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# WORLD SUSTAINABLE DEVELOPMENT SUMMIT 2022

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**TOWARDS A RESILIENT PLANET:  
ENSURING A SUSTAINABLE AND EQUITABLE FUTURE**

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**SUMMIT OVERVIEW**



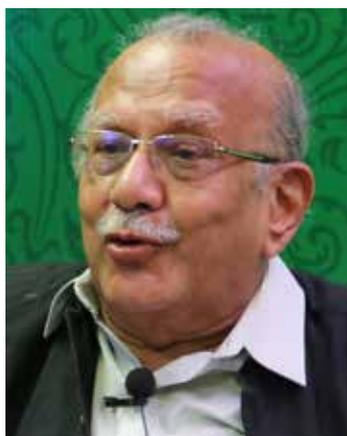
The year 2022 marked the 21st edition of the Summit series. In its journey since 2001, the platform has become a focal point for global thought leaders and practitioners to congregate and drive ambition and action for achieving sustainable development and to address climatic change. The Summit series 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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# Message from the Chair



**Mr Nitin Desai**  
Chairman, TERI

The year 2022 marked the 21st edition of the World Sustainable Development Summit (WSDS) which carried the legacy of the Delhi Sustainable Development Summit instituted by The Energy and Resources Institute (TERI) in 2001 under the visionary leadership of Dr R K Pachauri. This year also marks 50 years since the United Nations Conference on the Human Environment, popularly known as the Stockholm Conference. It has been about 35 years since the Brundtland Commission Report, of which I was a part of, articulated the concept of sustainable development and emphasized that the boundaries defining the countries of the world are not coterminous with the boundaries of ecological systems, and that primarily meant bringing the countries and the governments together.

Even when many of us moved onto the Rio Conference in 1992, it was clear that if we wanted to influence the governments to act, we had to bring in non-governmental actors in a big way. In that context, Rio was the beginning of large-scale engagement of non-governmental actors. The role of individuals, businesses, institutions and organizations is critical in these processes, not just because of their ability to influence the governments, but also because they themselves are determined how the challenge of sustainability is going to be addressed. Many of these stakeholders are young people whose future depends on the actions we take now, and hence have a big stake in how leaders and those in power act today.

What TERI has been doing for over two decades through the WSDS platform becomes extremely crucial in this regard as it brings together these actors, enabling them to talk and exchange experiences with each other. In many ways TERI, because of the breadth of its engagement in sustainability, from technology research & development all the way up to policy analysis and advocacy, is well placed to organize a gathering of such stature.

WSDS has brought together political leaders who can translate sustainable development into policy, corporate leaders and executives who can translate it into investment choices, and researchers and academics who can bring the knowledge, analysis and technology, and civil society organizations who can connect people with those in power. The Summit has been very successful in driving thoughtful deliberations and discussions, which has always been very effective and influential in shaping practical actions on sustainable development.

I am also delighted that one of the highlights of this year's Summit was to launch the Act4Earth initiative, because this programme is essentially about continuous engagement with our stakeholders. As somebody who has been engaged in this sector for more than 35 years, I am truly

happy that we are moving forward with an initiative that takes place not just once a year, but as a continuous process throughout.

I congratulate the Director General of TERI, the Summit Curator, and the entire team for putting together such a thoughtful event and I look forward to initiatives under the 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) in 2022 aimed to ensure all possible stakeholder engagement, ranging from heads of state and government to grassroots level, union ministers, state ministers, climate negotiators, businesses, and youth.

Achieving Agenda 2030, the Paris goals, and addressing the prevailing inequalities unearthed by the pandemic is paramount. To this end, this year's theme—Towards a Resilient Planet: Ensuring a Sustainable and Equitable Future facilitated discussions towards a just and equitable future.

The 2022 Summit also witnessed launch of a major initiative Act4Earth and I am sure in years to come it will become one of the most engaging platform where people will throw new ideas and also look for solutions. TERI also published the COP26 Charter of Actions, a knowledge document prepared by TERI colleagues which was officially launched at COP26 in Glasgow.

I extend my gratitude to the Hon'ble Prime Minister of India, Shri Narendra Modi, for inaugurating the Summit. In spite of his busy schedule, he took some time out to meet with us ahead of the Summit and sent an inaugural message. This gesture shows India's commitments towards a cleaner and greener planet. I need to especially thank the Ministry of Environment, Forest and Climate Change (MOEFCC) for their unwavering support for the Summit since the inception. We thank Shri Bhupender Yadav, Hon'ble Minister of Environment, Forest and Climate Change for gracing the inaugural session of WSDS 2022. I would also like to express my sincere thanks to Ms Leena Nandan, Secretary, MOEFCC and Ms Richa Sharma, Joint Secretary, MOEFCC for their encouragement and guidance.

I thank all the Summit Partners and look forward to extended and strengthened associations in the future editions of the Summit. I would especially like to acknowledge the Royal Norwegian Embassy [Country Partner]; Bloomberg Philanthropies [Star Partner]; Tata Cleantech Capital [Premier Partner]; The Rockefeller Foundation [Premier Partner]; The Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection & International Climate Initiative [Senior Partner]; ClimateWorks Foundation [Senior Partner]; The World Bank [Senior Partner]; and European Union and The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH [Senior Partner].

Towards the end I would also like to highlight that TERI has been consistently working to ensure energy and resource security, foster sustainable development and combat climate change. I am proud to note that this edition of the WSDS brings to all of us, the news of growing voices from across the globe and recognizing the opportunity arising from the

current crisis to build more resilient economies, better prepared than ever for creating a carbon neutral and resilient world, ensuring a sustainable and equitable future: the ethos of our Summit.

# 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 Track-II event on sustainable development and climate action based in the Global South. By playing a constructivist function, the Summit seeks to reinforce commitment at all levels to enhance ambition and action to create a more sustainable and equitable world for present and future generations.

The WSDS this year, inaugurated by the Hon'ble Prime Minister of India, was another milestone. 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.

Held virtually following the second and third waves of the COVID-19 pandemic in India, WSDS 2022 was a testament to the resilience and adaptability that the world currently needs to mitigate the adverse effects of climate change. The Summit saw 12,000+ registered delegates from across 143 countries. 22 entities partnered for the Summit. The media coverage for the Summit was 1,800+, social media reach was 600,000+ and the Summit website users were more than 40,000.

This 21st edition of the Summit was held under the umbrella theme of 'Towards a Resilient Planet: Ensuring a Sustainable and Equitable Future'; to revisit questions related to responses from the perspective of planetary resilience, which must be right from the perspectives of humans as well as Planet Earth. The myriad of Summit sessions, which included 17 plenary sessions, 28 thematic tracks and 10 e-expo booths and were driven by 104 plenary speakers and 223 thematic track speakers, witnessed in-depth deliberations on issues ranging from climate change, sustainable consumption and production, energy & resource security, resilience, and the global commons.

While Hon'ble Prime Minister, Shri Narendra Modi underpinned the "whole of the world" approach and the need for climate justice, Mr Bhupender Yadav, Hon'ble Minister of Environment, Forest, and Climate Change, emphasized on the need to move towards globally sustainable lifestyles that respect planetary boundaries. With three Ministerial Sessions, this Summit edition saw an extremely encouraging participation of Ministers from around the World. Apart from the Ministerial Sessions, special features of the Summit included High-level Session on COP27; High-level Session on Multilateralism; Women Leadership Plenary; CEO Forum; Media Colloquium and a Youth Plenary. For the very first time, the Summit series saw a plenary session on youth and intergenerational dialogue. The

Summit showcased strong representation from political leadership around the world, which reflected the growing political traction to sustainability.

The Summit saw the launch of 'Act4Earth Manifesto' and 'Act4Earth Strategy Paper'. The strategy paper will serve the function of guiding activities such as the COP27 Compass and SDG Charter this year. In November 2021, as a part of the Summit activities, the COP26 Charter of Actions was launched in Glasgow as an official side event of the United Nations Framework Convention on Climate Change.

I express my sincere gratitude to the Ministry of Environment, Forest and Climate Change for supporting the Summit efforts. I would like to place on record the trust shown by the Royal Norwegian Embassy (Country Partner); Bloomberg Philanthropies (Star Partner); Tata Cleantech Capital (Premier Partner); The Rockefeller Foundation (Premier Partner); The Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection & International Climate Initiative (Senior Partner); ClimateWorks Foundation (Senior Partner); The World Bank (Senior Partner); and European Union and The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (Senior 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, virtual platform services provider Kestone, 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 21 successful years, still has a long way to go. Our collective global efforts to create a sustainable, equitable, clean, and green planet have received an impetus from the discussions that took place during WSDS. We look forward to bringing the world together once again at WSDS 2023, to continue our efforts of making sustainable development a globally shared goal.

# Acknowledgements

The year-round efforts, which include the core Summit activities and inter-Summit research and engagement activities inform the Summit discussions. The 21st Edition of the World Sustainable Development Summit (WSDS), organized by The Energy and Resources Institute (TERI) was supported by the Ministry of Environment, Forest and Climate Change, Government of India in partnership with the Royal Norwegian Embassy [Country Partner]; Bloomberg Philanthropies [Star Partner]; Tata Cleantech Capital [Premier Partner]; The Rockefeller Foundation [Premier Partner]; The Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection & International Climate Initiative [Senior Partner]; ClimateWorks Foundation [Senior Partner]; The World Bank [Senior Partner]; and European Union and The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH [Senior Partner]. We express our sincere thanks to the Summit Outreach Partners: auctusESG, British High Commission - New Delhi, Climate Group, Climate Trends, IFAT India, Kaizzen, Natural Resources Defense Council, Outlook Group, POP Movement, TERI School of Advanced Studies, The Food and Land Use Coalition India Country Platform, United Nations Children's Fund – UNICEF, and the World Sustainable Development Forum.

