Rasmus Valanko, Managing Director, We Mean Business Coalition
- Mr Naveen Unni, Partner, McKinsey & Company
- Mr Sandeep Bhatia, Managing Director, Capgemini Invent India

##### *Chairs*

- Mr Manish Chourasia, Managing Director & CEO, Tata CleanTech Capital Ltd.
- Mr Girish Sethi, Senior Director, TERI

## KEY TAKEAWAYS

- The power crisis has led to the refocus on fossil fuel infrastructure, which has further led to the reversal of the progress on climate change mitigation, at least in the short term.
- The future solutions will be technology-driven and innovation-based, and here is where corporates can contribute. There have been discussions to make innovative public goods if the benefits must percolate to the bottom of the pyramid while the transition will not be immediate. The unanimity in creating the desired protocol and timeline needs to be achieved.
- There are four 'As' of climate leadership. First A is ambition – set a target, a direction which is aligned with the science. The second A is action – walk the talk. The third A is advocacy – businesses must give confidence to the governments that things can be done efficiently. And the last A is accountability, which is incredibly important. Companies must transparently disclose how they are progressing with their plans.
- Three-fourths of India is yet to be built over the next 50 years. It is a once-in-a-lifetime opportunity for India. But it should be done right; every asset that comes hereon has to be green.
- In general, things are clear – what is green and what is not green. But sometimes, what is green can also be in the shades of grey. So, it is important to have a uniform taxonomy, so that the issue of greenwashing is avoided.
- The role of SMEs should not be forgotten or neglected. As far as the 17 SDGs are concerned, the talks surrounding economic growth and inclusivity could be the engines of growth in all countries whether it is the developing or the developed world.

## Making Words Count @WSDS2023



Radical decarbonization of sectors will need a demand management measure, such as a circular economy acceleration. It is important that there is an incentivization of the greening effort by the government. Having green funds will go a long way in ensuring sustainable efforts.

**Ms Soma Mondal**

Chairperson, Steel Authority of India Limited



Government plays a huge role. It can provide the right signals. If we are talking about demand signals, green public procurement can have a significant role in many countries in terms of incentivizing some of the 'First Investments' while creating that market and the business case.

**Mr Rasmus Valanko**

Managing Director, We Mean Business Coalition



Three-fourths of India is yet to be built over the next 50 years. It is a once-in-a-lifetime opportunity for India. But we have to do it right; we have to build it green and every asset that comes hereon has to be green. We always overestimate what we can do in 1 year, and we always underestimate what we can do in 10.

**Mr Naveen Unni**

Partner, McKinsey and Company



If you want me to leave three messages, just put them down into three areas – commit, act, and monitor. The last part of 'monitor' is very clear – how can I have ESG? It is just not for compliance or getting funds, but also to make sure that internally, you are looking at everything which impacts the ESG on the 17 parameters.

**Mr Sandeep Bhatia**

Managing Director, Capgemini Invent India



When it comes to Global North, where we have huge savings, one thing that should be clear is that the capital which is flowing naturally should never be taken as something which is coming because of their efforts. It is a capital system because of which capital is coming. I think where they can make a huge difference is by funding those business models or technologies that are yet to develop. We are betting so much on green hydrogen, on carbon capture and storage – seeing how these technologies can go to Global South.

**Mr Manish Chourasia**

Managing Director and CEO, Tata CleanTech Capital Ltd.



Water and waste are two important subjects that do figure very much in all our SDGs. These are two important topics that we always tend to forget in all the discussions when it comes to SDGs. We always talk about the big companies and sectors (such as steel and cement). But we tend to forget the SMEs. If we look at those 17 SDGs, like economic growth (SDG 8) and (SDG 9), all these talks about economic growth, inclusivity, and SMEs are really the engines of growth in all the countries, whether it is the developing or the developed world.

**Mr Girish Sethi**

Senior Director, TERI



## DAY 2: FEBRUARY 23, 2023

### PLENARY SESSION

#### INSTRUMENTS AND LEADERSHIP FOR INCLUSIVE GREEN GROWTH



#### ABOUT THE SESSION

Green growth involves rethinking growth strategies regarding their impact(s) on environmental sustainability and the environmental resources available to vulnerable groups. Green growth strategies should ensure that the environmental pillar of sustainable development is aligned to meeting economic and social objectives. With this perspective, the first plenary session on Day 2 of WSDS focused on the instrumental role of leadership and policymaking in achieving green growth.

#### SPEAKERS

*Keynote Ministerial Address by Chief Guest*

- Shri Sarbananda Sonowal, Hon'ble Union Cabinet Minister, Ministry of Ports, Shipping and Waterways

*Ministerial Addresses*

- H.E. Ms Gina Lund, Governor, Agder County, Norway
- H.E. Ms Terhi Lehtonen, Deputy Minister, Ministry of Environment for Finland

*Leadership Address*

- Ms Helen Clarkson, CEO, The Climate Group

*Special Remarks*

- Mr Kartikeya Desai, Founder, Desai & Associates
- Mr Jagjeet Singh Sareen, Principal, Dalberg Advisors
- Mr Abhinav Singh, Director, Amazon India

#### *Co-chair(s)*

- Ms Kathleen McGinty, Vice President & Chief Sustainability Government and Regulatory Affairs Officer, Johnson Controls
- Mr Ajay Shankar, Distinguished Fellow, TERI

#### **KEY TAKEAWAYS**

- Green growth should be imperative to all policies and frameworks for India. Deployment of renewable energy and green hydrogen will be key for the Indian shipping sector to decarbonize and reach the 'net zero' target by 2070.
- Improving governance is an essential enabler of green growth and for green growth to be effective, governments at all levels must work towards policy alignment and coherence.
- The key to tackling climate change is by focusing at the local level through enhanced coordination from the policy actors at the regional level. The need of the hour is green growth and not a green-washed grey industry.
- A green development pact needs to move towards the path of a circular economy. A multi-stakeholder approach including indigenous people should be the key to tackling just transition.
- Some measures to mainstream the environment in economic decision-making by the governments include green budgeting, greening economic surveys, and greening gross domestic product/growth measures. Apart from this, a regulatory policy framework is needed to complement and support market-based instruments.
- It is possible to mobilize adaptation finance through leveraging social finance and de-risking capital investments. The need for climate finance in India is surprisingly towards sustainable lands followed by energy and power.
- G20 should take the initiative to change the narrow narrative of climate finance to a climate-smart transition of the financial sector. There is a need to enhance the capacity of the bureaucracy across G20 for effective implementation of climate action.

## Making Words Count @WSDS2023



Green growth should be imperative to all policies and frameworks for India in the years to come. Deployment of renewable energy and green hydrogen will be key for the Indian shipping sector to decarbonize and reach the 'net zero' target by 2070.

**Shri Sarbanada Sonowal**

Hon'ble Union Cabinet Minister, Ministry of Ports, Shipping and Waterways



The key to tackling climate change is by focusing at the local level through enhanced coordination from the policy actors at the regional level. We need green growth and not a green-washed grey industry.

**H.E. Ms Gina Lund**

Governor, Agder County, Norway



A green development pact needs to move towards the path of a circular economy. A multi-stakeholder approach including indigenous people should be the key to tackling just transition.

**H.E. Ms Terhi Lehtonen**

Deputy Minister, Ministry of Environment for Finland



Sub-national policies should be inclusive and there must be climate action at the local level through a bottom-up approach. The sub-national government often finds it more difficult to justify mobilizing climate finance than the national government.

**Ms Helen Clarkson**

CEO, The Climate Group



It is absolutely possible to mobilize adaptation finance through leveraging social finance and de-risking capital investments. The need for climate finance in India is surprisingly towards sustainable lands followed by energy and power.

**Mr Kartikeya Desai**  
Founder, Desai & Associates



G20 should take the initiative to change the narrow narrative of climate finance to the climate-smart transition of the financial sector. There is a need to enhance the capacity of the bureaucracy across G20 for effective implementation of climate action.

**Mr Jagjeet Singh Sareen**  
Principal, Dalberg Advisors



A stable industry-oriented policy framework is required to achieve low-carbon transition pathways. Amazon has reduced packing wastage to 38% as part of the company's sustainable packaging vision.

**Mr Abhinav Singh**  
Director, Amazon India



Sustainability issues have come up from the basement of buildings to the boardrooms. Climate change negotiations have evolved over time with multi-stakeholder approaches as climate change has become a critical global challenge, which will require collective action for mitigation and adaptation.

**Ms Kathleen McGinty**  
Vice President and Chief Sustainability Government and  
Regulatory Affairs Officer, Johnson Controls



## 15TH CONVOCATION CEREMONY OF TERI SCHOOL OF ADVANCED STUDIES

TERI School of Advanced Studies (TERI SAS), New Delhi, a deemed to be University, held its 15th Convocation on February 23, 2023, at Stein Auditorium, India Habitat Centre, Lodhi Road, New Delhi.

**Dr V K Saraswat, Member, NITI Aayog, Government of India**, was the chief guest. During his illustrious career, Dr Saraswat has been credited with (i) the indigenous development of missiles, namely PRITHVI, DHANUSH, PRAHAAR, and AGNI-5, (ii) the development of two-tiered Ballistic Missiles Defence (BMD) systems, and (iii) initial operational clearance of light combat aircraft TEJAS and Nuclear Submarine INS Arihant.

During the convocation ceremony, **16 scholars received their doctoral degrees and a total of 205 graduates received their master's degrees** in niche and diverse programmes offered by the institute.

As an institution of higher learning and cutting-edge research, TERI SAS has always been ahead of its time in terms of finding sustainable solutions to world challenges. Over the years, the institute tailor-made an informed cadre of sustainability professionals who are well-equipped to tackle, beyond cultural boundaries and sectoral divisions, the interwoven challenges of environmental impacts and ecosystem vulnerability, and have been solution providers to both mitigation and adaptation to climate change that led to a more sustainable development pathway, especially in a post-COVID-19 era.

In his keynote address **Prof. V K Saraswat**, while congratulating the students, emphasized that they are graduating at a time when India is surging forward in all fields. "As transformation leaders from this quality institution, you have the responsibility of balancing the 'Energy, Environment and Sustainability Trilemma' and work towards building a 'knowledge economy' which is built on the fundamentals of sustainable development," said Prof. Saraswat.

The **Chancellor, TERI SAS, Dr Shailesh Nayak** in his address congratulated the outgoing students for the interdisciplinary knowledge gained at TERI SAS. The emphasis should be on solution-oriented approaches in order to anticipate or predict and manage global environmental changes through research on transformative pathways, scenarios, and innovation. Such approaches will facilitate understanding the requirement of what kind of institutional, economic, social, technological, and behavioural changes are required to attain global sustainability, said Dr Nayak. He added, "I am sure, by building global capabilities for long term, sustained observing systems and network, Earth system models, data management systems and infrastructure, we can achieve global sustainability."

Thanking Prof. Saraswat for his motivating speech, **Prof. Prateek Sharma, Vice-Chancellor, TERI SAS, spoke about the legacy TERI SAS** carries as an institute and how it is the collective responsibility of all including the outgoing students to add new feathers to the institute's cap. "It is a matter of pride that the convocation is happening at a time when India has the G20 Presidency. The mission at TERI SAS has always been to produce climate leaders who can be instrumental to enhance global efforts to foster growth and development while pursuing strong climate ambitions. TERI SAS is committed as a research-led institution to develop a knowledge economy based on the principles of sustainability, and I am sure the outgoing students share a special responsibility in pushing the sustainability agenda, broad enough for every sector of the economy to have a multiplier effect for the coming generations," said Prof. Sharma.

TERI SAS is one of the eminent institutes in the country in the field of sustainability education. It was conceived to disseminate the knowledge base created by The Energy and Resources Institute. It offers 13 masters programmes and an interdisciplinary PhD programme in the seven thematic areas of Bioresources and Biotechnology, Business Sustainability, Energy and Environment, Natural Resources Management, Policy Studies, Legal Studies, and Water Science and Governance at its campus in Vasant Kunj, New Delhi and is also coming up with a campus at Hyderabad, Telangana.

## PLENARY SESSION

### NATURE-BASED SOLUTIONS FOR ADDRESSING CLIMATE VULNERABILITY AND ENSURING FOOD SECURITY



#### ABOUT THE SESSION

The session aimed at understanding the interactions and complexities of tackling climate vulnerability and ensuring food security through nature-based solutions (NbS).

#### SPEAKERS

##### *Ministerial Addresses*

- H.E. Mr Naseer Ahamed, Minister, Ministry of Environment, Sri Lanka
- H.E. Christophe Guilhou, Directeur du développement durable - Ministère de l'Europe et des Affaires
- Ms Anne Beathe Tvinnerheim, Minister of International Development, Government of Norway
- The Rt Hon Lord Goldsmith, Minister of State (Energy, Climate and Environment), Foreign, Commonwealth and Development Office

##### *Global Leadership Address*

- Prof. Lindiwe Sibanda, Chair, CGIAR System Board

##### *Keynote Address*

- Mr Manoj Ahuja, Secretary, Ministry of Agriculture and Farmers' Welfare

##### *Leadership Addresses*

- Prof. Anand Patwardhan, Professor, Center for Global Sustainability University of Maryland
- Dr Masahide Kimoto, President, National Institute for Environmental Studies
- Dr Vinod Mathur, Vice Chair, IPBES Bureau
- Dr Purvi Mehta, Deputy Director- Global Growth and Opportunities, Bill and Melinda Gates Foundation

*Science Leadership Address*

- Prof. Jan Zalasiewicz, Chair, Anthropocene Working Group, International Commission on Stratigraphy
- Prof. Mark Williams, Member, Anthropocene Working Group, International Commission on Stratigraphy

*Moderator*

- Dr Kiran Kumar Sharma, Senior Director, TERI

**KEY TAKEAWAYS**

- For the green growth pathway, nature-based solutions are key to addressing many environmental issues including climate change and food security. Nature-based solutions are increasingly being recognized by governments, donors, and academia as an effective approach to adaptation and providing considerable co-benefits. Nature-based solutions also need to include tenure and culture as there are people involved.
- Nature is the first line of defence against climate-related disasters and other impacts of climate change. Emissions must be reduced while ensuring adaptability to climate change and the production of enough food. For instance, Norway is committed to doubling its climate finance and at least tripling the support to adaptation by 2026.
- Nature-based solutions are tools that make it possible to combine the preservation of biodiversity, fight against climate change, and ensure human development. France provides 6 billion euros a year to developing countries as climate finance and one-third of this goes to adaptation.
- Nature-based solutions can provide a third of all cost-effective climate mitigation required by 2030. These initiatives have been overlooked, undervalued, and underfunded. The UK Government has contributed 3 billion pounds towards solutions that protect and restore the natural world.
- Nature-based solutions should be introduced in ways that protect the interests of small-scale farmers, indigenous people, and local communities. Solutions should contribute to reducing farmers' vulnerability, increasing their risk-taking capacity, and providing stable income.
- There is a new technology, new knowledge that supports constructivism, process and decision-making through socialization and collective intelligence. Paradigm and practice shifts apply to CGIAR (formerly Consultative Group on International Agricultural Research) as well, and CGIAR is ready to address the future and current time needs.
- The economics of nature-based solutions needs to be converted into finance and financing models. This is a key issue that has to be solved through the roots of blended finance, bundled innovations, and figuring out the right kind of financial intermediation.
- Diversification has always been one of the fundamental ways through which farmers deal with risks. Therefore, for risk management and for addressing vulnerability, diversification becomes an important component, especially in climate finance and adaptation.
- National Institute for Environmental Studies (NIES), Japan maintains an Asia Pacific Adaptation information platform. The platform provides data and tools to support countries in the Asia Pacific region and can be used to develop national adaptation plans. NIES has also developed a large-scale integrated computer simulation model of the Asia Pacific region, which can be used to evaluate various mitigation and adaptation options quantitatively and help in planning and decision-making.
- To counter the accelerating rates of biodiversity loss and a host of other processes, three things must be done: incentivizing environmental responsibility, reducing and removing perverse subsidies, particularly in the agricultural sector, and promoting nature-based solutions.
- The Kunming-Montreal Global Biodiversity Framework has the target of conserving 30% of land and sea area by 2030. There is an urgent need to bring greater clarity and rigour to the concept and practice of nature-based solutions. Nature-based solutions are an underlining point to be integrated into the Green Development Pact that is being discussed at India's G20 presidency.
- The future record of the Anthropocene needs to be of recovery and not damage.