We thank Mr Nitin Desai (Chair, Governing Council, TERI) and Dr Vibha Dhawan (Director General, TERI) for their leadership and for reposing their trust in the Summit team. We are grateful to Ambassador Manjeev Singh 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 of Mr Suman Bery, Ambassador Arne Walthers, Mr Yvo De Boer, Mr Ashutosh Sharma, Mr Indu Shekhar Chaturvedi, Ms Kathleen McGinty, Mr Kazuhiko Takeuchi, Mr Manish Bapna, and Mr Rameshwar Prasad Gupta.

We thank the Advocacy Committee Members of WSDSL Mr Vikram Chandra (Founder, Editorji Technologies), Ms Bahar Dutt (Associate Professor, Shiv Nadar University), Mr Himanshu Shekhar Mishra (Senior Editor - Political & Current Affairs, New Delhi Television Limited), Ms Jayashree Nandi (Assistant Editor, *Hindustan Times*), Dr Rajiv Chhibber (Vice President - External Affairs, Sahajanand Medical Technologies Ltd and Jt. Coordinator, Govt. & Public Affairs, Association of Indian Medical Device Industry), and Mr Vineet Handa (Founder CEO, Kaizzen).

We show appreciation to Dr Prodipto Ghosh, Mr R R Rashmi, Mr Ajay Shankar, Ms Suruchi Bhadwal, and Mr Abhishek Kaushik who guided us in the planning and brainstorming sessions. The Secretariat team acknowledges the colleagues from the Director General's office Mr Shyam Sundar, Mr Anoop Variyambath, Ms Pooja Sehbag and Ms KY Valsa who have been extremely instrumental in ensuring that communications go on time.

We thank Kestone who provided the platform services for the Summit. We thank Kaizzen who provide public relations services for the Summit. The Administrative Services team led by Col. Sanjai Joshi at TERI provided for food, transport and infrastructure during the Summit. We thank them for keeping us nourished, safe, and sound. This year we had 28 thematic tracks. Each thematic track requires the effort of the thematic leads, rapporteurs, and emcees. We would like to thank our former colleagues Ms TCA Avni, Ms Ishani Mukherjee, and Mr Kaushik Guha. We thank the thematic track teams for their efforts. Our special acknowledgement to Ms Lakshmi Subramaniam for providing coordination support. We thank our intern Mr Dennis Roy. The core coordination teams in TERI included Communications and Stakeholder Engagement, Information and Technology Services, and TERI Press.

The Communications and Stakeholder Engagement team has tirelessly worked in promoting WSDS 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 Sonal Bajaj, Ms P Anima, Mr Shreyas Joshi, Mr Sumit Bansal, Mr I I Jose, Mr John Andrus, Mr Neeshu Srivastava, Ms Ritu Ghai, and Ms Tanuja Mehta.

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

Along with managing the website and mailers, the IT team at TERI worked closely with the platform team to ensure successful delivery of the virtual Summit. We also thank their efforts for ensuring that we have a good WSDS website and information is also disseminated by our mailers. From the IT team, we acknowledge Mr Amit Singhal, Mr Varun Pandey, Mr Rohit Chauhan, Mr Vir Bahadur Singh, Ms Aarti Parmar, Mr Anshuman Singh, Ms Ashriti Gupta, Ms Dolly Sangle, Mr Nitin Kumar, Mr Paras Verma, Mr Rahul Kumar, Mr Rohit Kumar, and Mr Shanu Kumar.

**WSDS Secretariat**

(Shailly Kedia, Anuradha Mathur, Nivedita Cholayil, Sonali Mathur, Ravi Nair, Neha Joshi)

# About WSDS

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The World Sustainable Development Summit (WSDS) is the annual flagship Track II 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.

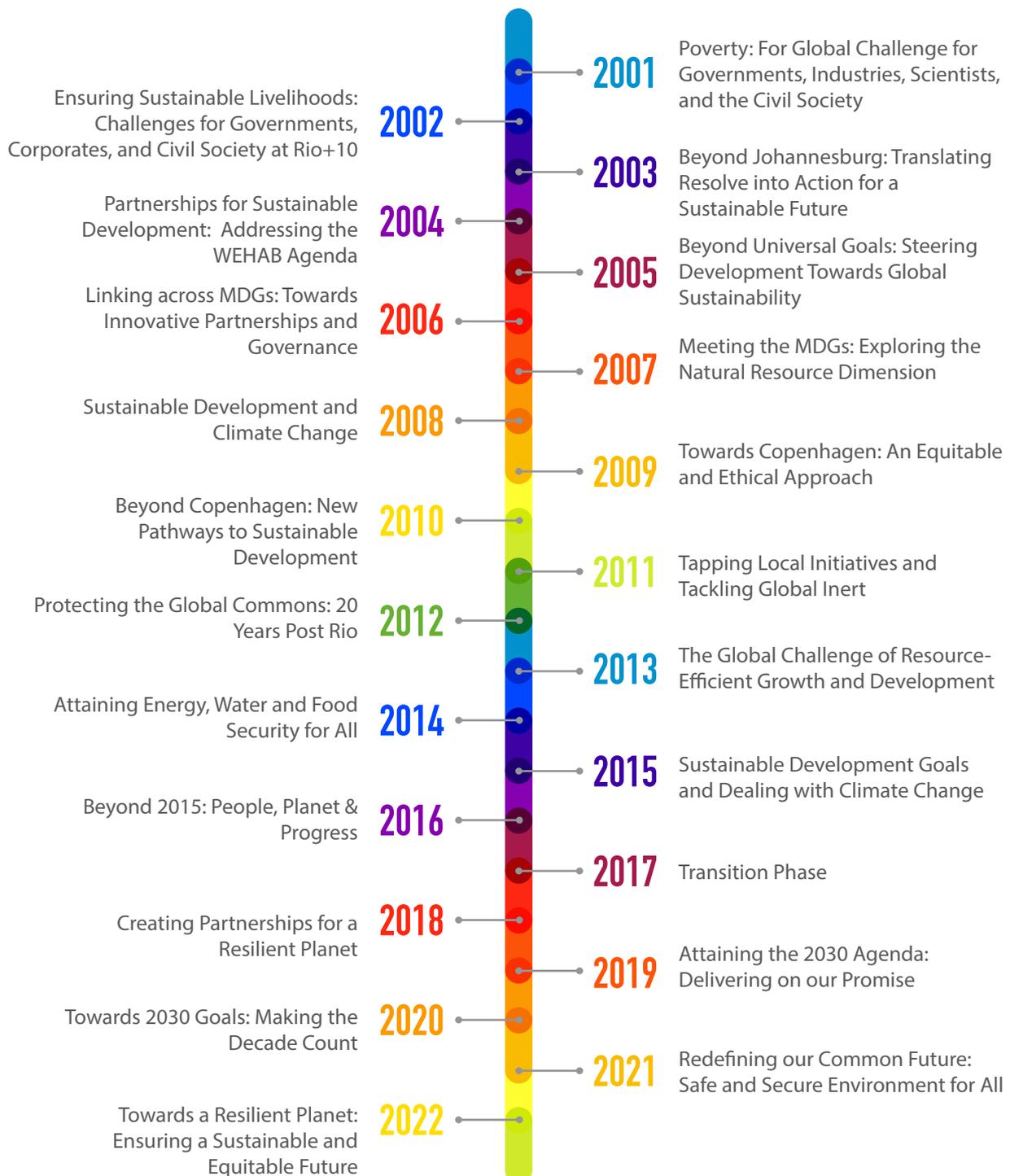
The only independently convened international Summit on sustainable development and environment, based in the Global South, WSDS strives to provide long-term solutions for the benefit of global communities by assembling the world's most enlightened leaders and thinkers on a single platform. In its previous 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 various exhibitions on clean and green innovations.

Over the years, the Summit series has witnessed the participation of 54 Heads of State and Government, 103 Ministers, 13 Nobel Laureates, 1888 Business Leaders, 2745 Speakers, 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 21st Edition of the annual flagship event of The Energy and Resources Institute (TERI)—the World Sustainable Development Summit (WSDS)—was held from February 16–18, 2022 in a virtual format. The Summit deliberations focused on the umbrella theme: Towards a Resilient Planet: Ensuring a Sustainable and Equitable Future. The onslaught of extreme weather events around the world have brought to the forefront how human well-being and the health of our planet are inextricably linked. Just and equitable implementation of climate and environmental policies need to go hand in hand with broader sustainable development objectives. With this background, the deliberations at the 2022 edition of the Summit focused on responses from the perspective of planetary resilience, which benefits humans as well as Planet Earth.