## Making Words Count @WSDS2023



The world is at a crucial juncture. The global economy is showing all signs of recession. Extreme climate events have started adding fuel to fire, aggravating problems faced by mankind more than ever before. We have disassociated ourselves from nature. The unprecedented destruction of the environment camouflaged under the name of development is paying the price. We all are responsible parties, and more importantly, we all are victims of this.

**H.E. Mr Naseer Ahamed**

Minister, Ministry of Environment, Sri Lanka



Sustainable management of agricultural soils and farming methods that improve soil health and structure also make it possible to increase production and reduce the risk of and damage caused by flooding and drought. Such actions are often low cost and low risk, and can have beneficial social effects. It can also help to maintain our ecosystems and serve as examples that can be up-scaled.

**Ms Anne Beathe Tvinnereim**

Minister of International Development, Government of Norway



The climate and environmental crisis are fundamental drivers of food insecurity and unsustainable land use is a fundamental driver of the climate and environmental crisis. And we will only overcome these interlinked challenges and achieve sustainable development with the courage, determination, and honesty of governments, businesses, investors, and individuals.

**The Rt Hon Lord Goldsmith**

Minister of State (Energy, Climate and Environment),  
Foreign, Commonwealth & Development Office



Nature-based solutions must make our food systems more sustainable and resilient. It is at the core of our international strategy along with nutrition and sustainable agriculture.

**H.E. Christophe Guilhou**

Secretary in the French MEA, Department of Sustainable Development



We are ready to do our part. We will engage at all levels. This panel presents an enormous amount of influence, let us embrace that power. Let us put our heads together and design and implement nature-positive solutions.

**Prof. Lindiwe Sibanda**  
Chair, CGIAR System Board



Beyond protection, we have to restore what we have lost and then enhance and strengthen for our continual well-being. In many cultures, including ours here, we have a rather different perspective; we do not see nature and society as being distinct but rather we are an integral part of nature as nature is of us.

**Prof. Anand Patwardhan**  
Professor, Center for Global Sustainability, University of Maryland



For the sake of tackling the climate crisis and ensuring food security, I believe there is no single solution that resolves everything. But I am sure that further communication and collaboration amongst researchers and stakeholders in various sectors will be crucial.

**Dr Masahide Kimoto, President**  
National Institute for Environmental Studies



Nature-based solutions and nature-friendly solutions, both of them are indeed the most cost-effective ways of meeting the sustainable development goals. Nature-based solutions need to be integrated into the Green Development Pact that we are talking about in India's G20 presidency.

**Dr Vinod Mathur**  
Vice Chair, IPBES Bureau



Climate is not just an ecological issue; it is also an economic issue and climate is also an equity issue. The smaller the farmer, the much higher his and most importantly her vulnerability towards the risk of climate.

**Dr Purvi Mehta**

Deputy Director- Global Growth and Opportunities  
Bill & Melinda Gates Foundation



The amount of industrial carbon dioxide in the atmosphere is about a trillion tonnes and it is only intensifying. Earth is now absorbing more heat than it is radiating and most of it is going to the ocean.

**Prof. Jan Zalasiewicz**

Chair, Anthropocene Working Group  
International Commission on Stratigraphy



At a planetary scale, in the past 10,000 years, we have halved the biosphere of earth, which is now accelerating. Earth's surface has been reconfigured, half of the habitable land is used for farming, three-quarters of this is for animals and dairy, and a third of other land is used to feed them. All this leaves less space for biodiversity and risks mass extinction.

**Prof. Mark Williams**

Member, Anthropocene Working Group  
International Commission on Stratigraphy



CGIAR is reorganizing itself. Sri Lanka's resolve to implement NbS by 2050 is underway. In Bihar, 80% of new investments are going to climate change for agriculture, which is a collective resolve. Solutions have to come from within nature itself. There are tools and technologies available. Positive actions are already happening.

**Dr Kiran Kumar Sharma**

Senior Director, TERI



## TAA-TERI IN MEMORIAM SESSION

### WHAT WOULD DR PACHAURI'S PRIORITIES BE FOR INDIA AND THE WORLD TODAY?



#### **SPEAKERS**

##### *Reflections*

- Mr Nitin Desai, Chairman, TERI
- H.E. Dr Ashni K Singh, Hon'ble Minister of Finance, Guyana
- Mr Janos Pasztor, Executive Director, Carnegie Climate Governance Initiative
- Dr Saroj Pachauri, Distinguished Scholar, Population Council
- Mr Rakesh Kacker, TERI Alumni Association
- Dr Vibha Dhawan, Director General, TERI

##### *Moderator*

- Dr Priyanka Kochhar, President, TERI Alumni Association

#### **ABOUT THE SESSION**

TERI's visionary Founder-Director Dr Rajendra Kumar Pachauri's leadership, vision, and hard work had made TERI the leading voice in energy and climate change that it is today. Throughout his tenure as IPCC Chairman, Dr Pachauri helped in raising awareness and building meaningful conversations on climate change and its impacts at a global level. It was in this same vein that he instituted the World Sustainable Development Summit (WSDS), formerly known as the Delhi Sustainable Development Summit, in 2001 to bring together governments, global leaders, policymakers, businesses, civil society organizations, youth, and thought leaders to work towards the common goal of sustainable development and environmental conservation.

In this WSDS, panellists and experts gathered to recall Dr Pachauri's passion for environmental conservation for a greener and sustainable future. The session titled 'In Memoriam' built on his ideals, ideas, and vision to reimagine sustainable development pathways for India and the world, given the present geo-political context. Panellists expressed their views and thoughts on what would have been Dr Pachauri's priorities for India and the world today.

### **KEY REFLECTIONS**

- Reminiscences on an exceptional leader, extraordinary visionary, and incorrigible optimist – a rare institution in himself – were shared by the esteemed panellists who discussed and reflected on the priorities Dr Pachauri would have had for India today.
- After his passing, two books that were released on Dr Pachauri include Dr R K Pachauri: The Crusader Against Climate Change, which is neither an assessment of his life and work nor a compilation of expressions of good wishes. Instead, it shows the international dimension of his work, from Norway to Mexico and from Japan to the United States, because for him the whole world was one, not divided into the North and the South or the East and the West but one large family. The other book titled Dr R K Pachauri: The Visionary Institution Builder celebrates the life of a legend.
- About the legacy of Dr Pachauri, he occupies a special place in the hearts of people in Guyana. He took a special interest in Guyana's unique circumstances, particularly in relation to sustainable development and forest resources.
- Dr Pachauri was an outstanding scholar and a global titan in the world of science and climate change, and he was committed to the highest standards of scientific rigour, and did outstanding work on the Fifth Assessment Report that led to the outcomes of the Paris Agreement.
- Human condition was at the centre of Dr Pachauri's work. He dedicated his life to advancing the development and improvement of people's conditions around the world. He would have been frustrated that the problem of energy access continues.
- It is easy to view him only as a scientific giant, but it was beautiful to know him as someone who had a great interest in cricket.

## Making Words Count @WSDS2023



Dr Pachauri was an exceptional individual and an extraordinary visionary.

**Dr Priyanka Kochhar**  
President, TERI Alumni Association



Even today, he would remain firmly committed to finding lasting solutions to climate change challenges. For a person of his global scientific stature, it was beautiful also to see the human being in him. He had a great interest in cricket and the cricketing legacy of Guyana. I met him in Guyana and he wanted to visit the Bourda (officially Georgetown Cricket Club Ground) cricket ground that had been home to many classic test matches.

**Dr Ashni Kumar Singh**  
Finance Minister, Guyana



If he would have been here, we would have been more action-oriented (toward addressing climate-related risks).

**Dr Vibha Dhawan**  
Director General, TERI



Patchy was fundamentally an energy guy, and was always forward-looking and forward-thinking. In Nairobi, I remember talking to a person from Mali who was running an NGO in Senegal and he said, "You're working on energy, you have to talk to Dr Pachauri because he's the one who knows everything". Later, I had the opportunity to work with him both as staff at the UN Framework Convention on Climate Change and then a few years later, when I was assistant Secretary General for Climate working with the UN Secretary-General in New York, I was able to interact with him from both sides and it was very interesting.

**Mr Janos Pasztor**  
Executive Director, Carnegie Climate Governance Initiative



Dr Pachauri would make use of the changes in the energy sector in the world, especially after the Ukraine war.

**Mr Rakesh Kacker**  
TERI Alumni Association



It is heartening to see a 'willingness in the developed countries to address the issue of lifestyles' and climate change.

**Mr Nitin Desai**  
Chairman, TERI



One would need to gaze into a crystal ball to see what he would be doing today. But I would see a very dynamic, vibrant, and valiant Patchy.

**Dr Saroj Pachauri**  
Distinguished Scholar, Population Council



Dad's vision was to mobilize 1.8 billion youth of the world through knowledge and inspired action for which he founded the POP Movement.

**Dr Ash Pachauri**  
Co-founder of Protect Our Planet Movement (POP Movement)



## DAY 3: FEBRUARY 24, 2023

### MEDIA COLLOQUIUM

SHAPING PUBLIC AND POLITICAL ATTITUDES, DRIVING SUSTAINABLE DEVELOPMENT



#### ABOUT THE SESSION

In the age of social media, people get information from various sources, much of which is misinformation. Therefore, the responsibility of the media becomes crucial, and the media fraternity needs to get out of the echo chamber and reach out to a wider audience to get the right information. At this media colloquium, seasoned practitioners across realms of communications, who have covered climate change disasters and the environment at large, discussed ways to shape dialogues on climate action in the public and political spheres.

#### SPEAKERS

##### *Panellists*

- Ms Bahar Dutt, Environment Journalist and Conservation Biologist
- Ms Jayashree Nandi, Assistant Editor, Hindustan Times
- Mr Himanshu Shekhar Mishra, Senior Editor, New Delhi Television Ltd
- Ms Aarti Khosla, Founder and Director, Climate Trends
- Mr Rajiv Tikoo, Consulting Editor (Sustainability), Outlook Group
- Mr Rajiv Chhibber, Vice President – External Affairs, Sahajanand Medical Technologies. Ltd.

##### *Moderator*

- Ms P Anima, Media and Communications Lead, TERI

## **KEY TAKEAWAYS**

- The media coverage of climate issues should be comprehensive and consistent; not event based. This would create better awareness among the public about the issues around sustainability and climate crises.
- The COVID-19 pandemic has increased vulnerabilities during disasters. So, there needs to be a national crisis communication policy or protocol in place to educate people on disaster preparedness and guide them during the events of disaster by keeping them informed.
- Media's illiteracy in issues of climate change and sustainable development hampers reportage. So, media schools should tweak their curricula to include these concepts as well.
- Climate journalism should be solution-based, to provide some hope to the public, and climate journalists have to play a significant role in shifting focus from stories of doom and gloom to that of hope.
- It is important to initiate climate talks and discussions around sustainable development at the regional levels and politicians have a significant role to play in this.
- The media and communications sector should adopt a PPP (partnerships for public purpose) model to foster innovation.
- Climate impacts every aspect of human existence. So, there is a need for availability of credible data to study the efficacies of various policies and plans.

## Making Words Count @WSDS2023



The climate crisis needs to be covered consistently. We have to move away from those peaks such as air pollution, extreme heat, and the end-of-the-year COPs. And we are getting there because now there are lots of things happening throughout the year and we also try to identify the stories being covered.

**Ms Jayashree Nandi**  
Assistant Editor, *Hindustan Times*



It is only when there is a crisis that we start reporting extensively. In the pre-disaster phase and the post-disaster phase, there is not much attention. We need to recalibrate our priorities. It needs a new approach, a new strategy, and a new focus to bring all such challenges to mainstream consciousness. To educate people, we need crisis communication protocols at various levels.

**Mr Himanshu Shekhar Mishra**  
Senior Editor, New Delhi Television Ltd



There has to be a skill-set development in the media. There are no trained SDG reporters as per my knowledge. Media schools must also look at their curriculum to integrate courses on sustainable development.

**Mr Rajiv Tikoo**  
Consulting Editor (Sustainability), Outlook Group



Sustainability is an economic story, it is a political story, it is an investigative story and that is how we should be talking to our editor. Good journalism must question power structures. And if we are not doing that, we are failing as journalists.

**Ms Bahar Dutt**  
Environmental Journalist and Conservation Biologist



We have seen a change in national politics in the last 15–17 years, where the Honourable Prime Minister talks about sustainability on various platforms. Also, I feel it is time we move to a PPP (partnerships for a public purpose) model even when we talk of communication and media.

**Mr Rajiv Chhibber**

Vice President- External Affairs, Sahajanand Medical Technologies Ltd.



The research community has only sparsely looked at how media is shaping public opinion on climate and sustainable development. It feels, there is some kind of connection between people's awareness and climate conversations.

**Ms Aarti Khosla**

Founder and Director, Climate Trends



## WOMEN LEADERSHIP SESSION

### PROMOTING DIVERSITY AND INCLUSION FOR A GREENER FUTURE



#### ABOUT THE SESSION

This session facilitated a platform where a strong panel of women leaders across the world came together and deliberated on the path to a sustainable future for all. The discussions revolved around ways to address the numerous challenges confronting women and gender minorities in leadership positions, including poor access to social and economic capital, a constraining gender culture, a paucity of role models/mentors, and inadequate positive attitudes about their own personal capacities.

#### SPEAKERS

##### *Ministerial Addresses*

- H.E. Ms Elba Rosa Pérez Montoya, Minister of Science, Technology and Environment Republic of Cuba
- H.E. Ms Nialé Kaba, Minister of Planning and Development, Republic of Côte d'Ivoire
- H.E. Ms Emma Theofelus, Hon'ble Deputy Minister of Information, Communication, and Technology, Namibia

##### *Keynote Address*

- Dr Soumya Swaminathan, Former Chief Scientist, World Health Organization

##### *Special Addresses*

- Ms Riddhima Yadav, Board Director of the Institute for Women, Peace and Security
- Prof. Prateek Sharma, Vice Chancellor, TERI School of Advanced Studies

### *Chair*

- Ms Deepali Khanna, Vice President, The Rockefeller Foundation

### **KEY TAKEAWAYS**

- One of the biggest fallacies in the gender and climate discourse has been either elevating women to the status of heroes or relegating them to that of being mere victims.
- Promotion of diversity and inclusion drives a just and equitable world. Therefore, women leaders are critical to leadership.
- Reports and decisions in favour of women must be put into effect to ensure accommodation of needs. There is a need for emphasis on education and training because only well-trained women can contribute to development and higher leadership.
- Despite the exorbitant usage of the word 'intersectionality', much of the world continues to design solutions in silos — keeping women outside the decision-making process and, consequently, limiting the perspectives for holistic policymaking.
- The 2030 Agenda for Sustainable Development rightly calls for ensuring women's full and effective participation and equal opportunities in leadership at all levels of decision-making in political, economic, and public life. Women must be structurally represented in the decision-making process at all levels.
- Senior leaders with an emphatic streak can ensure minimum gender bias. Women have led sustainable development actions as activists, advocates, and scientists and yet, men outpace women in leadership roles and pay parity across sectors including corporates, non-profits, governments, law, education, and security establishments.
- Just and inclusive spaces in the private sector hold the resources to drive capital and ensure that there are more women leaders in boardrooms. As climate is a behaviour-driven phenomenon, it is important to drive the economic and financial rationale towards women for a green economy.

## Making Words Count @WSDS2023



Countries must pay attention to important social, economic, and environmental goals and indicators in the global context, which is affected by triple environmental crises that include climate change, loss of biological biodiversity, and environmental pollution.

**H.E. Ms Elba Rosa Perez Montoya**

Minister of Science, Technology and Environment, Republic of Cuba



The mindset of women as leaders explains the reluctance of political actors to favour and encourage women's participation on the electoral list. The approach to taking climate actions must be inclusive with the establishment of mechanisms and means, whereby effective implementation is assured.

**H.E. Ms Nialé Kaba**

Minister of Planning and Development, Republic of Côte d'Ivoire



Specific and intentional actions were taken to mainstream women into leadership in Namibia. There must be a willingness to trust women to take lead as far as senior positions are concerned.

**H.E. Ms Emma Theofelus**

Hon'ble Deputy Minister of Information, Communication, and Technology, Namibia



The inequity in accessing technologies, resources, and funds needs to be mitigated. The focus should be on distributive innovations. There are a lot of technological solutions available and there is no dearth of innovation happening, especially in India. These innovations must be affordable, sustainable, and eco-friendly.

**Dr Soumya Swaminathan**

Former Chief Scientist, World Health Organization



Adequate representation, the role of the private sector, and the importance of economic ability to drive more inclusive approaches can create a low-carbon economy. Climate leadership does not necessarily need to be measured in terms of experience but can be understood by the impact one can drive both at the individual level, at the company level, and at the national level.

**Ms Riddhima Yadav**

Board Director of the Institute for Women, Peace and Security



The dominant male group tends to create a false sense of comfort and agreement, and as a result of which the voice of women gets unheard. Gender diversity at the company level enhances the company's performance.

**Prof. Prateek Sharma**

Vice Chancellor, TERI SAS



It is crucial to building a greener future for us all by promoting diversity and inclusion. It is no secret that our world is facing significant environmental challenges from climate change to resource depletion.

**Ms Deepali Khanna**

Vice President, The Rockefeller Foundation



## YOUTH PLENARY

### COLLECTIVE ACTION AND INTERGENERATIONAL EQUITY FOR OUR COMMON FUTURE YOUTH



#### ABOUT THE SESSION

In a special youth plenary, fresh and uninhibited perspectives around roles, responsibilities, competencies, and rights of youth in promoting a sustainability agenda were shared by the esteemed panellists on Day 3 of WSDS. During the Youth Climate Conclave's fourth edition, youngsters got an opportunity to draft a 'Youth Pledge' as well. Post the panel discussion, the youth pledge was presented by Mr Aryan Sapra, Sri Guru Tegh Bahadur Khalsa College, Delhi University; Ms Lakshyashikha Pawar, Dyal Singh College, Delhi University; Mr Roshan Thakur, Guru Gobind Singh Indraprastha University; and Ms Lavnika Nanda, Tagore International School, Vasant Vihar, Delhi.

#### SPEAKERS

##### *Leadership Addresses*

- Ms Prachi Shevgaonkar, Founder, Cool the Globe
- Ms Heeta Lakhani, Co-Founder, Youth Negotiators Academy
- Ms Laura De Vries, European Climate Pact Ambassador

##### *Moderators*

- Dr Livleen Kahlon, Senior Fellow, TERI
- Mr Edwin Koekkoek, First Counsellor, European Union Delegation

### **YOUTH CLIMATE CONCLAVE PLEDGE**

- In their pledge, the delegates of the Youth Climate Conclave (YCC) 2023 envisioned an inclusive world that is built on principles of circular economy, ecological consciousness, and sustainable lifestyles, drawing inspiration from the Government of India's 'LiFE' (Lifestyle for Environment) initiative.

### **YOUTH CLIMATE CONCLAVE AWARDS**

- After the pledge, the youth climate conclave winners were announced. The winners belonged to different categories of Photography and Debate competitions. The YCC was led by the Delegation of the European Union to India, the United Nations Children's Fund (UNICEF) India, The Energy and Resources Institute (TERI), Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), Council on Energy, Environment and Water (CEEW), and YuWaah with the Ministry of Environment Forest and Climate Change (MoEFCC) as Nodal Ministry.

### **GREEN OLYMPIAD AWARDS**

- This platform was also utilized to announce the winners of GREEN Olympiad 2022-23. GREEN Olympiad is a leading school-based initiative of TERI. The journey started in 1999 as India's premier environment quiz for school students. It has since then incorporated within itself several stages of initiatives at TERI in the field of sustainability transformation to match the aspirations of the academic community to establish itself as an 'Environment Education' brand. Reaching out to nearly 2000 schools annually in India and the world, this Olympiad is designed for students of Classes 4–12. The overall objective of this initiative is to sensitize and build the capacity of students on environment, sustainability, and green skills.

### **KEY TAKEAWAYS**

- Youth should understand that climate change is not different from people's lives and that people's lives are not independent of climate crises. A holistic approach should be adopted to promote intersectionality and generate interest in climate-related issues.
- Young people must participate in discussions on climate change and sustainable development. Future generations must be enabled so that they can become decision-makers in climate policy discourse.
- Connecting the dots is crucial, and the world should be one when it comes to combating climate change. The experienced and younger generations should promote an exchange of knowledge, actions, and progress.
- Young people should be provided with the right opportunities so that their voices are heard on the international platform to strengthen an action-oriented approach concerning climate change issues.
- Scientific research should focus on climate change solutions and robust policies must be framed. Science should influence policy decisions to move faster towards solutions to climate-related crises.

## Making Words Count @WSDS2023



“ Actions can inspire young people around the world to become ambassadors of change. Of all the stakeholders in the world, youngsters have a yearning to make a difference. Conversations we have today are going to impact not only our lives but also the lives of future generations to come; and for young people, this is not just a responsibility but an opportunity to make an impact.

**Ms Prachi Shevgaonkar**  
Founder, Cool the Globe

”

“ It is important to integrate issues of environment, waste management, consumerism, climate justice, and sustainable lifestyle in the education sector. There is a systematic and intersectional gap for young people wanting to change and take action at the grassroots or internationally at the UN, which needs to be navigated.

**Ms Heeta Lakhani**  
Co-Founder, Youth Negotiators Academy

”

“ First and foremost, it is important to understand that young people have a unique perspective. Because we are going to live a long time after now, we should look at climate change from a long-term perspective.

**Ms Laura De Vries**  
European Climate Pact Ambassador

”

## HIGH-LEVEL SESSION ON COP28 COMPASS

### TOWARDS EQUITY AND CLIMATE JUSTICE



#### ABOUT THE SESSION

- The 28th session of the Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change (UNFCCC) will convene from November 30 to December 12, 2023, at the Expo City Dubai, United Arab Emirates. COP28 will be hosted at a time of continued economic uncertainty, heightened geopolitical tensions, and increasing pressure on food and energy security. With this in mind, a high-level discussion on achieving equity and climate justice was organized to understand how COP28 will be a significant moment because it marks the first Global Stocktake (GST) a comprehensive assessment of progress against the goals of the Paris Agreement.
- In a special announcement at the WSDS 2023, the secretariat of the UNFCCC, the Kyoto Protocol and the Paris Agreement (UNFCCC secretariat), and The Energy and Resources Institute (TERI) signed a Memorandum of Understanding. The Parties aimed to utilize their combined research and expertise in areas including but not limited to energy transition, mitigation, adaptation, and sustainable development. In an effort to advance the agenda on climate change, the Parties would exchange information, knowledge, and data related to science, technology, and innovation as appropriate. They would explore the possibility of exchanging experts as a means of promoting dialogue, collaboration, and knowledge exchange within the field of climate change.

**SPEAKERS***Multilateral Leadership Address*

- H.E. Mr Simon Stiell, Executive Secretary, UN Framework Convention on Climate Change

*Keynote Addresses*

- Ms Leena Nandan, Secretary (EF&CC), Ministry of Environment, Forest and Climate Change
- H.E. Mr Naseer Ahamed, Minister, Ministry of Environment, Sri Lanka
- Ms Jennifer Morgan, State Secretary and Special Envoy for International Climate Action, Federal Foreign Office, Germany

*Discussants*

- Mr Siddharthan Balasubramanian, Senior Advisor, ClimateWorks Foundation
- Dr Henning Wuester, Director, Initiative for Climate Action Transparency
- Mr Janos Pasztor, Executive Director, Carnegie Climate Governance Initiative

*Chair*

- Mr R R Rashmi, Distinguished Fellow, TERI Announcement by TERI and UNFCCC

**KEY TAKEAWAYS**

- The focus of global discourse in the run-up to COP28 should be (a) to make sure the temperature goals of the Paris Agreement are not overshoot through continued focus on mitigation as there is a pertinent need to arrest the overshoot and (b) to reduce the risks in the situation of temperature overshoots.
- Transparency is the backbone of the Paris Agreement. The GST can and must come out with a strong message to parties to develop the biennial transparency reports. The focus in the run-up to COP28 should be on equity across mitigation, adaptation, and finance, and should have tangible outcomes.
- The 'Loss and Damage' fund announced at COP27 gave hope to vulnerable developing countries but left many questions unanswered. The high-income economies need to recalibrate multilateral institutions so that they can enhance the finance flows to developing countries. The need of the hour is to mainstream climate finance.
- Political will and the support of all parties are essential for collective action to push for operationalizing the goals of the Paris Agreement at COP28.
- Finance is a fundamental part of transition pathways. While the 100 billion USD is essential, the focus should be on reforming the financial multilateral institutions to support financial global flows, and this should be the focus of dialogue in the climate discourse going into this year's COP28.

## Making Words Count @WSDS2023



While we have a global goal for mitigation, we do not yet have a global goal for adaptation, which is an important challenge in years to come, for all the major vulnerable communities and countries across the world. We are making a positive transition in some areas but there are other areas where the transition is extremely difficult and, thus, we need to enable the process to become just. We need to promote multilateralism and the consensus-driven process in order to achieve our climate goals.

**Mr R R Rashmi**

Distinguished Fellow, TERI



The pragmatic approach adopted by the people of India and the Indian government in terms of addressing the climate challenges and their leadership in renewable energy deployment is inspiring to the whole world. GST as well as a five-year road map and course correction must be linked to the output of COP29 and COP30.

**H.E. Mr Simon Stiell**

Executive Secretary, UN Framework Convention on Climate Change



We have been focussing on climate mitigation – the reduction in emissions and finances and technology transfer, but that has not been materialized. Therefore, if we keep focusing on what has not happened and relegate to the background, at least something that is doable, quantifiable, and actionable, then we would have taken the discourse back into the very specific arena of action. And that is what I would think COP28 needs to focus on. Green growth is the mainstream of planning especially in the Indian context, which shows our commitment towards growing but in a responsible and sustainable manner.

**Ms Leena Nandan**

Secretary (EF&CC), Ministry of Environment, Forest and Climate Change, India



COP28 is being looked forward in establishing the steps needed to ensure the next climate conference results in climate actions on many fronts including areas like loss and damage, climate finance, early warnings, global stocktake, and global goal on adaptation and food systems. I take the liberty to moot before this forum, the idea for the establishment of a first-of-its-kind international bank which I propose to be called Biosphere Reserve Bank.

**H.E. Mr Naseer Ahamed**

Minister, Ministry of Environment, Sri Lanka



We are far from where we want to be on mitigation, adaptation, and finance. The priority should be on the involvement of local communities in achieving global climate goals.

**Ms Jennifer Morgan**

State Secretary and Special Envoy for International Climate Action, Federal Foreign Office, Germany



If you want to stop the COP, stop climate change. COP28 should make real and tangible progress on substance, not just on the process.

**Mr Siddharthan Balasubramnian**

Senior Advisor, Climate Works Foundation



Transparency is often seen as a technical issue, but it is actually a leadership issue. It is the backbone of the Paris Agreement and without it, the agreement is not going to function. We need to have much better data in order to address the global goal of adaptation. Global stocktake can and must come out with a strong call on countries to get ready for the first bi-annual transparency report in 2024.

**Dr Henning Wuester**

Director, Initiative for Climate Action Transparency



Current warming is causing great consequences, but it is difficult to imagine the consequences of the temperature overshoot. GST can be a good start, and it can come out with the idea of managing the temperature overshoot.

**Mr Janos Pasztor**

Executive Director, Carnegie Climate Governance Initiative

## VALEDICTORY SESSION

### MAINSTREAMING SUSTAINABLE DEVELOPMENT FOR COLLECTIVE ACTION



#### ABOUT THE SESSION

The Valedictory Session of the World Sustainable Development Summit 2023 summarized the key messages emanating from various sessions that were part of the Summit deliberations. During the valedictory, the Act4Earth Manifesto was released, which included messages for the G20 presidency and COP28, followed by the launch of Vasundhara Magazine by TERI School of Advanced Studies (TERI-SAS). The session also served as a platform to showcase the curtain-raiser for the 23rd edition of WSDS, where the dates and the theme of the next edition of the Summit were announced.

#### SPEAKERS

##### *Chair's Address*

- Mr Nitin Desai, Chairman, TERI

##### *Global Leadership Message*

- H.E. Ms Najla Bouden, Prime Minister, Tunisia

##### *Keynote Address*

- Shri Hardeep S. Puri, Hon'ble Union Minister for Housing and Urban Affairs, Government of India

##### *Valedictory Address*

- Mr Simon Stiell, Executive Secretary, UNFCCC

#### *Leadership Addresses*

- H.E. Mr Ugo Astuto, Ambassador, Delegation of the European Union to India
- Dr Ajay Mathur, Director-General, The International Solar Alliance

#### *Women Leadership Address*

- Hon'ble Justice Prathiba Singh, Judge Delhi High Court
- Dr Renu Swarup, Former Secretary, Department of Biotechnology

#### *Launch of Act4Earth Manifesto*

- Launch of Vasundhara Magazine by TERI School of Advanced Studies
- Curtain-raiser for WSDS 2024 – Dr Shailly Kedia, Senior Fellow, TERI

#### *Vote of Thanks*

- Dr Vibha Dhawan, Director General, TERI

#### **KEY TAKEAWAYS**

- An improvement has been seen over the past 30 years in the awareness amongst people, consensus on scientific issues such as climate change, growing engagement of corporates, and increased focus on collective action.
- Multi-stakeholder platforms by their informal nature, bring together a wide range of participants – official and unofficial – which offers a better knowledge and understanding of intertwined challenges. This leads to greater ownership.
- Nations cannot wait for the global financial architecture to change before taking stronger climate action. At the global level, a paradigm shift in the international climate regime is required to move from a country-specific approach to a people-centric approach for climate action.
- This is the first time in G20 that a country has decided to pick on green development as a major theme and push it at the G20 meeting, which is welcoming from the perspective of getting sustainable development as part of the collective action.
- Green hydrogen is important because it brings together the kinds of benefits that people get from non-fossil fuel use in addition to other development benefits.
- Leadership plays a crucial role in driving change, and leadership for sustainable development requires inclusivity, resiliency, adaptability, and creativity.
- Women play a very important role in contributing to the environment. Going forward, tapping women's potential is going to be essential for sustainable development and for achieving climate-related targets and goals.
- There can be no real progress on the SDGs without progress on climate. And there can be no progress on SDGs without India.

## RELEASE OF ACT4EARTH MANIFESTO 2023

As global leaders and stakeholders assembled for the 22nd edition of the World Sustainable Development Summit, it was the planet that took the much-needed centre stage. As we begin heading towards the deep end of the 2030 Agenda, it is now more than ever that the world needs collective visionary leaderships that put forth a collaborative front to act for Earth.

Act4Earth initiative was launched at the valedictory session of WSDS 2022. Building on the discussions of WSDS, this initiative will seek to continuously engage with stakeholders from public and private spheres of life with agendas for global, regional, national, sub-national, and organizational levels. WSDS activities seek to incorporate principles of outcome-based continuity in stakeholder engagement and action. Being a major global summit, WSDS 2023 strengthened engagement to address the serious problems facing this planet through the impacts of climate change, the rapid degradation of the earth's ecosystems both on land and in the ocean as well as the growing disparities between rich and poor.

TERI will engage in research activities that will systematically seek to identify and analyse good practices that can be taken up by governments for climate action and achieve sustainable development goals. Given the vast scope of the theme of WSDS, the focus for analysis will be practices that have maximum impact across systems, sectors, and SDGs. These practices could include decision-making processes such as goal setting or even annual budgets. Efforts will be made to reach out to policymakers and stakeholders to share best practices and ask them to take up practices.

### **WE PLEDGE TO ACT FOR EARTH BY:**

- Bringing together stakeholders including governments, businesses, civil society, women, and youth for creating a paradigm shift in the process of policy-making and visioning for much-needed climate action.
- Reorienting anthropocentric worldviews to nature-centric approaches in policy and governance for inter-generational and intra-generational equity for all life on planet Earth.
- Developing actionable frameworks on sustainable consumption and lifestyles by promoting science-based actions, deriving inspiration from indigenous communities, driving policy change, reorienting markets, and enabling social innovations.
- Identifying linkages and good practices within and across Sustainable Development Goals.
- Amplifying Global South perspectives on important focus areas on global norms around Global Goals on Adaptation, Financing Loss and Damage, Climate Finance, Global Stocktake, and Transparency.
- Informing and steering deliberations on key areas aimed towards fostering green growth and development to achieve meaningful outcomes in the G20 fora.
- Realizing the criticality of the energy trilemma and developing supply and demand solutions using a systems approach.
- Advocating for nature-based solutions through means such as sustainable agricultural practices to ensure food security while simultaneously ensuring climate resilience and ecosystem integrity.
- Fostering integration and mainstreaming of sustainable development through policy innovations such as green budgeting.
- Addressing global commons' governance gaps by strengthening the climate-ocean interface.