# Summit Series (2001–2022)



# Statistics @WSDS 2022

**12,000+**  
Registered Delegates

**22**  
Partners

**143**  
Countries

**10**  
E-Expo Booths

**45**  
Sessions

**1,800+**  
Media Coverage

**327**  
Speakers

**600,000+**  
Social Media Reach

**25**  
Ministers

**40,000+**  
Website Users

# International Steering Committee

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**Mr Rameshwar Prasad Gupta**

Former Secretary, Ministry of Environment, Forest and Climate Change, Government of India



**Mr Indu Shekhar Chaturvedi**

Secretary, Ministry of New and Renewable Energy, Government of India



**Mr Ashutosh Sharma**

Former Secretary, Ministry of Earth Sciences, Government of India



**Dr Vibha Dhawan**

Director General, The Energy and Resources Institute (TERI)



**Mr Manish Bapna**

President & Chief Executive Officer  
Natural Resources Defense Council (NRDC)



**Mr Suman Bery**

Non-Resident Fellow, Bruegel & Former Chief Economist Strategy and Business Environment, Shell International Limited



**Mr Yvo De Boer**

Former Director General, Global Green Growth Institute, Korea & Former Executive Secretary, UNCCC



**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

# Inaugural Address

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

I am delighted to join you at the 21st World Sustainable Development Summit. Environment and sustainable development have been key focus areas for me all through my 20 years in office, first in Gujarat and now at the national level.

Friends, we have heard people call our planet fragile. But it is not the planet that is fragile. It is us. We are fragile. Our commitments to the planet, to nature, have also been fragile. A lot has been said over the last 50 years, since the 1972 Stockholm Conference. Very little has been done. But in India, we have walked the talk.

Equitable energy access to the poor has been a cornerstone of our environmental policy. Through Ujjwala Yojana, more than 90 million households have been provided access to clean cooking fuel. Under the PM-KUSUM scheme, we have taken renewable energy to the farmers. We are encouraging farmers to set up solar panels, use it and sell surplus power to the grid. Standalone solar pumps as well as efforts for solarizing existing pumps are being scaled up. The focus on "Chemical-free Natural Farming" will also help promote sustainability, and equity.

Friends, our LED bulbs distribution scheme has been running for over seven years. It has helped save more than 220 billion units of electricity and 180 billion tonnes of carbon dioxide emissions per year. We have announced the setting up of the National Hydrogen Mission. It aims to tap into Green Hydrogen, an exciting technology to power our future. I encourage academic and research institutes like TERI to come up with scalable solutions to realize the potential of green hydrogen.

Friends, India is a megadiverse country. With 2.4% of the world's land area, India accounts for nearly 8% of the world's species. It is our duty to protect this ecology. We are strengthening our Protected Area network. The IUCN has recognized our efforts. The Aravalli Biodiversity Park in Haryana has been declared as an OECM site for its effective conservation of biodiversity. I am also glad that two more wetlands from India have got recognition as Ramsar sites recently. India now has 49 Ramsar sites spread over more than 1 million hectares. Restoring degraded land has been one of our main focus areas. Since 2015, we have restored more than 11.5 million hectares. We are on track to achieve the national commitment of Land Degradation Neutrality under the Bonn Challenge. We firmly believe in fulfilling all our commitments made under the UNFCCC. We have also raised our ambitions during COP26 at Glasgow.

Friends, I firmly believe, and I am sure you would agree that environmental sustainability can only be achieved through climate justice. Energy requirements of the people of India are expected to nearly double in the next 20 years. Denying this energy would be denying life itself to millions. Successful climate actions also need adequate financing. For this, developed countries need to fulfil their commitments on finance and technology transfer.

Friends, sustainability requires coordinated action for the global commons. Our efforts have recognized this interdependence. Through the International Solar Alliance, our aim is 'One Sun, One World, One Grid'. We must work towards ensuring availability of clean energy from a worldwide grid everywhere at all times. This is the "whole of the world" approach that India's values stand for.

Friends, The Coalition for Disaster Resilient Infrastructure (CDRI), aims to build strong infrastructure in areas prone to frequent natural disasters. On the sidelines of COP26, we also launched an initiative called "Infrastructure for Resilient Island States". The Island Developing States are the most vulnerable and hence need urgent protection.

Friends, to these two initiatives, we now add LIFE - Lifestyle For Environment. LIFE is about making lifestyle choices to improve our planet. LIFE will be a coalition of like-minded people across the world who will promote sustainable lifestyles. I call them 3Ps - Pro Planet People. This global movement of Pro Planet People (3-Ps) is the Coalition for LIFE. These three global coalitions will form the trinity of our environment efforts for improving the global commons.

Friends, our traditions and culture are the sources of my inspiration. In 2021, I spoke about how the health of people and the planet are interlinked. Indians have always lived in harmony with nature. Our culture, rituals, daily practices and numerous harvest festivals demonstrate our strong bonds with nature. Reduce, reuse, recycle, recover, re-design and re-manufacture have been part of India's cultural ethos. India will continue to act for climate-resilient policies and practices as we have always done.

With these words, and with that solemn promise, I extend my best wishes to TERI and to all the participants from around the world at this Summit.

Thank you!

Thank you very much

# Opening Address

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

It is my pleasure to address you all at the Inaugural Session of the World Sustainable Development Summit 2022. The Summit has a legacy of over two decades. It is an annual flagship event by TERI for discussions on climate action and sustainable development. The theme for this year's event is very timely—towards a resilient planet ensuring a sustainable and equitable future. While economic growth since the industrial revolution has granted countries greater prosperity, it has come at a huge cost to the environment. What we need today is an approach that balances the quest for economic growth and mindful resources consumption. We need to move towards globally sustainable lifestyles that respect planetary boundaries.

At a time, when environmental degradation and emission caused by a lop-sided model of growth was being called an inconvenient truth, the then Chief Minister of Gujarat and currently our Respected Prime Minister came out with a model based on convenient action to protect our planet. At Paris, under his eminent leadership, India gave the concept of sustainable lifestyles and climate justice, both of which found a place in the Preamble of the Paris Agreement. Subsequently, India embarked on a path of strong actions across major sectors of the economy to transition towards low emission development pathway.

As a result of ambitious implementation, we were in a position to further increase the ambition in our climate action at COP26 within five years of ratification of Paris Agreement. For instance, our goal for energy transitions has increased consistently from 175 gigawatts by 2022 to 450 gigawatts by 2030 and now 500 gigawatts by 2030. India demonstrates a clear resolve to move ahead along a sustainable resource efficient growth path.

At COP26, as the implementation of the Paris Agreement began, India reassured the world yet again conveying our 'Panchamrit' (five nectar elements) to the world including the goal of net zero by 2070 and the one-word mantra of LIFE = which means 'lifestyle for environment'.

All these concepts draw from India's old culture and traditions of reverence for Mother Nature and a constant reminder to humanity that a cocoon of luxury will not save us from the impact of climate change. All of us need to do our bit and choose moderation over profligacy and less with excess consumption. In fact, the very logo of my Ministry states 'nature protects if she is protected'; the meaning in the Sanskrit is Prakriti Rakshati Rakshita. Nature can no longer be taken for granted.

Since 2014, our tree and forest cover is only increasing and our forests are filled with life. The population of endangered species such as tiger has been increasing. It is based on such achievement that I want to reassert that both environment and development are just two sides of the same coin and must proceed hand in hand. For development, we do not have to dismantle and degrade our green assets; utilization of resources must be based on mindful and deliberate utilization and not mindless and destructive consumption. The goal of LIFE—lifestyle for the environment—that our Honourable Prime Minister unveiled during COP26 at Glasgow should be adopted by the world to safeguard humanity and the planet.

Those who have contributed the most in taking the world in the wrong direction must also make the maximum effort to come back to the path of sustainability to address global environment challenges including climate change. We must act now on the basis of globally agreed rules taking into account the principle of equity and

common but differentiated responsibility and respective capabilities.

The Paris Agreement goals cannot be reached unless all countries stay within their fair share of global carbon budget; only then climate justice can be achieved. In this context, I am happy to say that India is striving to walk the path with its vision of inclusive low carbon growth and development in its domestic policies and through international cooperation.

Apart from our resolute domestic actions we have reached out to all nations globally as per the vision of our Honourable Prime Minister, Shri Narendra Modi of 'One Sun, One World, One Grid' as part of our pioneering International Solar Alliance. We have also shown our commitment to adaptation in action rather than mere words by setting up and promoting the Coalition of Disaster Resilience Infrastructure.

India has not contributed to aggravating the problem of global warming into a crisis. Our cumulative emissions are only about 4% from the pre-industrial period. Though we have about 17% of the world's population, our per capita annual emission is only about one-third of the world average.

Our way forward will continue to be that of low carbon development based on responsible use of our natural resources with our equitable share of the global carbon budget. India's Nationally Determined Contributions are ambitious and they make a significant contribution towards achieving the temperature goals of the Paris Agreement. Despite the adverse impact of the pandemic on the economy, India has enhanced its climate ambition as India is spearheading one of the most ambitious clean energy transitions in the world.

Inclusive and sustainable macro-economic development of India require that both adaptation and mitigation objectives of the country are uniformly and equitably addressed within the larger goal of meeting our people's aspiration and needs. Our latest Union Budget has reaffirmed our determination to go down with this path.

The developed countries must respond on their part with due ambition. They must meet both their promises of reducing emissions drastically by a shift towards sustainable lifestyles and providing the developing countries with increased finance and technology support. India will do more than its fair share but global climate action requires collective resolve to be successful.

With these words, I wish this Summit all success.

Thank you very much.

Jai Hind!