The objectives of the Act4Earth initiative include:

- Fast-track meeting of global goals on climate and sustainable development through a continuous engagement process to enable 'talking to walking'.
- Drive actions by governments, at international, national, and sub-national levels by strengthening research-based understanding of sustainable development policies and initiatives from countries across the world.
- Enhance international, national, and sub-national perspectives for paradigm shifts needed for achieving sustainable development and climate goals through the creation and dissemination of knowledge.
- Accelerate solution-based approaches for addressing new and emerging challenges through capacity building and nudging action.

- Strengthen the engagement of youth and stakeholders on varied digital platforms.

Act4Earth Strategic Priority Areas include:

- COP28 Compass
  - Road to Dubai
  - Lifestyles and climate action
- SDG Charter
  - Green budgeting
  - SDG blueprint and non-traditional security

Each initiative will have themes on which TERI and other partner agencies can undertake research, outreach, and capacity-building activities. Depending on the resources raised, activities such as campaigns, podcasts, and documentary films will be undertaken.

## LAUNCH OF VASUNDHARA MAGAZINE (12th edition)

*Vasundhara* comprehensively embodies diverse youth opinions along with the views of field experts on several contemporary burning topics. This magazine is a complete package containing intellectual write-ups loaded with factual information, constructive ways forward, and opinions. At the Valedictory Session of WSDS 2023, the magazine's 12th edition was launched with the central theme 'Genesis'. The issue aims to focus on sustainable technology and its importance in envisioning a greener future. The articles in this edition revolve around the uses and importance of sustainable technology in various sectors, such as agriculture, mobility, health, and construction among others.

## WSDS 2024 CURTAIN-RAISER



Dr Shailly Kedia, Curator of the Summit, announced the theme of WSDS 2024.

Today's challenges for attaining sustainable development are complex and interconnected, and will need everyone to work towards creating a more sustainable future. Leadership plays a crucial role in driving change. Leadership for achieving sustainable development requires inclusivity, resiliency, adaptability, and creativity. With this rationale, the 2024 Edition of the World Sustainable Development Summit will be organized under the umbrella theme of **Leadership for Sustainable Development and Climate Justice**.

Discussions will focus on six thematic areas:

- Sustainable lifestyles
- Integrating sustainable development
- Climate action
- Addressing the energy trilemma
- Adaptation and resilience
- Nature and ecosystems

## Making Words Count @WSDS2023



More work is required in bringing countries together to discuss the issue of sustainable development and climate change and look at it from a global perspective rather than a national interest. We still need to do far more creative work on promoting collective action. This is the first time in G20 that a country has decided to pick on green development as a major theme and push it at the G20 meeting, which is welcoming from the perspective of getting sustainable development as part of the collective action.

**Mr Nitin Desai**  
Chairman, TERI



I urge all the governments at the national level to do a comprehensive review of policies to cater to the contemporary need for sustainable development. The current International Forum is critical for developing nations, especially after the pandemic and fallout in Ukraine, which have led to an unprecedented rise in food and energy prices.

**H.E. Ms Najla Bouden**  
Prime Minister, Tunisia



Food, fertilizer, and fuel are the three areas facing tremendous crises. These three have a solid link with the kind of discussions we should have and are having with reference to the issues of sustainable development. At the global level, a paradigm shift in the international climate regime is required to move from a country-specific approach to a people-centric approach to climate action.

**Shri Hardeep S Puri**  
Hon'ble Union Minister for Housing and Urban Affairs,  
Government of India



There is clear-sightedness about the magnitude of the challenge and there is excitement about the historic possibility of now. This makes COP28 a transformational moment. There is a need for a world where we can build a just society for all and we should knock down barriers.

**Mr Simon Stiell**  
Executive Secretary, UNFCCC



We need to act now and we need to act fast to address climate change. G20 is a great opportunity to inject momentum into our endeavour towards green transition. There can be no real progress on the SDGs without progress on climate. And there can be no progress on SDGs without India.

**H.E. Mr Ugo Astuto**

Ambassador, Delegation of the European Union to India



There is a need to build our solar capacities and it is important to see how we can achieve this feat. The focus is on the phase of convergence, where sustainable development and climate change come together, which forms the heart of the G20 Summit.

**Dr Ajay Mathur**

Director-General, The International Solar Alliance



Women play a very important role in contributing to the environment. Going forward, tapping women's potential is going to be the key to sustainable development and to achieving climate-related targets and goals. While technologies are essential, we need to remember the changes at the grassroots level that we must bring to our country.

**Hon'ble Justice Pratibha Singh**

Judge, Delhi High Court



There is a need for a holistic framework to tackle the challenge before us. We need to learn from case studies that were successful and decipher the steps that led to the success and accordingly implement these whenever and wherever needed.

**Dr Renu Swarup**

Former Secretary, Department of Biotechnology



This WSDS, we have not just discussed the problems but we have also started discussing the way forward. Sustainable development and climate change – these are engraved in each one of us at TERI.




**Dr Vibha Dhawan**

Director General, TERI

# Thematic Tracks

## Group A

Day 2 | February 23, 2023 | 11:30 am–1:00 pm (IST)

Track Name	Venue	Thematic Track Partners
Financing India's Net Zero Ambitions	Jacaranda 1	
Critical Minerals and Materials: Managing Supply Chain Constraints	Jacaranda 2	
No Time to Waste: How Circular Economy Principles Can Address India's Waste- Related Emissions	Magnolia	
Towards Net-Zero Emission Target: Electric Vehicles in Freight	Gulmohar	
Crop-based Agriculture Systems and Climate Adaptative Solutions	Silver Oak 2	
Towards People-Centric Smart City Development	Tamarind	
Transition towards Circular Economy in the Plastic Sector	Casuarina	
Monitoring, Evaluation and Learning Frameworks in India	Marigold	

## FINANCING INDIA'S NET ZERO AMBITIONS

In this thematic track, the esteemed panellists deliberated on the role of private players, institutional investors and their vision, key reforms required, and mechanisms that can be built into the existing policy discourse to achieve India's net-zero targets. Although a move towards building a sustainable financing mechanism would require a strategic and systematic infusion of policy tools, it would also open up the opportunity of redeveloping the entire climate change financial landscape from a 'green vision'.

**Mr Manish Chourasia, Managing Director and CEO, TATA Cleantech**, said a lot of work on various fronts including policy and technology needs to be done. He added that financing is the key.

**Mr Manikkan Sangameswaran, Executive Director and CEO, Radiance Renewables**, said there is a real revolution and movement happening in India right now; and, the developers are completely committed to this delivery.

**Mr Shalabh Tandon, Regional Head of Operations and South Asia Head of Climate Business, International Finance Corporation**, emphasized on standardization and the need to have a template in place so that once a project is approved, money flows in automatically for certain risk parameters.

**Mr Virender Pankaj, CEO, Aseem Infrastructure Finance Limited**, said that for financing in net zero, one must focus on making it work commercially, economically, and from a risk perspective. He added that we have to talk specifically about risk and make it viable. He further said that one thing we need to understand is that the global availability of capital is inversely proportional to risk; so, low-risk markets attract more capital than high-risk markets. People invest in high-risk markets because they want higher returns.

**Mr Peter Mwandri, Associate Data Analyst and Data Modelling, Green Climate Fund (GCF)**, informed that GCF is supporting developing countries and dealing with the challenge of climate change by promoting partnerships towards low carbon emission and climate residential pathways. To date, GCF has approved USD 11.4 billion and India is leading in that initiative.

## CRITICAL MINERALS AND MATERIALS: MANAGING SUPPLY CHAIN CONSTRAINTS

During the 26th session of the Conference of Parties, India committed to meeting half of its electricity requirements from renewable sources by 2030 compared to a quarter today, thus reducing the economy's carbon intensity to less than 45% in 2030 compared to 2005 levels, and achieving the net-zero emissions target by 2070. The stimulating deliberation on the existing supply chain constraints for India, the related security issues, and how geopolitical blocks such as G20 can help stabilize the segments' volatility left the present audience feeling inspired; they felt enriched with significant takeaways.

**Mr Ajay Shankar, Distinguished Fellow, TERI**, remarked that as the world moves towards green energy, 'critical minerals play a critical role'.

**Mr Siddharthan Balasubramania, Principal Strategist, ClimateWorks Foundation**, talked about the recent risks and disruptions from the supply chain, and cautioned how we must remember it should not affect our climate goals. We need to develop a global cooperative framework. And all the excitement of new discoveries in metals and minerals cannot undermine the goal to keep people's welfare our foremost priority.

**Ms Amrita Dasgupta, Energy Analyst, International Energy Agency (IEA)**, explained how the demand for critical minerals like cobalt and nickel is going to increase multi-fold in the energy sector. There are disruptions in the supply value chain, and hence there is a need to ensure adequate and timely investment in diversified sources of supply. Scaling up recycling and promoting technological innovation can pave the way in reducing the demand of critical minerals by almost 10% by 2030, she added.

**Dr Amrita Goldar, Senior Fellow, Indian Council for Research on International Economic Relations (ICRIER)**, noted, there is a need to scale up battery recycling by working on different challenges – majorly

skilling of workers in recycling space. Major recycling costs, almost 40%, account for the collection of waste and transportation and, hence, they need more policy support. There is a need to carry the informal sector along in the process. G20 can be a platform to advocate the role of circular economy and 'Remake in India' in this realm.

**Ms Swati Dsouza, Programme Head India ZEV Centre, University of California Davis**, said electric vehicles' demand is bound to increase and hence the demand for critical minerals for battery manufacturing. India can look to form a strategic alliance with Indonesia and Brazil through the platform of G20 (countries) that have a better manufacturing capacity of minerals so that India does not lose its competitive advantage in the automobile sector.

**Dr Rajesh Chadha, Senior Fellow, Centre for Social and Economic Progress (CSEP)**, noted that assessing the criticality of minerals should be prioritized because unless we know what is least, more, and most critical, it becomes difficult to deliver fruitful policies. Resilient access to critical minerals is required for low-carbon technologies in line with COP26 commitments. There is a need to prioritize the exploration of critical mineral blocks.

**Mr Bhuwan Purohit, Executive Director, Corporate Strategy and Planning, Rubamin Pvt. Limited**, averred, 'Power of Zero' is a hydrometallurgy technology that helps recycle minerals with 'Zero Waste', which must be adopted on a large scale. It is important to bring all the recyclers together at a single platform to initiate the recycling of critical metals at a global scale.

## NO TIME TO WASTE: HOW CIRCULAR ECONOMY PRINCIPLES CAN ADDRESS INDIA'S WASTE-RELATED EMISSIONS

Waste management in cities has improved a lot since the advent of the 'Swachh Bharat Mission'. However, most Indian cities and states still lack proper waste management practices and their infrastructure is poorly designed or non-existent. Major metropolitan cities are hotspots of legacy waste issues and have unscientific landfills, illegal dumping, and burning, leading to public health risks and release of methane emissions. This formed the backbone of this thematic track.

**Ms Roopa Mishra, Ministry of Housing and Urban Affairs**, said India is seeing a paradigm of change with the introduction of decentralized waste management approaches, such as Material Recovery Facility (MRF), bio-methanation plants, community-based models, and so on at cities and panchayats. To keep such decentralized waste management approaches going, changes at the community level, scientific approaches, and remediation of existing dumpsites are required.

**Ms Vandana Rao, Deputy Commissioner, Municipal Corporation of Delhi**, said Sahbhagita Scheme is an essential step for introducing sustainable waste management practices in Delhi. Bulk waste generators are also a concern in the sector of waste management and they are extensively surveyed and various alternatives are being introduced including community-based bio-methanation plant.

**Mr Is'haaq Akoon, Senior Manager, Climate Change, City of Ekurhuleni, South Africa**, said waste is a resource and a source of energy. However, traditional waste management practices must be innovated to better utilize the waste coming out of the cities. Some of the aspects that developing countries such as South Africa and India need to comprehend are the areas where there is a lack of data and resources; these include the waste characterization data, technical in-depth analysis, and identifying best case studies that showcase sustainable waste management practices.

**Dr Ruchika Singh, Director, Sustainable Landscapes and Restoration, WRI-India**, said food loss and food waste are major concerns in the waste sector and a contributor to greenhouse gas emissions. Several aspects such as the quantity of food waste in India are understudied. Initiatives must be introduced to reduce food loss and waste for greater food security and environmental sustainability.

**Mr Tom Frankiewicz, Principal, Climate-Aligned Industries RMI**, observed that most countries heavily rely on landfill and dumpsites to manage waste with lower emphasis at the top of the waste management

hierarchy. Hence, a two-pronged strategy is required and this strategy is underpinned by actionable data that includes waste mapping and country deep dives.

**Dr Suneel Pandey, Senior Fellow and Director, Environment and Waste Management Division, TERI**, said in his concluding remarks that due to heavy dependence on mixed waste disposal, there is a lot of land value locked under disposal facilities and waste processing sites. Bio-mining and landfill mining are efforts to free these land spaces, so that redevelopment could turn these spaces into green lungs for the city.

## TOWARDS NET-ZERO EMISSION TARGET: ELECTRIC VEHICLES IN FREIGHT

India recently overtook China to be the most populous country in the world. With economic growth, India has witnessed a massive increase in urbanization. In this light, the thematic track discussed ways to achieve net-zero emission targets with the help of electric vehicles.

**Dr Vibha Dhawan, Director General, TERI**, highlighted the crucial role played by the transport sector in India's effort to meet net-zero targets. The importance of electric vehicle technology is by far the most practical vehicle technology towards the same, she added.

**Mr Sameer Pandita, Director, Bureau of Energy Efficiency, GoI**, said that not many original equipment manufacturers (OEMs) are making diesel hybrid vehicles or electrical vehicle trucks. Electrification of light motor vehicle is not an issue but for the major contributor of greenhouse gas emission (heavy duty vehicle or HDV), the technology and skilled force are still not there. Until and unless we have technology in HDV, tailor-made for Indian cities, we are not moving ahead.

**Mr N Mohan, CEO, Delhi EV Cell, Government of NCT of Delhi**, said financing will remain a major issue in the absence of endorsement by OEMs. The government could act as a consumer, as seen in the electric bus segment. We should look for such options in the trucking segment as well, as it will give a great push to creating demands for OEMs.

**Ms Trupti Deshpande, Senior Program Manager, Shakti Sustainable Energy Foundation**, said there is a need for collation between fleet owners and manufacturers, where one can put forth the requirements and another can come up with possible models.

**Mr Amit Bhatt, MD (India), ICCT**, shared that the European Union's new CO2 standard for HDV mentions 90% of trucks to be zero-emission by 2040. This shows where the future industry is heading to. The next round of FAME with the inclusion of freight vehicles would be interesting to see. India has been historically following the European automotive industry in most of its regulations.

**Mr Umesh Revankar, CEO and MD, Shriram Transport Finance Company Ltd**, highlighted that costs should come down for the expansive adoption of electric vehicles. The electric vehicles are costlier than their internal combustion engines counterparts even if after a 100% interest rate subsidy, and still, the payback time would be longer than the battery life (3-4 years).

**Mr Sharif Qamar, Fellow and Area Convenor, TERI**, concluded the session with a Vote of Thanks.

## CROP-BASED AGRICULTURE SYSTEMS AND CLIMATE ADAPTATIVE SOLUTIONS

Crop-based agriculture systems account for about 80% of the dietary energy supply, and crops are a significant source of food and income for about 600 million farms in the world. In this regard, the thematic track titled 'Crop-based Agriculture Systems and Climate Adaptative Solutions' brought together experts from the Global South to share their perspectives on the challenges and opportunities in the agrarian sector.

**Mr Siddharth Chaturvedi, Senior Programme Officer, Agricultural Development, Bill and Melinda Gates Foundation (BMGF)**, moderated the session, which explored the solution-based approaches to address climate adaptation challenges in the agriculture sector.

**Mr Ananda Mallawatantri, Advisor to the President, Environment, Climate Change and Green Finance, Government of Sri Lanka**, said Sri Lanka is one of the top ten countries in the world to be affected and hit by climate change. Sri Lanka, as an island, is fairly complex as it encompasses complex interactions between land, forests, and oceans. We are proud to have placed the subject of climate change at the office of the Prime Minister as we all require inter-ministerial interventions, he added.

**Dr Purvi Mehta, Deputy Director, Global Growth and Opportunity, BMGF**, noted sustainability debates have impacts on not only food security but also the nutritional aspects. Along with mitigation, a focus on adaptation is important. There is an asymmetry in climate-related data and the unavailability of solution-based data.

**Dr Shahidur Rashid, Director for South Asia, IFPRI**, said one need not be a climate scientist to feel climate change. During the Ukraine-Russia war, India had a wheat stock that it had sought to export as a gesture of assistance. However, in March 2022, India faced the hottest year due to which it had to revise its forecast and was bound to ban the export of wheat. If we want to address climate change as a serious concern, commitments at the highest level are a must.

**Dr Kiran Kumar Sharma, Senior Director, Sustainable Agriculture, TERI**, said there is a need to explore more on the Internet of Things (IoT) and artificial intelligence for the maintenance of water and natural resources. One must focus on water budgeting, specifically rain-fed agriculture as it comprises about 17% of net sown area.

**Dr Manish Anand, Senior Fellow, TERI**, said there has been an overall consensus that we need a system-based approach across sectors including agriculture, livestock, fisheries, and across scales (local, regional, national, and global). We also need a transformative-adaptive approach, and as we are talking in the Global South context, the issue of embedding it into just transitions framework becomes important.

## TOWARDS PEOPLE-CENTRIC SMART CITY DEVELOPMENT

This thematic track deliberated on how a people-centric smart city calls for a socially just, participatory approach, where people – especially the vulnerable and marginalized groups of society – are empowered to shape and co-create urban interventions in collaboration with the government, and technology acts as a vehicle to achieve the same.

**Ms Kamilla Kristensen Rai, Counsellor, Delegation of the European Union to India**, chaired the session and the Welcome Address was delivered by **Mr Sanjay Seth, Senior Director, TERI** followed by a brief presentation by **Ms Rhea Srivastava, Research Associate, TERI**, which set the context.

**Mr Sanjay Seth, Senior Director, Sustainable Habitat, TERI**, highlighted that the Ministry of Housing and Urban Affairs, the Government of India, has taken a leadership position in initiating several efforts to make cities smart and liveable; these include the Smart City Mission that emphasizes the importance of people-centric smart city development.

**Mr Hitesh Vaidya, Director, National Institute of Urban Affairs**, said a smart city is when one goes to their city and sees good roads, a better working environment, a green box, and that comes with a sense of smartness. To achieve Sustainable Development Goals (SDGs), the intentions have to be converted into action, and the only way is to go back to the people.

**Ms Kathleen McGinty, Vice President and Chief Sustainability Government and Regulatory Affairs Officer, Johnsons Controls**, concentrated on the need for a blend of both technological advance and people's knowledge, and said that technology is the key opportunity but people are our imperatives.

**Ms Vaishali Nandan, Project Head, GIZ India**, remarked that we are very complex in whatever we say in our digital world, which people struggle to understand. So, if we do not simplify it, we do not really reach the masses. We have to reach each and every citizen of the country; whatever language it is, we need to simplify it.

**Dr Panagiotis Karamanos, EU International Urban and Regional Cooperation (IURC)**, stressed we should understand the needs of the people and by understanding the needs, we should plan the project accordingly. Smartphones can be very effective in improving the quality of life and at the same time empowering people.

**Ms Shruti Narayan, Regional Director, South and West Asia, C40 Cities**, highlighted the issue of accessibility and shared that access to technology plays the most important role in disaster management and resilience for the vulnerable groups living in a city.

## TRANSITION TOWARDS CIRCULAR ECONOMY IN THE PLASTIC SECTOR

Plastics have revolutionized almost all sectors for reasons including resistance to environmental degradation, affordability, and accessibility, and are produced with a wide variety of material properties that allow adaptation to many different applications. This thematic track brought fresh insights on sustainable measures and unique solutions that must be implemented considering the identified gaps and opportunities in literature and initiatives.

**Mr Souvik Bhattacharjya, Associate Director, TERI**, delivered the Welcome Address.

**Dr Heinz Schandl, Senior Principal Scientist, CSIRO**, said that the India–Australia Industrial and Research Collaboration for Reducing Plastic Waste project's road map is a clear indicator for the business fraternity, policymakers, and manufacturers to see what and where we stand in terms of plastic and its whereabouts. A collaborative approach is needed for road map implementation.

**Ms Leena Nandan, IAS, Secretary, MoEFCC**, highlighted the need to look at the larger narrative about the production, consumption, and end-of-life of plastics. Green credits can help in plastic waste management and regulation. The ministry is going the extra mile to create efficient plastic waste management on many fronts, and not just imposing new rules, she added.

**Dr Atul Narayan Vaidya, Director, CSIR-NEERI**, said that there has to be a technology-based solution for plastic management. We must look into the recyclability of plastics and its efficiency of how much and how many times a particular plastic is getting recycled. The circular economy cannot be feasible if we do not talk about end-of-life of materials, especially plastics, he added.

**Dr Ashok Khosla, Chairman, Development Alternatives**, highlighted plastics are not going to get banned. We have to be creative enough to bring in innovative solutions. A synergy of plastic waste management and other sectors is needed to add high value to product.

**Dr Prashant Gargava, Member Secretary, CPCB**, observed that extended produce responsibility is facilitating the circular economy approach. CPCB is trying to facilitate how alternative to plastics can be eased into economy.

**Dr Rita Dhodapkar, Principal Technical Officer and Science Secretary, CSIR-NEERI**, said that the management of plastics can lead to less flow of materials in the economy.

**Mr Mahesh Patil, Chairman, Goa State Pollution Control Board**, observed sensitization of stakeholders should be done. Extended produce responsibility is helping us but it is a long road ahead.

**Dr M Abul Kader, Director, CIPET**, said that doing recycling continuously is not efficient as it leads to quality reduction. Hence, new technological intervention is needed. CIPET is doing R&D for recycling technology for management of plastics.

**Dr Monique Retamal, Research Director, ISF-UTS**, said the need for data collection transparency and efficiency is crucial for plastic waste management. We also must focus on reduction of plastics and not just recycling.

**Mr Amit Lahoti, Senior Commercial Director and General Manager – Asia, Ball Beverage Packaging,** said that alternatives to plastic is the need of the hour and in that context, consumer awareness is needed for people associated across the plastic value chain.

**Dr Medha Tadpatrikar, Director, Rudra Environmental Solutions,** stressed that chemical recycling is not getting popular due to cost constrains. Technology costs are high and recycling fund could be one step forward for implementation of new recycling infrastructure.

## MONITORING, EVALUATION, AND LEARNING FRAMEWORKS IN INDIA

This thematic track revolved around debates on changing climate and the risks associated with it to make adaptation imperative for all countries. India, being a large developing country in the tropics with diverse agro-climatic regions and a long coastline, is extremely vulnerable to the consequences of a changing climate.

**Dr Vibha Dhawan, Director-General, Earth Science and Climate Change Division, TERI,** said monitoring and evaluation frameworks will help stakeholders report on progress. There is still a long way to go, and we would need partnerships to be strengthened to be able to scale up these activities.

**Dr Henning Wuester, ICAT Secretariat, UNEP Copenhagen Climate Centre,** observed the notion of using data and matrix to drive the climate actions has to be better understood. You cannot manage if you cannot measure what you want to achieve. Monitoring and evaluation framework is the key to mobilize the finance.

**Dr Henry Neufeldt, Project Manager, ICAT Secretariat, UNEP Copenhagen Climate Centre,** said when national governments set climate goals, they have to be implemented at local levels. Engaging with the sub-national and non-state actors is the fundamental requirement to achieve the objectives and make sure that the reporting is carried out from the local levels all the way back to the national levels where it can be further analysed.

**Ms Suruchi Bhadwal, Director, Earth Science and Climate Change Division, TERI,** noted that Monitoring, Evaluation, and Learning (MEL) frameworks are needed for both adaptation and mitigation. For India, MEL framework is required for capacity building.

**Dr Alex Fisher, Director, Climate Ambition, ClimateWorks Foundation and Chair, ICAT,** noted that it is always challenging to bring in an MEL or monitoring system if you do not trace the incumbent system. We will need the MEL system to show us the progress that is out there.

**Dr Lindy Charlery, Advisor, Impact Assessment and Adaptation Analysis, UNEP Copenhagen Climate Centre,** said a lot more has been done in the mitigation sector because of clear definitions and different set of challenges. In the case of India, the MEL framework has to be developed by integrating mitigation components with the adaptation components into one monitoring and evaluation system to get a complete picture of climate change, its impacts, and progress being done.

**Mr Rajeev Chawla, Chief Knowledge Officer and Advisor, Agriculture Ministry, Government of India,** noted that the Government of India initiated a major project called Agri-stat, which gives data points of farmers required for the MEL framework. Data is a very crucial component of any MEL system.

**Ms Johanna Jagnow, Project Manager, Climate Adaptation and Finance, GIZ India,** said departments need indicators that are easy to monitor in MEL systems. So, the first step is to check the linkages of indicators with other schemes and programmes in various departments. The second step is to have major stakeholder consultations with those departments. The actions need to be institutionalized.

**Mr Jagjeet Singh Sareen, Principal, Dalberg Advisors, Dalbergs' Climate Works,** advised that it is important to build an organic link with farmers in India. He also advised we test whatever we know about climate change impacts and address the concerns after discussions with the Indian farmers.

## Group B

Day 2 | February 23, 2023 | 2:00 pm–3:30 pm (IST)

Track Name	Venue	Thematic Track Partners
The Relevance of the Energy Efficiency First Principle in an Indian context	Jacaranda 1	 
India and the Future of Energy: A Conversation between IEA Chief Energy Economist Tim Gould and PMO Advisor Tarun Kapoor	Jacaranda 2	
The Science and Governance of Climate-Altering Techniques: Implications for Sustainable Development	Magnolia	 
Enhancing Coastal Resilience for a Sustainable Future: Managing Risks and Building a Climate Resilient Shoreline in India	Casuarina	 <p>WORLD BANK GROUP</p>
Progress Made under National Clean Air Program: National and International Perspective	Gulmohar	
Achieving Food Security and Climate Resilience—Learnings from Sustainable Agriculture Initiatives	Silver Oak 2	     
Urban Public Transportation Aiding Net-Zero Emission Target	Tamarind	 <p>EUROPEAN UNION</p>
Accelerating Circularity Through Integrated Recycling Infrastructure in India	Maple	 

Decarbonization  
E-Commerce: Paving the Way  
to a Low Carbon Economy

Marigold



Fulfilling the Promise of Solar  
Irrigation in India

TERI  
Conference  
room



## THE RELEVANCE OF THE ENERGY EFFICIENCY FIRST PRINCIPLE IN AN INDIAN CONTEXT

Energy efficiency is often underestimated in the existing planning and investment programmes. The principle also puts forth the 'save before you build' philosophy. This thematic track concentrated on giving priority to demand-side solutions whenever they are more cost-effective than investments in energy infrastructure to meet policy objectives.

**Mr Chirag Gajjar, Associate Director – Clean Energy and Climate, Management Consulting, PwC India,** highlighted the possible strategies that could be looked at for the integration of Energy Efficiency First Principle. Making financing available for the renovation programmes that could be implemented in residential buildings is the first principle, he remarked.

**Mr Edwin Koekkock, First Counsellor, Energy and Climate Action, EU Delegation to India,** pointed out that there is an increasing move to renewables and that in Europe, energy investment is often underestimated in the planning and investment programme.

**Mr Ajay Shankar, Distinguished Fellow, TERI,** explained that in the Indian context, we are fortunate and a little ahead of the curve in embracing energy efficiency as a goal pretty early on, and we have achieved more success than he thought we would. From a policy side, there is also a case where policy should nudge a forward movement so that the business case for energy efficiency stands on its own after some time, or there is enough movement down the cost curve.

**Ms Namita Vikas, Founder, auctusESG LLP,** said from a systematic lens, the lack of an agreed definition of a green or environmental, social, and governance in many markets serves as a hindrance, making it very difficult to exactly integrate these parameters into credit decision-making or garner investment interest. Standardization, clarity from regulators, monitoring, and accurate disclosures are key to propelling action within regions, especially developing markets.

**Dr Winfried Damm, Head of the Energy Program, GIZ,** said the issue is CO2 emission while pointing out the need to come up with CO2 emission trading.

**Ms Cornelia Schenk, Policy Specialist, IEA,** said we need electrification and decarbonization as central pillars of the clean energy transition. India's energy future depends on buildings and factories that are yet to be built, and vehicles and appliances that are yet to be bought.

**Ms Shabnam Bassi, Deputy CEO-cum-Secretary, GRIHA Council,** said that for any policy and regulation to be successful, it is important to understand at what stage they are getting implemented. At the implementation strategy, it is quite later in the life of the project that we start looking at meeting the compliances.

**Mr Arijit Sengupta, Director, Bureau of Energy Efficiency,** pointed out that the success of energy efficiency lies in the Energy Conservation Act, 2001. We have seen success in the appliance labelling scheme, he added. For net zero commitment, he said 'industry decarbonization' and 'energy independence' are crucial.

## INDIA AND THE FUTURE OF ENERGY: A CONVERSATION BETWEEN IEA CHIEF ENERGY ECONOMIST TIM GOULD AND PMO ADVISOR TARUN KAPOOR

This wide-ranging conversation on the future of energy in India and the world between **IEA Chief Energy Economist Tim Gould and Advisor, PMO Tarun Kapoor** was a tour de force discussion on the future of energy in India and the world. Tim Gould made a presentation on the latest IEA research, including key messages from the World Energy Outlook 2022 and the Energy Technology Perspectives 2023.

**Mr Tim Gould, Chief Energy Economist, IEA,** said that the big sources of growth are India, Africa, South-East Asia and that is why it is so important that India in its G20 presidency put those issues at the centre of the climate debate.

**Mr Tarun Kapoor, Advisor, PMO**, contributed by sharing that one's essential energy requirement should be assured and it can happen if the country has enough production or if it has some long-term supplies where either it has invested money which means that the country owns some of the assets or has long-term tie ups.

## THE SCIENCE AND GOVERNANCE OF CLIMATE-ALTERING TECHNIQUES: IMPLICATIONS FOR SUSTAINABLE DEVELOPMENT

The world is not on track to meet the Paris Agreement temperature goals. This thematic track focused on governance challenges and how these have a lot of uncertainty along the learning curve with reference to questions of liability and responsibility and private partnerships on related technologies.

**Mr Janos Pasztor, Executive Director, Carnegie Climate Governance Initiative**, chaired the session.

**Mr Manish K Shrivastava, Senior Fellow, Earth Science and Climate Change, TERI** said that governance of geo-engineering technologies is to put them under a broad umbrella of loss and damage and adaptation approach rather than on mitigation.

**Dr Ajay K Sood, Principal Scientific Adviser (PSA), GoI**, said that solar reduction modification and carbon dioxide reduction represent a critical aspect to address global climate crisis and global warming. These technologies have potential to disrupt existing structures such as UNFCCC and bring a need to look at new methods including decentralized governance structures.

**Dr Thelma Krug (Brazil), Vice-Chair, IPCC**, cautioned that carbon dioxide reduction cannot serve as a substitute for deep emissions reduction, but can only complement reduction of anthropogenic emissions. Carbon stored in ocean and geological reservoirs have a longer time period of storage and are less vulnerable than land-based storage.

**Ms Gabriela Ramos, Assistant Director-General for Social and Human Sciences, UNESCO**, said that there is a need to hear what the people desire and, therefore, a multidisciplinary approach is the need of the hour along with a precautionary approach. UNESCO is developing a report on the ethics of climate change and plans to launch it during COP28.