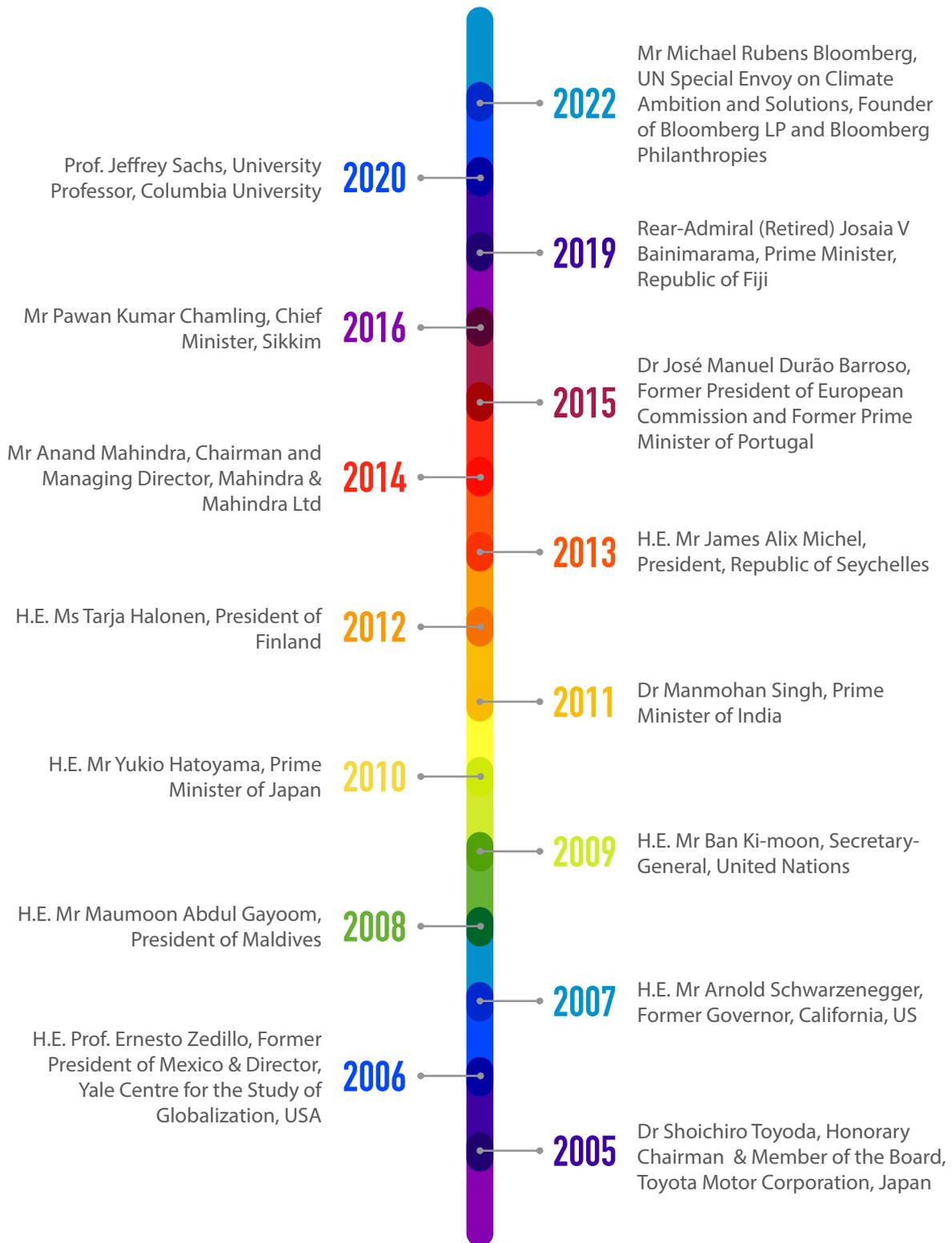
# Sustainable Development Leadership Award

A significant feature of the World Sustainable Development Summit (WSDS) is the Sustainable Development Leadership Award (SDLA), which was instituted by The Energy and Resources Institute (TERI) in 2005. This Award felicitates global leaders for their contributions in the field of sustainable development and environment protection.

This year's Summit saw the felicitation of the Sustainable Development Leadership Award (SDLA) 2022 to H.E. Mr Michael Rubens Bloomberg, UN Special Envoy for Climate Ambition & Solutions, Founder of Bloomberg LP and Bloomberg Philanthropies. In his address, Mr Bloomberg applauded the efforts taken by India in its commitments at COP26. He also reaffirmed that collective action will ensure that we move faster and that collective progress can be made.



**The recipients of the Award from 2005 to 2022 include:**



# Tracing the Summit Days

## **Core Event: Tracing the Summit Days** **Inaugural Session**

**Ambition and Action in the Critical Decade for Addressing Climate Change and Realizing Sustainable Development**



### **About the Session**

The inaugural session saw leaders set vision and policy directions in the present decade for enhanced ambition and accelerated actions. When these 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, thus giving a new or evolved direction to policies and actions. The inaugural session and overall sought to reinforce commitments and actions at all levels to enhance ambition and urgency, which will create a more sustainable and equitable world for present and future generations.

### **Speakers**

#### *Welcome Address*

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

### *Opening Address*

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

### *Keynote Addresses*

- H.E. Dr Irfaan Ali, President of the Republic of Guyana
- Ms Amina J Mohammed, Deputy Secretary-General, United Nations

### *Inaugural Address by Chief Guest*

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

### *Announcement of Sustainable Development Leadership Award*

- Acceptance Speech by Awardee - Mr Michael Rubens Bloomberg, UN Special Envoy on Climate Ambition and Solutions, Founder of Bloomberg LP and Bloomberg Philanthropies

### *Vote of Thanks*

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

### **Key Takeaways**

- A lot has been said over the last 50 years, since the 1972 Stockholm Conference. Very little has been done. Time has come for all stakeholders to walk the talk. There is a need for a global movement towards globally sustainable lifestyles that respect planetary boundaries. Leadership is needed for strengthening protected area networks, Ramsar sites, and restoring degraded land.
- The Paris Agreement goals cannot be reached unless all countries stay within their fair share of global carbon budget. Only then climate justice can be achieved. Developed countries must meet both their promises of reducing emissions drastically by a shift towards sustainable lifestyles and providing the developing countries with increased finance and technology support.
- It is time for all countries to think globally while accelerating efforts at local and national levels. This is indeed a critical decade and all will be answerable to future generations if there is a failure to act now. Measures to address climate change adaptation and mitigation will contribute to the economy, create jobs and protect people's health, thereby, also meeting social and economic objectives.
- Developing countries will need more energy and renewable energy must be deployed at the scale to ensure that the energy transition is not only fast but just. Along with energy transitions, there needs to be a focus on aspects such as reduce, reuse, recycle, recover, re-design, and re-manufacture.
- Developing countries do not have years to wait and must urgently reduce the vulnerability of people—particularly the poorest. There is an urgent need for 50 per cent of climate finance to be allocated to adaptation. Leaders in Glasgow agreed to double adaptation finance from 2019 levels. This is a good start but it will not be enough.
- Reducing the vulnerability of people particularly the poorest is important considering that climate impacts are being felt. There is need to strengthen the call on 50 per cent of climate finance being allocated to adaptation. While leaders in Glasgow agreed to double adaptation finance from 2019 levels, there is need to commit more finance to adaptation.

## Making Words Count



The World Sustainable Development Summit tries to bring together political leaders who can translate sustainable development into policy; corporate leaders and executives who can translate it into investment choices; and researchers and academics who can bring the knowledge, analysis and technology to allow corporates and governments to pursue sustainable development and people involved in civil society organizations to connect people with leaders who have the power.

**Mr Nitin Desai**

Chairman, Governing Council, The Energy and Resources Institute



We must act now on the basis of globally agreed rules taking into account the principle of equity and common but differentiated responsibility and respective capabilities. The Paris Agreement goals cannot be reached unless all countries stay within their fair share of global carbon budget—only then climate justice can be achieved.

**Shri Bhupender Yadav**

Hon'ble Minister for Environment, Forest & Climate Change



Guyana will act strategically and responsibly as the sector develops supporting global energy security while diversifying and decarbonizing Guyana's domestic economy and investing in development priorities for all Guyanese including health education, the productive sectors, and low-carbon opportunities.

**H.E. Dr Irfaan Ali**

President of the Republic of Guyana



Developing countries do not have years to wait and must urgently reduce the vulnerability of people—particularly the poorest. That is why the Secretary General and I have long called for 50 per cent of climate finance to be allocated to adaptation. Leaders in Glasgow agreed to double adaptation finance from 2019 levels. This is a good start but it will not be enough.

**Ms Amina J Mohammed**

Deputy Secretary-General, United Nations



...LIFE - Lifestyle For Environment. LIFE is about making lifestyle choices to improve our planet. LIFE will be a coalition of like-minded people across the world who will promote sustainable lifestyles. I call them 3Ps - Pro Planet People. This global movement of Pro Planet People (3 Ps) is the Coalition for LIFE.

**Hon'ble Prime Minister  
of India**

Shri Narendra Modi



We all know we have a lot of work to do and not a moment to waste.

The good news is all the steps we take fighting climate change will also grow the economy and create jobs and protect people's health.

**Mr Michael Rubens Bloomberg**

UN Special Envoy on Climate Ambition and Solutions;  
Founder of Bloomberg LP and Bloomberg Philanthropies



TERI is a rich human resource centre with very dedicated and motivated colleagues who are working relentlessly.