**Ms Jo Tyndall, Director, Environment Directorate, OECD**, said we have a long way to go before climate-altering techniques become commercially viable as the infrastructure to govern at the national and international levels is still not in place. As we have limited resources to mitigate climate change, the investment must be prioritized and we should not over-prioritize climate-altering techniques.

**H.E. Amenatave V Yauvoli, Ambassador Extraordinary and Plenipotentiary of the Republic of Fiji to the Republic of Indonesia; High Commissioner to Singapore; High Commissioner to Malaysia; Permanent Representative to UNESCAP in Bangkok**, said the role of Global South is important when it comes to governance of climate change technologies. If the Paris Agreement is not realized, climate change risks cannot be mitigated.

## ENHANCING COASTAL RESILIENCE FOR A SUSTAINABLE FUTURE: MANAGING RISKS AND BUILDING A CLIMATE-RESILIENT SHORELINE IN INDIA

India is prone to severe weather events, causing major societal impacts. This thematic track deliberated on the country's coastal regions, in particular, and how they are highly vulnerable because of rapid urbanization, high population densities, and related economic activities such as agriculture, aquaculture, tourism, industries, and trade.

**Dr M V Ramana Murthy, Scientist G and Director, National Centre for Coastal Research (NCCR), Ministry of Earth Sciences**, said that India is blessed with a large number of institutions [for coastal research], engaged

in terrific research work. Bringing that research into practice is always a matter of debate, but there must be a mechanism, a knowledge management system, he added.

**Mr Anup Karanth, Senior Disaster Risk Management Specialist, World Bank**, said our [urban] infrastructure is not capable of taking up these extreme events, especially precipitations of 40 cm happening in 3 days' time. Priority one is understanding the disaster risks, the second is strengthening of governance, right from the federal-level to the state-level to even the NGOs, and the third is investment.

**Dr K J Ramesh, Former DG, Indian Meteorological Department, Ministry of Earth Sciences, GoI**, said protecting the shoreline becomes important in the present context. Ensuring the sustainability of our lifeline infrastructure would be the high-priority of all our developmental projects. Intensities [of multi-hazards] are going to be higher and area of influence of the coastal zones are going to be much larger compared to the present scenario.

**Dr Sumit Sharma, Programme Officer, United Nations Environment Programme**, shared, coastal areas are generating their own pressures and enhancing their environmental footprints, but they are also conduits to the [environmental] problems transferred from upstream areas to the marine environments.

**Ms Riya Rahiman, Lead, Infrastructure for Resilient Island States (IRIS), Coalition for Disaster Resilient Infrastructure (CDRI)**, noted it is important to highlight how the infrastructure damage that happens [due to cyclones], especially in the Small Island Developing States, is generally more than 20% of the GDP [of these states], which is extremely heavy. Four themes came out of [regional] consultations [with Small Island Developing States]: risk informed planning, database management systems, access to finance, and mainstreaming inclusion [in creating Disaster Resilient Infrastructure].

**Mr Ignacio Urrutia, Senior Disaster Risk Management Specialist, World Bank**, said we have to find ways of having projects and programmes that allow for interventions that are flexible and that very quickly adapt to the results we are seeing on the ground [but] unfortunately, and this goes both for government and for financing institutions like the World Bank, our current systems are not very suitable for these types of interventions. Where we see more success [with interventions] is when coastal resilience is linked to multiple benefits that allow the community to take advantage of the space for economic activity.

## **PROGRESS MADE UNDER NATIONAL CLEAN AIR PROGRAMME: NATIONAL AND INTERNATIONAL PERSPECTIVE**

Air pollution is a major problem that affects millions of people worldwide. Nine out of ten people in the world breathe polluted air. Rapid economic growth, population migration towards urban areas, and inadequate controls have led to the degradation of ambient air quality, particularly in cities of developing countries such as India. This thematic track concentrated on the ills of air pollution and how to address the same.

**Shri Ashish Tiwari, Secretary, Department of Environment, Forest and Climate Change, Government of Uttar Pradesh**, said optimization of pollutant emissions through air-shed management approach can help in tackling air pollution. Enhancing public awareness and capacity-building measures for inclusive public participation and for ensuring trained manpower and infrastructure on air pollution are needed.

**Dr Prashant Gargava, Member Secretary, Central Pollution Control Board**, explained that air pollution is not a localized phenomenon; coordinated efforts across the regions are required along with trans-boundary conventions and international cooperation.

**Dr Ashok Ghosh, Chairman, Bihar Pollution Control Board**, talked about the situation in Bihar and said the main challenge in Bihar is due to the alluvial plain on the Indo-Gangetic plain. Anthropogenic activities can severely affect the climate, mainly the air quality.

**Ms Jane Burston, Executive Director, Clean Air Fund**, said though only 1% of the funding is currently going to air quality, the good news is that this is increasing. The importance of building green barriers improves the air quality of the area to a certain degree.

**Dr Jonathan Demenge, Head of Co-operation, Swiss Agency for Development and Cooperation**, said climate action must cover three aspects: technology, developing capabilities, and enforcement including public participation.

## ACHIEVING FOOD SECURITY AND CLIMATE RESILIENCE: LEARNINGS FROM SUSTAINABLE AGRICULTURE INITIATIVES

The Indian agricultural sector is unique, with more than 50% of its population engaged in farming for their livelihoods. The agriculture sector contributed more than 17% of the gross value added (GVA) during 2019–20. The sector has witnessed major paradigm shifts over the years after Independence. With this context, the thematic track on achieving food security and climate resilience ensued.

**Dr Rengalakshmi R, Director, Ecotechnology, MSSRF, Chennai**, said we developed and facilitated field champions. The lead farmers who promoted adaptation technologies fine-tuned these to local needs and established community-based platforms. Plant clinics, which are farm-centric advisories use information and communications technology, early warning systems, especially climate information on both medium-range weather forecast and extreme events.

**Dr A K Nayak, Director, ICAR-National Rice Research Institute, Odisha**, talked about the resilience experience in Odisha and highlighted how it started from national food security and is now moving towards nutritional and income security with climate resilience as a key component.

**Dr H K Sahu, Professor, Odisha University of Agriculture and Technology**, added that we adopted integrated nutrient manuring, poly mulching in vegetables, etc. Our capacity building measures were driven by district-level workshops and stakeholder advisory committees where we saw maximum participation from farmers.

**Mr Manish Anand, Senior Fellow, TERI**, emphasized on the need to have the farmers' voices heard, and pointed out that we are trying to look at it from a farmer-centric approach rather than a soil-centric one. We discovered that crop and livestock were interdependent. Livestock acted as resilience-building activity and doubled up as a source of additional income.

**Mr S Vijay Kumar, IAS Retd. FOLU India Lead and Distinguished Fellow, TERI**, said the current land systems are not geared up to meeting the environmental, economic, and social challenges. There is hidden environmental, health, and poverty cost associated with the current agricultural systems. The solutions to solve this hidden poverty cost include: diversity of Indian agriculture, healthy and sustainable diets, integrated farming system, improved agro-biodiversity, and prevention of food loss.

**Ms Nandini Agarwal, Programme Associate, CEEW**, pointed out that farmers have started to grow tomatoes, and there is more aspiration to scale up tomato production along with groundnut. Now, given that this is an impact region, the choice of crops and current cropping practices raise serious questions about what it means for the ecosystem and water resources in this region.

**Dr Ruchika Singh, Director - Sustainable Landscapes and Restoration, WRI India**, added that the ecosystem services analysis allows for looking at enabling conditions, actor priorities, and cost research, and said how conducting surveys and consultations can identify key values in the system.

**Mr Sony RK, Manager, FOLU India**, said that under the sustainable agriculture initiative, we have two flagship programmes. These two programmes have the same principles but follow different kinds of approaches. We are working with the government in four districts to see how a government-led transformation into sustainable and future generative agriculture is possible.

**Dr Jayahari KM, Country Coordinator, FOLU India**, said, we have to keep in mind that nothing should drastically change, rather we need to go slow so that progressive ways of reducing, distributing, and consuming food are found.

**Ms Martine A Bottheim, Minister Counsellor and Deputy Head of Mission at Royal Norwegian Embassy,** raised a pertinent point and said that we should ensure that women are consulted and allowed to participate on an equal footing with men in the planning and implementation of projects. Because of climate change, smaller farmers in India will face a big transformation in the coming years and they will have to manage a transition to a green business as well as increased digitization.

## URBAN PUBLIC TRANSPORTATION AIDING NET ZERO EMISSION TARGET

The thematic track deliberated and discussed actions that were essential to augment urban public transportation. In the thematic track, key issues structured around experiences, challenges, and solutions from experts in the public transport sector, and the role of active transportation and multi-modal integration. It also focused on multi-modal integration across all public transit modes.

**Prof. Geetam Tiwari, TRIP-Centre, IIT-Delhi,** moderated the session and steered the discussion by pointing out that about one-third of the Indian population lives in urban areas and within that 30-35% reside in small cities that do not have an organized public transportation system.

**Mr Akash Passey, President (Bus Division and E-Mobility), Volvo Eicher Commercial Vehicles,** initiated the conversation on last mile connectivity and how it is failing in several cities. He pointed out that India ranks lowest in the world in terms of the number of buses available for people.

**Mr T Surya Kiran, Executive Director, Association of State Road Transport Undertakings,** highlighted that without public transport it is very difficult to control the emissions.

**Ms Harpreet Kaur Bajaj, Principal Transport Economist, Ramboll,** said linking public transport with cycling and walking infrastructure should take place. She also said that transport and mobility are not gender neutral.

**Ms Nitika Krishan, Key Expert, EU Funded Project,** raised a pertinent question and asked—'Can mobility as a service be introduced as a technological intervention where we could have choice and equal opportunity?' She felt that we need to bring the last mile service providers in the form of cooperatives or any other aspect by which they could have a seat in the system.

**Mr Shri Prakash, Distinguished Fellow, TERI,** said that a large section of marginalized people is still not able to pay fees for public transport, which is already very low. Bus Rapid Transit system is a better choice, but the number of buses is still not increasing.

## ACCELERATING CIRCULARITY THROUGH INTEGRATED RECYCLING INFRASTRUCTURE IN INDIA

In the last few decades, the globalized lifestyle has created the linear notion of consumption and production moving around 'take-make-use-dispose'. This thematic track foregrounded the pillars to break the linear approach and deliberated on the good practices in India and the world to enhance learning on success and failures in building and operating integrated recycling facilities.

**Dr Atul Vaidya, Director, CSIR-National Environmental Engineering Research Institute,** said capacity building in recycling across the value chain stream is lacking and is in need for large-scale policy mobilization.

**Dr Heinz Schandl, Senior Science Leader, Commonwealth Scientific and Industrial Research Organisation (CSIRO),** said that in order to mobilize co-investment opportunities amongst government and private players, the partnership between these two actors will have to be strengthened.

**Mr Amit Verma, Head – Circular Economy, NITI Aayog,** said, circularity as a principle can significantly help India efficiently steer its green growth efforts in the right direction. Going forward, the policy evolution needs to happen with circularity as the central theme in the discourse.

**Mr Mahesh Patil, Chairman, Goa State Pollution Control Board**, said segregation of the waste at the source is crucial and will continue to be the focus of the government's awareness campaign.

**Mr Amit Lahoti, Senior Commercial Director and General Manager-Asia, Ball Beverage Packaging**, said more policies on aluminium need to be galvanized by regulatory bodies given the large-scale share the metal has across commercial products.

**Mr Nitin Gupta, VP and Head – Sustainability Advisory, Capgemini Invent India**, said that digitizing the reverse logistics infrastructure is crucial in India and can significantly improve the business utility of recycling industry in the country.

**Mr Abhinav Ramaria, Head - Programs and Operations, Aspire Labs**, said informal players, such as waste pickers and small-scale processors, play an important role in waste collection and processing. Their recognition, formalization, and equitable compensation need to be part of the sector policy discourse.

**Mr Yogesh Bedi, Chief Urban Mining and Steel Recycling Businesses, Tata Steel**, said gig economy infusion within the reverse logistics sector can improve synergy across different actors within the business landscape.

**Mr R P Sharma, General Secretary, Recycling and Environment Industries Association of India (REIA)**, said awareness around waste segregation has not improved over the last few years. We need to revisit our awareness strategy and see where we are lacking.

**Jeevesh Kumar, Founder and CEO, Greenscape**, said that concentration of mechanized instruments and tools makes a big difference in the entire recycling process. Thus, their adoption for the workers needs to be strategically incentivized.

## DECARBONIZATION OF E-COMMERCE: PAVING THE WAY TO A LOW CARBON ECONOMY

In this special thematic track with two thought-provoking sessions, panelists from across fields deliberated on the use of e-commerce services, with online retail and grocery delivery emerging as critical services for Indians facing pandemic lockdowns.

### *Session 1: Freight Decarbonization Last Mile and Middle Mile Transportation*

**Mr Naresh Pal Gangwar, Additional Secretary, Ministry of Environment, Forest and Climate Change of India (MoEFCC)**, gave the Keynote Address.

**Mr R R Rashmi, Distinguished Fellow and Programme Director, TERI**, stressed that urgent action is needed to decarbonize small and hard-to-abate sectors such as e-commerce, aviation, shipping, and heavy industry for a sustainable future. Innovative solutions such as energy efficiency, electrification, and circular economy can reduce emissions without compromising economic growth.

**Mr Sudhendu Sinha, Advisor (Infrastructure Connectivity – Transport and Electric Mobility), NITI Aayog**, said that sustainability is a two-way street. The push for clean mobility must come from both buyers and sellers, inspiring each other to move towards a greener future.

**Mr Jasmeet Khurana, Lead, Moving Emerging Markets, World Economic Forum (WEF)**, said that opportunities are abound for Indian OEMs. With innovation and a focus on sustainability, Indian manufacturers can lead the charge towards a brighter and greener future.

**Mr P Sanjeev, Head/VP EV micro-mobility, TVS Motors**, said that energy efficiency is the future, and retrofitting alone will not get us there. To build a sustainable tomorrow, we must focus on designing and manufacturing purpose-built electric vehicles that prioritize efficiency and environmental impact.

**Ms Shubhra Jain, Public Policy Manager, Amazon India**, explained that to make a real impact, medium and heavy-duty trucking solutions must be scalable and part of larger fleets. By focusing on scalability, we can accelerate the adoption of sustainable transportation and pave the way for a greener future.

**Mr Akshay Shekhar, CEO, Kazam**, said that digitization is the key to sustainable transportation. Without the necessary infrastructure, battery swapping may be the fallback solution. He added we should prioritize digitization to create a greener, more efficient future.

**Ms Chetna Nagpal, Senior Associate, RMI** highlighted the need for India's freight sector to draw lessons from global experiences. With the increase in the growth of e-commerce, so will the need to address the environmental impacts both locally and globally.

### ***Session 2: Creating a Vibrant Ecosystem for Sustainable Packaging Alternatives and Local Packaging Manufacturing***

**Mr Er S Bhardwaj, Deputy Director General, Department for Promotion of Industry, and Internal Trade (DPIIT)**, remarked that packaging waste from e-commerce may seem small on its own, but with the sheer volume of shipped goods and the need to warehouse them, the environmental impact adds up quickly. It is important for us to consider the emissions from this sector and find ways to reduce our impact on the planet.

**Dr Suneel Pandey, Senior Fellow and Director, Environment and Waste Management, TERI**, said the shift towards alternate packaging is not just an option but a necessity to address the alarming issue of plastic pollution in our oceans. Sustainable packaging is a conscious decision towards a healthier planet and a brighter future.

**Mr Ankit Gupta, General Manager, Corporate Sustainability, ITC Limited**, said that turning waste into wealth through ITC's recycling efforts is the ultimate win-win for both the planet and the economy. By closing the loop and embracing circularity, we can achieve decarbonization and create a brighter future for future generations.

**Ms Shweta Ramdas, Sustainability Leader, Amazon India Operations**, said that cost-effective sustainability is the key to transforming e-commerce packaging. By investing in research, collaborating with partners, and leveraging innovation, we can create sustainable solutions that benefit the environment and businesses alike. She added that we should make sustainability the new standard and build a brighter future for all.

**Dr B. K. Karna, Director, Director, Packaging Clinic and Research Institute (PCRI)**, said green packaging is more than just a trend; it is a responsibility towards our planet. He remarked that we need to embrace the need for sustainable packaging and create a better world, one package at a time.

**Mr Vibhore Rastogi, Professor, Indian Institute of Technology, Roorkee, Saharanpur Campus**, said that to create a sustainable future, we must look beyond the baseline scenario and explore new local areas that can transform waste into valuable resources. By embracing innovative solutions to reduce emissions from all sectors, including e-commerce, we can create a circular economy that benefits our planet and our communities.

**Mr Vaibhav Anant, Founder, Bambrew**, said although it may have been common practice in the past to use raw food products packed in paper, we now have the technology and knowledge to develop sustainable packaging solutions that are both eco-friendly and effective. Educating and empowering consumers to make better choices can create a more sustainable future for all.

## **FULLFILLING THE PROMISE OF SOLAR IRRIGATION IN INDIA**

This thematic track focused on how solar irrigation has the potential to provide energy and water security to farmers, enhance productivity and incomes, and decarbonize the agricultural sector by enabling countries to achieve some of the UN's sustainable development goals.

**Mr Anas Rahman, Policy Advisor, International Institute for Sustainable Development (IISD)**, said the high upfront cost of installing solar pumps is one of the primary problems of PM KUSUM plan, which may dissuade small and marginal farmers from adopting the technology.

**Mr Nilanjan Ghose, Senior Advisor, GIZ**, said the PM KUSUM plan is a significant step towards the farm sector's decarbonization. The installation of solar pumps and solar power plants under the PM KUSUM scheme would support the use of local resources and help decentralize the energy sector.

**Ms Shweta Kulkarni, Fellow, Prayas Energy Group**, said that in Maharashtra, the implementation of PM KUSUM scheme is lagging but the farmers' response is good. To ensure the success of the PM KUSUM plan, all stakeholders, including farmers, state governments, financial institutions, and technology suppliers, must be involved.

**Mr Amit Saraogi, Co-founder, Oorja Development Solutions Limited**, said although the PM KUSUM initiative has potential to completely transform India's agriculture industry, there have been numerous problems with its implementation. The farmers' lack of knowledge and comprehension of the PM KUSUM scheme is one of the main obstacles to its implementation.

**Ms Bigsna Gill, Program Manager, Sustain Plus Energy Foundation**, said the lives of rural communities in India have the potential to change as a result of decentralized solar plants and solar pumps. While decentralized solar plants can supply clean, dependable electricity to power homes and businesses, solar pumps can provide water for irrigation.

**Mr Surajit Chakraborty, DGM and Lead of Energy Programs, Switch ON Foundation**, said the implementation of PM KUSUM scheme in West Bengal is lagging as bankers are not aware about schemes and technology.

**Dr Alok Sikka, Country Representative, International Water Management Institute (IWMI)**, explained the PM KUSUM programme is a ground-breaking effort in India to support solar energy and provide farmers more power. The programme will help farmers save on electricity bills by offering incentives for installing solar pumps and panels, as well as provide them with additional cash by allowing them to sell excess power back to the grid.

## Group C

Day 2 | February 23, 2023 | 4:00 pm–5:30 pm (IST)

Track Name	Venue	Thematic Track Partners
Role of Carbon Markets in India's Developmental Transition	Jacaranda 1	 WORLD BANK GROUP
Pathways for Meeting India's Power Sector Decarbonization Targets for 2030	Jacaranda 2	<b>Bloomberg Philanthropies</b>
Water Management for Climate Resilience, Biodiversity, and Food Security	Magnolia	 EUROPEAN UNION  EU-INDIA CLEAN ENERGY & CLIMATE PARTNERSHIP
Nature-based Solutions for Sustainable Development	Casuarina	Supported by:  Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection  IKI INTERNATIONAL CLIMATE INITIATIVE <small>financed with a donation of the German Government</small>
True Value of Food: A Call to Action to Solve Climate Change and Other Crises	Silver Oak 2	 <b>The Rockefeller Foundation</b>
Breaking the Boundaries of Holistic Development: Philanthropic and Social Initiatives Lead the Way	Gulmohar	  CONCOR  IKEA IKEA Foundation  Nippon Life <b>india</b> Asset Management Ltd  PNB GILTS LTD  GILTS
Yonger Collectives for Greener Future	Dr R K Pachauri Conference Room, TERI	<b>TATA STEEL FOUNDATION</b>

## ROLE OF CARBON MARKETS IN INDIA'S DEVELOPMENTAL TRANSITION

This thematic discussion had esteemed panellists sharing insights in achieving climate goals in the form of series of presentations on a variety of topics. Achieving climate goals and targets would require significant investment from both public and private sectors — domestically and globally — which can be extensively enabled by market-based mechanisms.

**Mr R R Rashmi, Distinguished Fellow, TERI** chaired the session that deliberated on India's continued commitment and leadership on climate action.

**Ms Ritu Ahuja, Climate Change Analyst, World Bank**, while delivering the Framing Presentation, said the developmental transition we are in now and that which is to come in the future is very complex. The domestic market has the potential, if needed, to be linked on an international level. Having a national carbon registry that can be linked to an international registry could be part of a necessary solution.

**Mr Saurabh Diddi, Director, Bureau of Energy Efficiency, Ministry of Power, Government of India**, cautioned that in the voluntary markets of India, the credits should have more credibility, which is yet to be seen. A balance should be maintained. The cost of MRV (measurement, reporting and verification) should not be exponentially high.

**Ms Mahua Acharya, MD, and CEO, CESL**, explained that digitization of MRV systems is a must in a country like ours. Countries are developing their own registries and to fix the problem of double counting, all the registries could be connected.

**Dr C S Sinha, Adviser, Climate Change, World Bank**, stated that metadata layer created by World Bank will capture data from registries and allow transaction between countries. Countries need to define their needs based on national requirements. Infrastructure is critical to the efficiency and functioning of the market.

**Mr Deepak Gupta, Senior Vice President and Head – Carbon Business, ReNew Power**, said international focus on carbon markets has increased multifold in the last few years. We should have some idea about how the convergence of voluntary and compliance markets would look like, including the time field it applies to, which sectors are going to play a role, and attracting private investments in ongoing projects.

**Dr Lokesh Chandra Dube, Senior Standards Manager, Gold Standard, India**, said we need to have voluntary markets that reach difficult-to-access areas, users, and citizens. Some considerations in selecting a suitable voluntary standard are activity type, credibility, co-benefits, price offered, safeguarding, and user friendliness.

**Ms Neha Khanna, Manager, Climate Policy Initiative**, urged energy transition needs to happen in India as this will lead to generalized pricing in domestic and international carbon markets. We need a lot more financing for domestic and international markets to proliferate and to fill the gaps.

**Mr Vikas Kumar Singh, Executive Officer/Compliance officer, Carbon Checks (India) Pvt Ltd**, said that carbon pricing for nature-based solutions has to be optimized. Price regulation is important, otherwise there will not be adequate carbon financing and there will be a reversal of credits.

## PATHWAYS FOR MEETING INDIA'S POWER SECTOR DECARBONIZATION TARGETS FOR 2030

This thematic track focused on India's decarbonization targets, as announced by Hon'ble Prime Minister of India at COP26, Glasgow.

**Mr A K Saxena, Senior Director, TERI** delivered the introductory address and gave a presentation on India's decarbonization targets.

**Mr Tim Gould, Chief Energy Economist, IEA**, said that to scale up renewable capacity to meet the 2030 targets, renewable capacity addition needs to be ramped up to about 35 GW per year from the current level of 11 GW per year. The scale of renewable capacity addition is not responsive to the operating cost of coal power plant, i.e. ₹2.5 to ₹3.5 per unit, which needs to be economically competitive.

**Mr S R Pandey, Member, Gujarat Electricity Regulatory Commission**, said to achieve decarbonization targets, shift of fuel from conventional to use of hydrogen, methanol, and ammonia for industrial use is necessary. The key role of regulators to enable decarbonization are promotion of renewable energy, green hydrogen policy, long duration energy storage and electric vehicle, introduction of ancillary services, and green energy markets.

**Mr Y K Sehgal, Executive Director, Greenko**, said that high capex of pumped storage projects (PSP) and cost competitiveness of renewable energy can be integrated to provide flexibility at a competitive price in peak hours. PSPs are environment-friendly and can be built indigenously to promote the 'Atmanirbhar Bharat' initiative.

**Ms Surbhi Goyal, Senior Energy Specialist, World Bank** explained that digitization is extremely important for real-time monitoring and data collection to maintain grid stability and flexibility.

**Mr Samir Chandra Saxena, Executive Director and Head, National Load Despatch Center (NLDC), Grid Controller of India Ltd**, stated that for flexibility, newer and more efficient thermal power stations must support two-shift operation, as is being demonstrated by Tamil Nadu with stations at Mettur thermal station. The 'Demand-Side Response' needs to be captured with it being the most efficient and cost-effective resource as compared to supplying the costly peak power.

**Ms Ammi R Toppo, Chief Engineer (Integrated Resource Planning Division), Central Electricity Authority**, said 'Resource Adequacy' mechanism is a necessity and adds to resource optimization and ensures adequate capacity in the grid. Planning should be done at the DISCOM level so that demand at every instant of time can be met reliably.

**Mr Ajay Shankar, Distinguished Fellow, TERI and Former Secretary, Department of Industrial Policy and Promotion, GoI**, gave the concluding remarks and discussed the ambition of major economies over their Paris commitments.

## **WATER MANAGEMENT FOR CLIMATE RESILIENCE, BIODIVERSITY, AND FOOD SECURITY**

The impact of climate change on water is predicted to be many: extended summer season causing less rainy days, late onset of monsoon season, intense precipitation, recurring occurrence of drought and flash floods, glacier melts, and heavy snowfall during winters. This thematic track discussed how each of these phenomenon influences the water resources on Earth and associated biodiversity in its ecosystems and agriculture that depend on them.

**Dr Syamal Kumar Sarkar, Distinguished Fellow, Water Resources Division, TERI**, in his welcome address, highlighted the interconnection of water and climate change by talking about the melting of glaciers in the central Asian region and the need to restore and protect water and water-related ecosystems.

**Mr A K Gosain, Director, INRM Consultants Pvt Ltd and Retd. Professor, IIT Delhi**, said when we want to discuss the issues, we have to first resolve the complications of water interactions, and come out and generate information that we can use for negotiation; that is where science has to be used. What we need for water management is convergence and integration of sectors.

**Dr Jyoti Nale, Project Advisor, India-EU Water Partnership, GIZ-India**, said nature-based solutions are required for sustainable usage of water, such as growing millets and lifestyle changes (as adopted) by humans. There has to be optimal use of water for individuals for better water management.

**Mr Suresh Babu, Director of Rivers, Wetlands and Water Policy programme, WWF-India**, remarked that for better water management, several solutions exist but it gets divided into pieces at various levels. Therefore, one needs to articulate what is there for us in the basket of solutions and use that appropriately. Rivers and wetlands hold the key for our adaptation strategies.

**Mr Kees Bons, Strategic Advisor, Deltares, The Netherlands**, asserted that if we fight nature, it will fight back; so, what we need is to use the strength of nature and use that for the benefit of our own kind. We need to protect the areas where nature is still at its best as these areas are restoration areas for insects and animals.

**Dr Roshni Arora, Applied Freshwater Scientist, The Nature Conservancy, India**, stated that shared goals about safeguarding the ecosystem must be formulated. Interlinkages between freshwater ecosystems, wetlands and rivers, and interlinkages between different departments is what we need to solve the issues of water management.

**Ms Kamilla Kristensen Rai, Counsellor, Delegation of the European Union to India** delivered the Vote of Thanks.

## NATURE-BASED SOLUTIONS FOR SUSTAINABLE DEVELOPMENT

The aim of this thematic track was to showcase the increasing action on 'nature-based solution (NbS)' and ask what is necessary to ramp up ambition and integrate nature and NbS in domestic and international plans and policies. The discussion revolved around efforts to mainstream NbS in order to achieve the Sustainable Development Goals.

**Dr Yogesh Gokhale, Senior Fellow, TERI** gave a presentation on the thematic track's subject of discussion to set the context.

**Ms Ilka Hirt, Deputy Director General of International Policy, Federal Ministry for Environment, Nature Conservation and Nuclear Safety, Germany**, remarked that instead of working in silos, we need to find integrated and holistic answers. The best solutions are those that work simultaneously against the major global and environmental crisis as well as the problems of everyday lives of citizens.

**Mr Subhash Chandra, Additional Director General, Ministry of Environment, Forest and Climate Change, GoI**, stated that in India we do not see nature as a commodity. We respect and work with nature. So, nature-based solution is not new to the country.

**Dr Vinod B Mathur, Vice-chair, IPBES Bureau and Former chairperson of National Biodiversity Authority of India**, said we cannot extend our national parks and sanctuaries. We need to find out-of-the-box solutions to meet our determined contribution. India is the only country in the world which has developed its classification of Other Effective area-based Conservation Measure (OECM), he added.

**Mr Shailesh Tembhurnikar, Principal Chief Conservator of Forests, Maharashtra Forest Department**, asserted that we want to have long-term partnership and collaboration with international and local regional communities; and cooperation from civil societies and the government are must for nature-based solution's continuity.

**Dr J V Sharma, Programme Director, Water Waste and Natural Resources, TERI**, explained all legislations provide the space for people's participation. We have to think twice, thrice, or many times that we are implementing in a right spirit of the preamble of the respective legislation to achieve the target.

**Ms Mechthild Caspers, Head of Division on Climate Policy in the Land Sector, Federal Ministry for Environment, Nature Conservation and Nuclear Safety, Germany**, said we need to transform the way that we use land at the moment, and find new ways that are compatible with our climate and biodiversity goals, and this we can only do if we have strong partnership with landowners and land managers.

## TRUE VALUE OF FOOD: A CALL TO ACTION TO SOLVE CLIMATE CHANGE AND OTHER CRISES

In this thematic track, current approaches to assess the success or profitability of food production, processing, and consumption were discussed.

**Mr Rituj Sahu, Consultant (Food Systems Policy) at The Rockefeller Foundation (Asia Regional Office),** moderated the session where discussions on various topics unfolded including looking into the meaning of the true value of food and how it can be measured.

**Dr Raghav Puri, Postdoctoral Associate, Tata Cornell Institute, Cornell University (delivered the Keynote Address on behalf of Dr Prabhu Pingali, Tata Cornell Institute),** said the price we pay for food does not reflect its true cost. Thus, true cost accounting is one way of identifying the true value of food. There is a growing concern over the negative environmental and health impacts of intensive rice and wheat cultivation in India. Farmers' suicide is a major issue in the country and people do put a value to people's lives.

**Mr Reuben Gergan, UNEP, Biodiversity Consultant,** highlighted how The Economics of Ecosystems and Biodiversity (TEEB) presents a method for true cost accounting of measuring the true value of ecosystems and benefits society. TEEB's main objective is mainstreaming the value of biodiversity services and the ecosystem services for decision-making. TEEB agrifood framework would be most relevant in studying policy interventions on organic farming and agroforestry.

**Mr Anupam Ravi, GIST Impact, Senior Vice President,** said that unless we start measuring the invisible inputs (biodiversity services, etc.) and outputs (human health issues), we will not be able to address the challenge of performance measurement for businesses and corporations.

**Dr Shariqua Yunus, World Food Programme India, Head of Unit and Programme Officer (Health and Nutrition) Delhi,** explained that pushing for policies to start incentivizing those stakeholders who are working positively to minimize the impacts of food on health and environment is essential.

## BREAKING THE BOUNDARIES OF HOLISTIC DEVELOPMENT: PHILANTHROPIC AND SOCIAL INITIATIVES LEAD THE WAY

Social initiatives in India led by philanthropies and Corporate Social Responsibility (CSR) have created pathways for ushering development in rural areas and engaging with underserved communities. Dedicated to this sentiment, a special thematic track was organized as part of the WSDS on Day 2.

**Dr Amit Kumar Thakur, Head CSR and Associate Director, TERI,** said that the entire landscape of social, philanthropic and CSR regime, from 2014, has seen investments of 150 crores for 8-9 years. It encompasses solutions in multiple sectors of renewable energy, livelihood programme, etc. CSR projects and philanthropic initiatives should be need based and spread across India for a holistic development of a sustainable India.

**Mr Nikhil Kaushal, India Representative, IKEA Foundation,** talked about the initiatives taken by IKEA foundation. He defined it as a strategic foundation focusing on people and planet, structuring the work in the streams of productive use of renewable energy, regenerative agriculture and green jobs, waste management, and to create livelihood.