**Dr Vibha Dhawan**

Director General, The Energy and Resources Institute



## Ministerial Sessions

### Leadership in Developed Countries: Reconciling the Role of States and Markets for Sustainable Consumption and Production



#### About the Session

The Ministerial Session saw leaders from developed countries share experiences that have implications for national and international leadership to achieve the goal of sustainable consumption and production. The role of governments and states is paramount to give market signals. The deliberations examined policy instruments such as macro frameworks, regulatory instruments, fiscal measures, market instruments, information and voluntary instruments. Considering the role of financial markets in determining what is to be valued and consumed, another focus of the discussions were on how could markets be reoriented to promote sustainable consumption and production patterns.

#### Speakers

##### Moderators

- Mr Arne Walther, Former Chairman, International Energy Agency
- Mr Manjeev Singh Puri, Distinguished Fellow, TERI

##### Ministerial Addresses

- Mr John Forbes Kerry, Special Presidential Envoy for Climate, United States
- Mr Espen Barth Eide, Hon'ble Minister, Ministry of Climate and Environment, Norway
- Ms Steffi Lemke, Hon'ble Minister, Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection, Germany
- Mr Steven Guilbeault, Hon'ble Minister of Environment and Climate Change, Canada
- Ms Emma Kari, Hon'ble Minister of the Environment and Climate Change, Finland
- Ms Barbara Pompili, Hon'ble Minister of Ecological Transition, France

- Ms Teresa Ribera Rodríguez, Hon'ble Minister, Ministry for the Ecological Transition and Demographic Challenge, Spain

### **Key Takeaways**

- The future is optimistic in terms of markets for green goods and services. Green capacity is needed to translate to sustainable transitions so that developing countries can develop without making the mistakes that the developed world has already made. Governments have to create the right environment and give the necessary market signals for sustainable consumption and production. There are opportunities to 'race to the top'.
- Sustainable consumption, production and circularity are needed to be looked in terms of cost sharing but also the opportunity sharing. It is also very unfair to leave people behind when the rich and developing world is moving to a post-carbon economy and then large part of the world is stuck with an economy, which is no longer in demand.
- It is essential to strengthen consumer rights and the interface of environmental protection and consumer protection is central to sustainable consumption and production. Rights-based approaches such as the 'right to repair' could be important to steer the present throwaway society in a more sustainable direction. One symbol of this throwaway society is the mountains of plastic waste. To that end, a global agreement to reduce plastic waste is key. Information instruments such as 'repairability index' can help to inform consumer choices. Along with this, lifestyles are of paramount importance. Formal education and consumer awareness are key to sustainable lifestyles.
- Nature-based solutions can ensure that measures being taken for climate action will also be working for nature conservation. The decline and death of species is the second large crisis here and if we want to maintain the basis of life for our next generations, we have to solve these two crises together. Glasgow was also a nature's COP because it also emphasized on maintaining and increasing nature's capacity to give us the ecosystem services that we need to survive. There is an urgent need to connect the outcomes of CBD, UNFCCC, and UNEA.
- In the field of sustainable finance, while citizen and consumer movements are important, we continue to believe that governments need to play a key role in terms of regulation and send in market signals. Financial disclosures and taxonomy for driving sustainable investments is essential to drive investments.
- Environmental taxation is a way to put a price on pollution and the use of natural resources. We need to give a price signal to markets towards more responsible consumption and production patterns. Another way to direct markets is public procurement. The public sector can also act as an important trendsetter in introducing to the market more sustainable products and services with less harmful environmental impacts.
- It is important to design national strategies on circular economy after thoroughly assessing the gaps and needs based on a lifecycle approach. Sectors such as tourism and construction offer huge potential for circular economy measures. Governments have an important role to play in terms of creating the infrastructure, setting the framework, the tax system, the fees to bring resources together and use incentives, use rules and regulations, prohibitions and policy frameworks.

## Making Words Count



Given the population growth we are going to witness, the level of current resource utilization is rapacious and not at all geared towards the prospect of sustainability. That does not mean we cannot get there but it is going to take a monumental transformation. To manage the climate crisis is central to the concept of being sustainable.

**Mr John Forbes Kerry**  
Special Presidential Envoy for Climate, United States



Norway will work towards what I hope will be a global treaty on reducing plastic litter. In global governance, we need to have every country on board because it is extremely unfair to have a green economy, which is good for the world and for nature and climate but which leaves a lot of people behind. But it is also very unfair to leave people behind when the rich and developing world is moving to a post-carbon economy and then large part of the world is stuck with an economy, which is not any longer in demand.

**Mr Espen Barth Eide**  
Hon'ble Minister, Ministry of Climate and Environment,  
Norway



Financial issues are key and that is why Germany will make sustainable finance a key issue under this year's G7 Presidency. We need to make sure how to finance the transition of our economies and our society towards climate neutrality. We have to make sure that the investments will be transparent.

**Ms Steffi Lemke**  
Hon'ble Minister, Federal Ministry for the Environment,  
Nature Conservation, Nuclear Safety and Consumer  
Protection, Germany



Canada now has one of the most stringent carbon pricing systems in the world and carbon pricing is a central policy to allow our country to meet its climate targets including commitment to net zero by 2050. In Canada, there are proposals to establish 'recyclable content requirements' in plastic products and packaging these will send the necessary market signals to drive investment in recycling infrastructure and spur innovation and technology and product design.

**Mr Steven Guilbeault**  
Hon'ble Minister of Environment and  
Climate Change, Canada



Targets are important. Finland has, for example, decided to phase out coal as a source of energy by 2029 and become climate neutral by 2035. We have also set a cap to curb the overconsumption of natural resources. We have set a target to double the productivity of resources as well as to double the circular material use by 2035. The targets will guide the mobilization of a whole range of policy instruments.

**Ms Emma Kari**  
Hon'ble Minister of the Environment and  
Climate Change, Finland



In 2020, France enacted a new law dedicated to promoting circular economy and curbing loss and waste. As an example, since January 2021, electronic appliance must feature a Repairability Index. This new index has been quickly successful with measurable effects on the conception and repairability of appliances sold in France.

**Ms Barbara Pompili**  
Hon'ble Minister of Ecological Transition, France



We need consumers, producers and innovators in the system to work together to facilitate the logistics but also to facilitate the good design and the good management of any product.

**Ms Teresa Ribera Rodríguez**  
Hon'ble Minister, Ministry for the Ecological Transition and  
Demographic Challenge, Spain





The future comes by itself but a sustainable one does not. And political leaders and all those other stakeholders have a lot of work to do.

**Mr Arne Walther**  
Former Chairman, International Energy Agency



We all need to do something in terms of our lifestyles so that we keep this particular mantra of sustainability in consumption and production absolutely at the core of what we do.

**Mr Manjeev Singh Puri**  
Distinguished Fellow, The Energy and Resources Institute



## Leadership in Developing Countries: Reconciling Opportunities and Challenges of Climate Resilient Development



### About the Session

In developing countries, livelihoods and socioeconomic activities depend on climate-sensitive sectors. Thus, developing countries are vulnerable to climate variability. Climate vulnerability coupled with poverty and increasing inequalities makes interventions important despite the challenges. Effects of climate change led to decelerating development and less developed regions tend to have a weaker adaptive capacity and are more prone to climate impacts, thus leading to a vicious cycle. To ensure a climate-resilient development, it is crucial to consider issues that are complex, interconnected, and require interventions at the temporal and spatial levels. International cooperation is an important link to provide critical support to partner countries in the form of finance, technical know-how, as well as capacity building. The public and private sectors, civil society organizations, communities and households all play important roles in addressing these challenges to achieve climate-resilient development that benefits the most vulnerable. Developing countries require urgent access to long-term, affordable finance to implement climate-resilient recovery measures. This session aimed to discuss major opportunities and challenges faced by developing countries in taking systemic and multi-stakeholder approaches to mainstream resilience into development planning.

### Speakers

#### *Moderator*

- Dr Prodipto Ghosh, Distinguished Fellow, TERI

#### *Ministerial Addresses*

- Dr Yasmine Fouad, Hon'ble Minister, Ministry of Environment, Egypt
- Ms Khadeeja Naseem, Hon'ble Minister of State for Environment, Climate Change and Technology, Maldives
- Ms Mariam bint Mohammed Saeed Hareb Almheiri, Hon'ble Minister, Ministry of Climate Change and Environment, United Arab Emirates

*Special Addresses*

- Mr Seydou Bari Sidibe, Advisor to the Minister of Environment and Sustainable Development of the Republic of Guinea
- Dr Junaid Kamal Ahmad, India Country Director, The World Bank
- Mr Kamal Kishore, Member Secretary, National Disaster Management Authority

**Key Takeaways**

- For long-term finance and the new collective quantified goal on climate finance, the momentum seen at Glasgow has to be maintained along the remaining work, including the establishment of the ad hoc working group and the high-level ministerial dialogues from 2022 to 2024. Efforts need to be scaled up with concrete steps to meet the original goal of USD 100 billion per year.
- A very important first step, in terms of national climate action, is to institutionalize the process at the highest level and at the political level. As highlighted in the Egyptian case, their National Climate Change Council is led by the Prime Minister, which helps in mainstreaming climate change in the development processes and programmes.
- There should be a balance between mitigation and adaptation finance, with grant-based finance provided for adaptation-related measures. Addressing climate change also requires building and retention of human resources and institutional capacity. Hence, developed countries should support the developing world, especially those vulnerable and already experiencing impacts of climate change, in building local capacity in those areas.
- Even though all countries we have set common objectives, the path towards sustainable development should not be a matter of literally copying and pasting, but emulating it based on each country's individual context and circumstances. Taking into account our cultures and our multi-circular values will enable us to take effective and sustainable development actions.
- There is a need to change the narrative of the COPs from being centred on NDCs, which asks countries to meet global targets, towards presenting the development transitions of individual countries. The linkage between the development transitions of nations and the climate transition of the world has to be established at the COP, as industrialized countries' development path is much different than that of developing nations.
- People need to be put at the centre of any discussion on climate change. One way to do this is to undertake a more micro-level analysis, as to how climate is going to impact societies and communities locally. The current discussions are at an aggregate level, and hence systems need to be put in to gain a better understanding of climate at the local level. The second way is to make climate science more accessible to people, and break down the jargon so that the science is deeply connected to society.