**Mr Gyan Prakash, Deputy General Manager, Security Printing and Minting Corporation of India Limits,** said CSR projects should be concentrated in the unprivileged background for better health and skill development. CSR and sustainability should be people driven and organization driven.

**Ms Pallavi Chauhan, Senior Regional Head-North KCG and EPCG, Nippon Life India Asset Management Limited,** said financial domestic household savings direct into the mainstream financial assets from 9 lakh crore in 2014 to 40 lakh crore in 2022. An increase in financial asset holdings will thereby increase CSR and philanthropic initiatives. Charity begins at home. What we do is also followed by youngsters.

**Mr Sandeep Roy Choudhary, Director, VNV Advisory** said that the idea of finance in CSR is to double the farmer's value rather than double the farmer's income. When worked with smallholders, we can bring value to crop itself. CSR, philanthropy, and climate finance are tools to fill the gaps and create the value for a sustainable future. The big picture is adaptation financed by mitigation.

**Mr Sushil Singla, Principal Resident Commissioner, Himachal Bhavan, Delhi** explained that it is easy to approach public sector organizations for CSR fund, and involve in the implementation under activities such as solar lights, open air gym, which create a lot of goodwill to society.

**Mr Yogesh C S, Managing Director, Karnataka State Textile Infrastructure Development Corporation Limited**, pointed out that the garment industry is a women-oriented sector, requiring two women to operate one machine. The interventions can be in the power, livelihood, and welfare schemes, by implementing the CSR activities into solar panels and unconventional techniques to reduce the burden of the government.

## YOUNGER COLLECTIVES FOR GREENER FUTURE

Joining hands for 'Younger Collective', the panel consisted of Environment Management Committee members (one teacher and one student) from experienced schools, who shared their thoughts on how 'The Green School' learning was merged with local knowledge in collaboration with their peer group from the same school on various environmental issues to research and understand about sustainable lifestyles.

**Mr Sourav Roy, Chief Executive Officer, Tata Steel Foundation**, said climate action has to learn from, be driven by, and be a conscious part of the lives of those who are likely to experience the most profound impacts — children in the remote regions of India. This has been the guiding spirit behind the Green School programme and many other efforts of Tata Steel Foundation.

**Mr Amitava Bhattacharyya, Distinguished Fellow, TERI**, said appropriate disincentive and punishment structures along with incentives and motivation for collective actions are very much needed to make people realize the urgency of the issue.

**Ms Anjali Patra, Green Skipper, RBC Girls, Joda**, said environmental actions of any type need to be local and vocal in any spatial and temporal context.

**Ms Smita Agrawal, Head of Education, Tata Steel Foundation**, averred the 'Green School Initiative' is not only transforming the schools but also helping in transforming communities through its activities. Children are more sensitive towards environmental values naturally than the adults and, therefore, inspiring them to take actions and steps for conservation may prove to be the key driver of the positive behavioural change in the communities.

**Dr Kavita Sharma, Professor, NCERT**, said environmental education is not a separate subject to be taught and graded; it is provisioned to be delivered in an infused way.

**Mr Atul Kumar Bhatnagar, General Manager, OMQ Division, Tata Steel**, said, Tata Group has pledged to achieve 'Net Zero' by 2045 and its industries have been aligned towards the goal.

**Mr Manish Mishra, Chief Corporate Affairs, Tata Steel**, said while it is true that increasing population and consumption are causing increased emissions; however, the relevant stakeholders are now in action mode. Various initiatives such as National Carbon Market, Emission Trading and others may prove to be crucial in this fight against climate change.

**Dr Neha, Senior Fellow, TERI**, said the Green School Initiative has been successful in promoting environmental consciousness among the students. The six experienced Green Schools were able to bring 36 Panchayats for the steps for a greener and sustainable future. The partnership approach in the Green Schools is the key to transition and behavioural transformation in a collaborative way and achieving sustainability in the true sense.

# Special Events



## **MOU Signing between TERI and Guyana on Sustainable Agriculture**

February 22, 2023: A Memorandum of Understanding was signed between the Government of the Republic of Guyana and TERI during the Summit by Dr Ashni Kumar Singh, Minister of Finance from the Government of Guyana and Dr Vibha Dhawan, Director General, TERI. The Ministry of Agriculture, Government of the Republic of Guyana and TERI agreed to collaborate, share expertise, and act as knowledge partners in working towards sustainable development of agriculture, agribusiness, and related areas in Guyana.



## **CSO Roundtable with COP28 President-Designate**

February 22, 2023: TERI organized a roundtable discussion with H.E. Dr Sultan Al Jaber, Special Envoy on Climate Change and COP28 President Designate, UAE to facilitate an interaction with key civil society organisations (CSO) who participated in the Summit. Dr Jaber observed that the UAE Presidency for COP 28 would provide a voice and help develop partnerships for stakeholders across the globe to work towards a greener and better planet.



**Stakeholder Discussion: Moving the Global Agenda on Cooling - Spotlight on India**

February 22, 2023: The discussion was organized by NRDC India in partnership with UNEP India, Cool Coalition and TERI under the aegis of the World Sustainable Development Forum 2023. The discussion took place at the UN Office at 55 Lodhi Estate, New Delhi. This strategic roundtable brought together key stakeholders to discuss and identify specific action points for the global agenda that will highlight cooling and heat resilience. They also deliberated on ways to contribute to global initiatives such as the COP28 UAE mobilization efforts towards a Global Cooling Pledge.



**MoU Signing between TERI & Capgemini**

February 22, 2023: At the opening day of the World Sustainable Development Summit, TERI and Capgemini announced that it has signed a Memorandum of Understanding (MoU) to further accelerate the Sustainability and ESG (Environmental, Social, and Governance) goals. As part of this collaborative partnership, Capgemini will leverage its sustainable advisory and digital expertise while integrating domain industry capabilities of TERI across clean and renewable energy, water management, carbon sequestration, climate change, and overall sustainability management.



### Tête-à-tête

February 22, 2023: TERI hosted a social event for interaction with the Guest of Honour Prof Jeffrey D Sachs, Professor, Earth Institute and Columbia University during the World Sustainable Development Summit. The discussion went around international relations, the industrial revolution and the Evolution of Global governance. During his address, Dr Sachs underscored the international dynamics, especially the hegemony of North Atlantic regions and the shift from an organic economy to a fossil fuel economy facilitated by industrialization.



### TERI-UNFCCC Letter of Intent

WSDS 2023 saw the signing of a Letter of Intent by H.E. Mr Simon Stiell, Executive Secretary, UNFCCC and Dr Vibha Dhawan, Director-General, TERI.

# Expo

At Summit, the exhibition is one of the features, where we witnessed 16 exhibition stalls and showcased Innovations and art. We invited organizations and artisans who promote sustainability. Artwork that is not harmful to the environment and addresses topics such as climate change, waste, and social issues.

- Caggemini ●
- IKI India ●
- HarvestPlus ●
- Norway ●
- EUROPEAN UNION ●
- EUROPEAN UNION (Youth Climate Conclave) ●
- UNDP-TERI ●
- TERI SAS ●
- TERI Publications ●
- TERI Mart ●
- PowHer ●
- Trash to Cash by Avacayam ●
- Action for Autism ●
- Kalatmak by Palak ●
- 1469 Workshop ●
- The Book Line (Jai Maa) ●

# Act4Earth Manifesto

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As global leaders and stakeholders assembled for the 22nd edition of the World Sustainable Development Summit, it was the planet that took the much-needed centre stage. As we begin heading towards the deep end of the 2030 Agenda, it is now more than ever that the world needs collective visionary leaderships that put forth a collaborative front to act for earth.

In an unwelcome transition from the triple planetary crisis of climate change, biodiversity loss, and pollution, the post-COVID world has seen itself undergo a poly-crisis, warranting the need to reimagine structures of governance at the international, national, and sub-national levels. The problems that we face today cannot be solved by structures of yesterday. Just like the scale and impacts of the climate crisis are based on geographical and socio-economic contexts, addressing today's challenges merits looking beyond the conventional approaches towards a regime that encourages poly-lateralism and poly-centric approaches. Our window to act is shrinking, and it is shrinking fast. As we stand here today on a platform with a legacy of over two decades having served as a means to mobilize opinion-makers for driving ambition and advancing pioneering actions to address vital issues concerning sustainable development and climate change, our message to the world supported by the youth in their Youth Climate Conclave 2023 Pledge is this-

Incremental pledges need to transform into meteoric climate action.

We believe that if enough individuals can be mobilised the opportunity for change is exponential. It is to this end, to nudge action, raise ambition, encourage dialogue, and bring like-minded people together that we have come out with a 10-point Act4Earth Manifesto.

## **We pledge to Act for Earth by:**

- Bringing together stakeholders including governments, businesses, civil society, women, and youth for creating a paradigm shift in the process of policy making and visioning for much needed climate action.
- Reorienting anthropocentric worldviews to nature-centric approaches in policy and governance for intergenerational and intragenerational equity for all life on planet Earth.
- Identifying linkages and good practices within and across Sustainable Development Goals.
- Amplifying global south perspectives on important focus areas on global norms around Global Goal on Adaptation, Financing Loss and Damage, Climate Finance, Global Stocktake, and Transparency.
- Developing actionable frameworks on sustainable consumption and lifestyles by promoting science-based actions, deriving inspiration from indigenous communities, driving policy change, reorienting markets, and enabling social innovations.
- Informing and steering deliberations on key areas aimed towards fostering green growth and development to achieve meaningful outcomes in the G20 fora.
- Realising the criticality of the energy trilemma and develop supply and demand solutions using a systems approach.
- Advocating for nature-based solutions through means such as sustainable agricultural practices to ensure food security while simultaneously ensuring climate resilience and ecosystem integrity.
- Fostering integration and mainstreaming of sustainable development through policy innovations such as green budgeting.
- Addressing global commons' governance gaps by strengthening the climate-ocean interface.

# Ways Forward

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Post the Summit, the team works on documentation and dissemination of the messages of the 22nd Edition of World Sustainable Development Summit. The team will seek to disseminate messages in the form of videos and written summaries, which will be uploaded on the Summit website.

The Energy and Resources Institute launched the Act4Earth initiative at WSDS 2022 focussing on climate action and sustainable development goals (SDGs). The two components of Act4Earth 2023 include COP28 Compass and SDG Charter. The priority areas for Act4Earth 2023 was announced at the Valedictory Session of WSDS 2023.

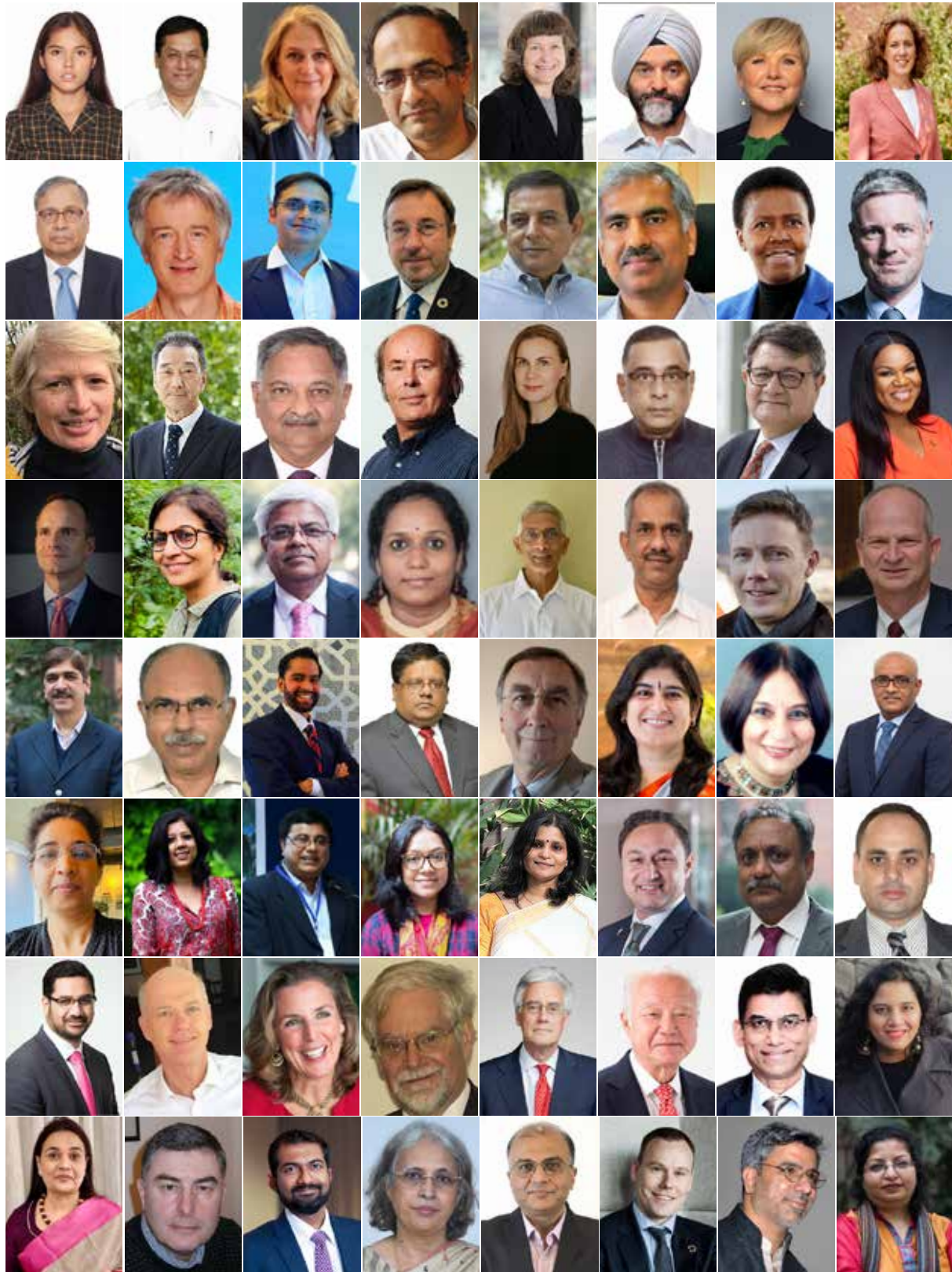
Under COP Compass, TERI researchers will undertake research and stakeholder engagement under two topics. One brief will be prepared on the “Road to Dubai”, which will examine key issues to be considered at the COP28 climate negotiations including global stocktake, climate finance, global goal on adaptation, and loss and damage. Another topic will be on SDG-climate interface with a focus on sustainable lifestyles. Similarly, under SDG Charter, TERI researchers will undertake research and stakeholder engagement under the two topics of green budgeting and means of implementation on non-traditional security with a focus on energy security.

Along with Act4Earth, the team will also deliberate on the themes of the Twenty-Third Edition of the World Sustainable Development Summit, which will be held in February 2024.

# Gallery

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# Expo Booths









# TERI SAS Convocation



# Pledge Tree



# Photo Booth



# Cultural evening performances



# Important Links

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## **WSDS 2023 Website**

<https://wsds.teriin.org/2023/>

## **Act4Earth Manifesto 2023**

<https://wsds.teriin.org/2023/act4earth-manifesto.php>

## **Daily Summit Bulletins**

- Day 1: [https://wsds.teriin.org/2023/assets/pdf/WSDS\\_Bulletin\\_2023\\_Day\\_1\\_updated.pdf](https://wsds.teriin.org/2023/assets/pdf/WSDS_Bulletin_2023_Day_1_updated.pdf)
- Day 2: [https://wsds.teriin.org/2023/assets/pdf/WSDS%20Bulletin\\_2023\\_Day\\_2\\_new.pdf](https://wsds.teriin.org/2023/assets/pdf/WSDS%20Bulletin_2023_Day_2_new.pdf)
- Day 3: [https://wsds.teriin.org/2023/assets/pdf/WSDS\\_Bulletin\\_2023\\_day\\_3.pdf](https://wsds.teriin.org/2023/assets/pdf/WSDS_Bulletin_2023_day_3.pdf)

## **Press Releases**

<https://wsds.teriin.org/2023/news-pressrelease.php>

## **Videos**

<https://wsds.teriin.org/2023/video.php>

# SUMMIT SERIES 2001–2023



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