## Making Words Count



In a recently released study by a well-known consulting firm relying on a well-known global climate linked economic model, the incremental investment costs globally of net zero have been estimated at more than 250 trillion US dollars, which is more than four times the current global GDP. This level of incremental investment will certainly impact economic growth in developing countries besides reducing both fiscal allocations and private investment in social infrastructure, schools, hospitals, public health, water supply, sanitation, and so on.

**Dr Prodipto Ghosh**

Distinguished Fellow, The Energy and Resources Institute



We cannot say we want to mainstream climate change in the development processes actions and programmes at the national level, while we are not putting the head of the government at the heart of that part. We have put that in a National Climate Change Strategy up to 2050 with the pillars of mitigation, adaptation, finance, technology, but much more importantly, governance.

**Dr Yasmine Fouad**

Hon'ble Minister, Ministry of Environment, Egypt



Climate change cannot be limited to nations, its impacts extend beyond borders, beyond human exigencies that are minor in the face of what the planet asks us of today and therefore our response to this challenge must look beyond borders. We need to maintain the spirit of multilateral cooperation that characterize the price agreement especially as a lesson learned from the current pandemic.

**Ms Khadeeja Naseem**

Hon'ble Minister of State for Environment, Climate Change and Technology, Maldives



As the host of COP28, the UAE is committed to working closely with COP presidencies to ensure climate action is progressing at the right pace. In this critical decade for climate we believe there is an enormous potential to build a better world for all through multilateralism.

**Ms Mariam bint Mohammed Saeed Hareb Almheiri**

Hon'ble Minister, Ministry of Climate Change and Environment, United Arab Emirates



It is the responsibility of decision makers at all levels to ensure that the future of future generations is not compromised or mortgaged by frivolous political decisions that do not take into account the fundamental dimensions of sustainable development. It is an opportunity for us to develop without harming the nature.

**Mr Seydou Bari Sidibe**

Advisor to the Minister of Environment and Sustainable Development of the Republic of Guinea



Social protection is the foundation, which will help us brace for change that is yet to come. It will protect our poor, but it will also protect the human capital of our workers going forward. Because of the pandemic, India has made a tectonic shift in the way it is giving social protection.

**Dr Junaid Kamal Ahmad**

India Country Director, The World Bank



Let us put people at the centre. Our experience is that wherever resilience building efforts have succeeded they have not happened just because of government policies, or international frameworks. They have happened because there has been a mass movement and people's participation.

**Mr Kamal Kishore**

Member Secretary, National Disaster Management Authority



## Sub-National Leadership for Inclusive Green Growth



### About the Session

The ministerial session saw sub-national leaders and bureaucrats discuss regulatory and market policy instruments that have enabled green growth at the state and local levels. The leaders deliberated on some of the best practices and innovation that each state has employed to mainstream green growth in the policy framework. The deliberations also focused on the challenges that each state faces in transitioning to a green economy.

### Speakers

#### Moderators

- Dr Vibha Dhawan, Director General, TERI
- Mr Ajay Shankar, Distinguished Fellow, TERI

#### Ministerial Addresses

- Mr Aaditya Uddhav Thackeray, Hon'ble Cabinet Minister of Environment, Government of Maharashtra
- Dr Palanivel Thiagarajan, Hon'ble Finance Minister, Tamil Nadu
- Mr James K Sangma, Hon'ble Cabinet Minister for Forests and Environment, Government of Meghalaya

#### Special Addresses

- Mr Dipak Kumar Singh, Principal Secretary, Environment, Forest, and Climate Change Department, Government of Bihar
- Mr Atul Bagai, Country Director – India, United Nations Environment Programme
- Mr Shantanu Gotmare, Commissioner & Secretary, Government of Assam

### Key Takeaways

- A report should be prepared, which measures a country's or a state's ease of living, based on environmental indicators. This is similar to the Ease of Doing Business reports, which measure countries against indicators related to business regulations and their enforcement.
- It is crucial to set up a council comprising of environment and forests ministers and other allied departments from all states, advising and learning from each other, along with assistance to and from the central government. In this way, policies can be made at the national level and implemented at the state level.
- It is increasingly clear that measuring the growth of a country using GDP is getting outdated, since it does not cover the big picture. There is a need to measure growth in terms of not just per capita GDP, but also by measuring the quality of life. Goals should be set for what will be a good quality of life, with adequate resources with a healthy environment, and safety around them.
- The diversity between states is so vast, in terms of the level of sustainable development and the needs of the states to adapt to impacts of climate change, that there is a need to move at a pace that is comfortable to each state, and in as many sectors as comfortable, rather than a 'One Nation, One X' kind of policy.
- The existing economic and development paradigm needs to be replaced by a concept called environment state, which advocates for an environment-first economic and social model for the Indo-Himalayan region. It means that we need to innovate and be the first in the world to integrate nature in all aspects of development and growth. Sustainability can only be achieved by aligning our growth strategy with nature.
- A step further in terms of decentralization of activities and responsibilities is by giving more support to developing a district-level roadmap to green economy. District-level implementation can also incorporate voices from the indigenous communities who are often the most vulnerable to the impacts of climate change.
- While it is encouraged to foster a regulatory environment, which promotes green growth, any policies that are adopted in this direction should not be pushed in a hurry, without adequate research and development on their environment costs, because there may be some immediate gain, with negative impacts in the long term.
- Sustainable development has to be based on the three pillars of reduce, reuse, and recycle, which advocates for sustainable consumption and production practices. The current growth paradigm needs to be critically examined because, as a strategy, it shortens the life of consumer goods so as to increase the frequency of replacement.
- States need to create a regulatory environment, which promotes the use of alternative materials in various sectors of economy, especially in the hard-to-abate sector. These alternative materials could include different types of waste materials and industrial by-products, which may be used in road construction, instead of standard materials. This practice will result in a reduced need for the exploitation of natural resources and also lower quantity of waste is accumulated in landfills.
- It is clear that businesses are increasingly aware of the benefits of shifting to sustainable practices, but yet, there is still some reluctance to invest in this transition due to the high risks. States should set up a combined trust to provide an additional incentive and minimize risks for industries to develop technologies and implement policies, which will help mainstream sustainability.

## Making Words Count



Green growth actually requires rethinking our growth strategies and policies instruments with respect to environment sustainability and resource availability to all sectors of society including the vulnerable and marginal groups.

**Dr Vibha Dhawan**

Director General, The Energy and Resources Institute



Imagine the impact on the world we can have if all our states and union territories and all citizens of India come together and start moving towards resilience, adaptation, and mitigation.

**Mr Aaditya Uddhav Thackeray**

Hon'ble Cabinet Minister of Environment, Government of Maharashtra



I firmly believe that the only way to succeed from here in achieving any of these goals is in the sub-national and the sub-state level; this needs to be implemented in every village, in every village union, in every district, in every state, and it requires the kind of localization, customization and acculturation that can only happen through communities that are integrated and lived with each other.

**Dr Palanivel Thiagarajan**

Hon'ble Finance Minister, Tamil Nadu



Whether we like it or not the environment is still lingering on the ideological and regulatory fringes of our polity but I want to pole vault it to the forefront of political economy. Sub-national frameworks, innovations and unorthodox alliances can create a decentralization of global and national climate agendas, which is critical for us to restore our nature and preserve the fast depleting natural resources.

**Mr James K Sangma**

Hon'ble Cabinet Minister for Power, Government of Meghalaya



One certainly big gap is that the NDC is, for example, just taking one international target, and are at the central level or at the pan-India level, but the gap is that how do state governments, industry, civil society or what percentage of their work is going to contribute to the national target.

**Mr Atul Bagai**

Country Director – India, United Nations Environment Programme



The first contradiction which arises is from the aggressive consumerism which is propagated by the current neoliberal development philosophy because this philosophy seeks to boost economic growth through higher consumption. As a strategy, it shortens the life of consumer goods so as to increase the frequency of replacement and it also dissuades reduce and reuse.

**Mr Dipak Kumar Singh**

Principal Secretary, Environment, Forest, and Climate Change Department, Government of Bihar



Just like we have the international carbon targets, can we have sub-national voluntary carbon targets? It can start with few big states or it can start with the smaller states whichever way it is, but I believe the movement has to start somewhere.

**Mr Shantanu Gotmare**

Commissioner & Secretary, Government of Assam



Inclusive green growth and keeping global warming within 1.5°C, making the trade-offs between what would be green and what is not green, and what appears cheaper in the short run are issues which are best addressed at the state level and within the state government system, this prism through which we need to see things, needs to come central stage and become mainstream.

**Mr Ajay Shankar**

Distinguished Fellow, The Energy and Resources Institute

## Special High-level Session

### COP Charter of Actions- From Glasgow to Sharm el-Sheikh



#### About the Session

The message from science is clear. Unless both immediate and ambitious climate actions to reduce greenhouse gas emissions are taken, the earth's temperature is set to rise by 2.7°C above the pre-industrial levels by the end of the century. While strides have been made to include mitigation in the context of the Paris temperature Goals, adaptation has traditionally not been treated on the same footing as mitigation. Global climate deliberations have conspicuously evaded concrete measures on 'adaptation' and means of implementation. This aspect is expected to make progress through the two-year Glasgow–Sharm el-Sheikh work programme, which was set up to accelerate the implementation of the 'global goal on adaptation'. This is expected to give adaptation efforts equal focus as mitigation and help lay out a pathway to ramp up support in terms of finance, technology and capacity building to help vulnerable countries adapt to the impacts of climate change. This session focussed on the roadmap connecting the messages coming out of COP26 in Glasgow to the expectations from COP27 in Egypt. The deliberations at COP26 succeeded in highlighting the need for stabilizing climate at or near 1.5°C but there will be stronger expectations in future COPs on progress on climate finance, technology, capacity and equity.

#### Speakers

##### *Moderator*

- Mr RR Rashmi, Distinguished Fellow, TERI

##### *Science Leadership Address*

- Prof. Petteri Taalas, Secretary-General, World Meteorological Organization

##### *Keynote Address*

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

### *COP Leadership Addresses*

- Rt Hon Alok Sharma, COP26 President & Minister of State at the Cabinet Office, United Kingdom
- H.E. Mr Sameh Shoukry, Hon'ble Foreign Minister, Egypt

### *Special Addresses*

- Mr Yasuo Takahashi, Executive Director, Institute for Global Environmental Studies
- Mr Stig Traavik, Director of the Department for Climate and Environment, NORAD, Norway
- Ms Deepali Khanna, Managing Director-Asia, Rockefeller Foundation

### **Key Takeaways**

- An assessment of the domestic adaptation and mitigation adaptation needs for developing countries could help in understanding how to strengthen these things on the financial mechanisms. There is also a need to understand how to address other sustainability challenges and priorities such as gender inclusion and biodiversity conservation.
- Ending negative fossil fuel subsidies is important, but at the same time we need to find socially-acceptable alternatives as we cannot just remove subsidies from people without giving them an alternative. Greener taxes are also an important instrument and many cities have done well in increasing taxes on car transportation, while improving public transport, for example, which is a way to provide socially-acceptable transition.
- Climate justice is the cornerstone for developing countries when it comes to discussions on climate change, because climate justice has to be a part of it; where is the equity, where is the inclusiveness otherwise. Global policy focus needs to reach the vulnerable countries and communities that need it most, supporting locally-led adaptation.
- There must be an emphasis clearly on enhancing the climate finance flows, and achieving the adaptation goals. Adaptation has to be given pre-eminence in the entire dialogue and again, we come back to the core issues of climate finance and technology transfer. How much transparency is there, how much accountability is important, what is the equity and inclusiveness that is there—these are the points that have to be discussed and deliberated as we work towards the next COP.

## Making Words Count



Many regions have broken records in temperatures. For example, last year was the warmest ever year, in Asia and also Europe. Water is the key, here you can see global water stress hotspots already today and during the coming decades and you can see southern Asia, India, eastern Asia, China, middle east, Africa, Mediterranean region, and both Americas as all regions are very sensitive to changes in the precipitation patterns and melting of the glaciers.

**Prof. Petteri Taalas**

Secretary-General, World Meteorological Organization



We believe in walking the talk, therefore, after the COP26 was done and dusted we have immediately moved forward. We have enunciated our goals and outlined our vision in the form of the budgetary announcements, therefore, I think the world now has to take note of all the various dimensions that we expect the climate change dialogue to move towards.

**Ms Leena Nandan**

Secretary, Ministry of Environment, Forest and Climate Change, Government of India



We thank India for signing the COP26 declaration on zero emission vehicles through which companies', countries, and more committed to rapidly accelerate the clean transition. We welcomed India signing up to the Glasgow breakthroughs, through which countries committed to work together to accelerate the development and deployment of clean technologies so they're accessible and available to all.

**Rt Hon Alok Sharma**

COP26 President & Minister of State at the Cabinet Office, United Kingdom



For us to move together from Glasgow to Sharm el-Sheikh and guarantee outcomes, that serves the greater good—I will be reaching out to all parties, building trust, and searching for the right landing zones and together with my team I will make sure that no country is left behind. That COP27 delivers outcomes that address the priorities and needs of everyone.

**H.E. Mr Sameh Shoukry**  
Hon'ble Foreign Minister, Egypt



Enthusiastic discussions at COP26 in Glasgow last year would increase global policy attention on adaptation in the months ahead, as adaptation finance needs to be doubled by 2025. It needs to reach the vulnerable countries and communities that need it most, supporting locally led adaptation.

**Mr Yasuo Takahashi**  
Executive Director, Institute for Global Environmental Studies



We still think that ending coal needs to be on top of our list of priorities, but we need to couple that with making sure that people have access to electricity, we need to make sure we have clean cooking, we need to in general focus on energy access, and on availability of it, in a socially-acceptable way.

**Mr Stig Traavik**  
Director of the Department for Climate and Environment,  
NORAD, Norway



We must build upon the successes of COP26 and at COP27 push for emission reductions adapting to the impacts of climate change and climate finance, with a focus on finance on adaptation. Together, we can do what was once unimaginable; ensure the fight for our planet also lifts the people, all people everywhere.

**Ms Deepali Khanna**  
Managing Director-Asia, Rockefeller Foundation

## Plenary Sessions

### Multilateralism and Global Action in the Anthropocene for Planetary Resilience



#### About the Session

Human activities are causing unprecedented levels of temperature rise with Earth's surface temperature already crossing 1°C, according to the 2021 report of the Intergovernmental Panel on Climate Change. The evidence that the Earth is warming is unequivocal, and anthropogenic emissions of greenhouse gases, most importantly carbon dioxide (CO<sub>2</sub>), have been responsible for most of the warming since the middle of the twentieth century. Multilateral cooperation to tackle planetary challenges can exhibit increasing returns through positive feedback loops. It is crucial to consider the economic and social embedded-ness when considering initiatives of planetary resilience along with issues of the 'ungoverned' or global commons. In this context, this session focused on how multilateral institutions and stakeholders at all levels can collectively address issues related to planetary resilience in the Anthropocene.

#### Speakers

##### *Moderator*

- Mr Chandrashekhar Dasgupta, Distinguished Fellow Emeritus, The Energy and Resources Institute

##### *Keynote Address*

- Ms Patricia Espinosa, Executive Secretary, United Nations Framework Convention on Climate Change
- Mr Pema Gyamtsho, Director General, ICIMOD
- Mr Frans Timmermans, Executive Vice-President of the European Commission responsible for the European Green Deal

### *Leadership Addresses*

- Dr Bambang Susantono, Vice-President, Knowledge Management and Sustainable Development, Asian Development Bank
- Mr John Roome, Regional Director, South Asia Sustainable Development, World Bank Group

### **Key Takeaways**

- COP26 at Glasgow shifted our collective work to a new phase of implementation of the Paris agreement at the national level. There were several achievements coming out of the Glasgow Climate Pact, but that does not mean we can be complacent. There is a need for concerted transformative action throughout all sectors, bringing together not just states, but also the non-state actors.
- Despite considerable efforts put in over the past years, environment and ecology are still not mainstreamed into the functions of multilateral research & development and financial institutions. This warrants an urgent need to reform and strengthen existing multilateral agreements and explore other innovative mechanisms. The structure and the workflows of the institutions need rethinking, and functions need to be repurposed, such that the environmental and ecological challenges are addressed simultaneously.
- There is a need to integrate scientific knowledge to the functioning of multilateral organizations such as the UNFCCC and the UNCBD and with economic governance systems. Organizations need to engage in generating scientific knowledge, and in gathering evidence on environmental and ecological issues, in order to influence investment decisions on both environment and economic governance systems.
- Nature is our biggest ally in the fight against the climate crisis, and there is a need to protect nature so that it can protect us. Steps should be taken to protect and restore wetlands, peatlands, coastal and marine ecosystems, and manage forests and farmlands in a sustainable way, so that we can give enough space for nature to flourish.
- There is a need to build forward and recover from the pandemic by adapting investment, development and recovery plans to match each country's priorities and climate goals. Multilateral organizations can help provide opportunities to boost economies and lower emissions in the short term, while contributing to a resilient and equitable transformation over the long term.
- Most countries are very focused on metrics such as jobs, growth, poverty reduction, and recovery from the COVID-induced recession. While these are important issues and need individual attention, actions to address climate change, such as transition to low carbon economy and building adaptation capacities, can deliver other positive development impacts such as new jobs and poverty reduction. So, these issues should not be addressed separately, but in a more integrated way.

## Making Words Count



Any notion, however, that we can ease up after Glasgow is misguided. Even with the multiple challenges we face throughout the world, anthropogenic climate change remains the most significant, alarming and rapidly escalating crises facing humanity. Statistics are important but they are static; it is what humanity does with them: that is important.

**Ms Patricia Espinosa**

Executive Secretary, United Nations Framework Convention on Climate Change



Planetary crisis is at the peak, with warnings of the sixth mass extinction event or the Holocene extinction. If the course of action is not corrected for greening our economies and restoring the past degrading ecosystems, this crisis will be amplified in the mountains.

**Mr Pema Gyamtsho**

Director General, ICIMOD



In many ways, COP26 was the moment where the world started to move from ambition to action. We got there, thanks to multilateralism, thanks to the stubborn commitment of almost 200 countries who worked hard to find agreement and we found it.

**Mr Frans Timmermans**

Executive Vice-President of the European Commission responsible for the European Green Deal



Our experience showed that adaptation investment that boosts resilience include: one, nature-based solutions that expand mangroves along coast, second, infrastructure, which manage the risk of flooding, and third, climate smart livelihoods in agroforestry among others. Most importantly, local communities must play a central role in helping deliver these solutions.

**Dr Bambang Susantono**

Vice-President, Knowledge Management and Sustainable Development, Asian Development Bank



The international community really does need to deliver on the USD 100 billion goal. It is important, symbolically, and it is important to drive this agenda forward. Functioning global carbon markets will dramatically increase the speed with which climate issues can be integrated into development and also reduce the cost.

**Mr John Roome**

Regional Director, South Asia Sustainable Development, World Bank Group

## Global Commons beyond Sovereign Domains: Oceans, Atmosphere and Biodiversity



### About the Session

Global economic growth has indeed led to the overuse of these resources leading to Hardin's 'Tragedy of the Commons'—for instance, the atmosphere has been overburdened as a depository for greenhouse gases leading to climate change and marine ecosystems have been overexploited and polluted. Since global commons are outside national jurisdiction, policies related to their conservation and sustainable use, can potentially conflict with national sovereignty and regulation. This calls for different levels of governance in different ways, often requiring global cooperation. This also means that the implementation of such policies will conflict significantly with existing patterns of resource use, sovereignty rights, and well-established interests, thus adding to the complexity. With regards to marine areas, the precise goal of the future would be international instruments under the UN Convention on the Law of the Sea (UNCLOS) on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ). The session sought to examine existing institutional structures and framework under various multilateral organizations such as the United Nations be effectively used and potentially reformed to ensure better governance and protection of the Global Commons especially in marine areas.

### Speakers

#### *Moderator*

- Dr Shailly Kedia, Senior Fellow, TERI

#### *Science Leadership Addresses*

- Prof. Jan Zalasiewicz, Chair, Anthropocene Working Group, International Commission on Stratigraphy & Prof. Mark Williams, Professor, University of Leicester
- Prof. Will Steffen, Emeritus Professor, Australian National University

#### *Leadership Addresses*

- Dr Bruno Oberle, Director General, International Union for Conservation of Nature
- Mr Emmanuel Lenain, Ambassador, Embassy of France

- Mr Hans Jacob Frydenlund, Ambassador, The Royal Norwegian Embassy, New Delhi
- Mr Raphael Goulet, Head of Unit for Ocean Governance, Law of the Sea and Arctic Policy, European Commission

*(Launch of Vasundhara [9th Edition], a Student Magazine of TERI School of Advanced Studies)*

### **Key Takeaways**

- We can avoid consequences of the Anthropocene by learning from nature and studying how the beneficial inter-relationships between organisms in natural ecosystems. If human ecologies can be modelled thus, even to the scale of whole cities, then perhaps there is a good way through the Anthropocene.
- Holocene has been the period of stability, which has allowed the expansion of human activities around the world. Holocene is the baseline against which the Anthropocene is being measured. Since 1950, the period of great acceleration, humans have vastly changed the earth system in only a few decades. The great acceleration saw a massive explosion of human population, energy use, GDP, and impact on the earth system.
- To understand the Anthropocene, the planet as a complex system needs to be considered to measure, monitor and examine the profound changes that are occurring not just to land, not just to the biosphere, not just to the geosphere but to the planet as a whole. Most of science is still organized around disciplines, which inhibits systems thinking. Interdisciplinary approaches and systems thinking needs to be encouraged in research and action.
- Planetary boundaries are scientifically based levels of how much we can perturb the complex earth system, beyond which earth system functioning may be significantly altered. The framework tells how the earth system is changing and what a safe operating space is. All boundaries—except for stratospheric ozone are moving in the wrong direction. Novel entities including plastics, radionuclides, electromagnetic radiation could be considered as markers for the Anthropocene. This represents a huge puzzle in terms of addressing a hugely complex issue in a short time frame.
- At the moment, much of the policy thinking is still a very linear thinking instead of dynamic complexity. There is a need to think of an economic system that is just and distributive by design and one that promotes regeneration of biosphere by design.
- Ocean as a common resource is a shared interest of all of humanity and hence equity in approaches is important. The BBNJ agreement can be seen as a key platform to convene the relevant stakeholders in an integrated and transparent manner for raising collective ambitions through nimble institutions. There is a need for evolution of innovative area-based management tools like dynamic closures and migratory corridors and mobile marine-protected areas. To improve our management of the global commons, joint research and data collection is essential to gain common understanding of problems and find solutions together.
- The High Ambition Coalition for Nature and People is a coalition launched to promote an international agreement to protect at least 30% of the world's land and ocean by 2030. Agreements like these are catalytic to spur global action and lead countries towards more ambitious global agreements.
- Biodiversity loss and the climate emergency are going faster than we had anticipated and it is critical to act now to conserve Antarctica's marine biodiversity and ecosystems. The establishment of the world's largest high-seas marine protected area in the Ross Sea in the Southern Ocean are milestones in the conservation of Antarctica's unique marine biodiversity and ecosystems. The goal of representative system of marine protected areas that the members of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) agreed to establish in 2009 needs to be achieved.
- Plastics make up to 80% of all marine litter and there is need for a strong global agreement on plastic pollution. Even with all the efforts that are being undertaken today, the world will only see a very limited reduction on plastic discharge into the ocean. Improved waste management and recycling is important along with producing less plastic and regulating types of plastic material. A global agreement on plastics is an effective response.

## Making Words Count



Developed and developing nations need to work together to protect and govern the resources coming under global commons. There is a need to develop multi-level and poly-centric approaches that is inclusive of all those who use and depend on these commons including non-human species.

**Dr Shailly Kedia**

Senior Fellow and Associate Director, TERI



It is only in the last century, mainly in the last 70 years that this has taken a very steep upturn to load the atmosphere with carbon dioxide. It may be the steepest rise in all of geological history.

**Prof. Jan Zalasiewicz**

Chair, Anthropocene Working Group, International Commission on Stratigraphy



Humans, as a single species are more than 99% of all primate abundance on earth, which is a remarkable figure for any large species. We overconsume and our domesticated mammals account for 95% of the terrestrial mammal biomass and we appropriate as much as a third of the energy from all.

**Prof. Mark Williams**

Professor, University of Leicester; Member, Anthropocene Working Group



We are now identifying a third core boundary, which we call 'novel entities', new stuff- plastics, radionuclides, electromagnetic radiation with Wi-Fi. All this stuff that we are throwing into the earth's system, many of these could be markers for the Anthropocene. Novel entities are a core boundary and those core boundaries represent one of the three spheres of the earth system—the geosphere (climate change), the biosphere (biosphere integrity), and the anthroposphere (novel entities).

**Prof. Will Steffen**

Emeritus Professor, Australian National University



It is time now to be bold and visionary but also pragmatic. For the benefit of humankind and ocean, we need to adopt ambitious goals and objectives to secure ocean health, productivity, and resilience. We need to manage the global ocean as a shared common based on principle of equity, informed decision-making, shared responsibility, and accountability.

**Dr Bruno Oberle**  
Director General, International Union for Conservation of Nature



Norway believes that rules-based binding international cooperation through the multilateral system is the best way to preserve our global commons. Contributing to strengthening and adapting global governance especially through the United Nations is a key priority of our foreign policy.

**Mr Hans Jacob Frydenlund**  
Ambassador, The Royal Norwegian Embassy



India also gave us a great occasion to rejoice by joining the High Ambition Coalition for Nature and People. This is a coalition of grouping that was launched during the One Planet Summit in Paris in January 2021 to promote an international agreement to protect at least 30% of the world's land and ocean by 2030.

**Mr Emmanuel Lenain**  
Ambassador, Embassy of France



Science tells us that one of the most effective ways to address this emergency is by respecting and promoting nature-based solutions, for example, marine protected areas, which we need to pursue.

**Mr Raphael Goulet**  
Head of Unit for Ocean Governance, Law of the Sea and Arctic Policy, European Commission

## Women Leadership and our Common Future



### About the Session

As we reeled under the impacts of an unprecedented virus that took the world by storm, our eyes and hopes were fixed on our leaders and how they would navigate us through the crisis. In this unforeseen test of strength, fortitude, commitment and leadership, a certain section of the society fared significantly better than others. The 2030 Agenda for Sustainable Development rightly calls for ensuring women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public life. Women have led sustainable development actions as activists, advocates and scientists and yet, men outpace women in leadership roles across every sector—corporate, non-profit, government, politics, law, education, and security establishments. In this session, our efforts are directed towards facilitating a platform with a strong panel of women leaders from across the globe to come together and deliberate on the path to a sustainable future for all genders, across all sections of society. Our discussions revolved around ways to address the many challenges confronting women in leadership positions, including poor access to social and economic capital, constraining gender culture, paucity of role models/mentors, and inadequate positive attitudes about their own personal capacities.

### Speakers

#### *Moderator*

- Dr Vibha Dhawan, Director General, TERI

#### *Co-moderator*

- Mr Shreyas Joshi, Young Professional, TERI

#### *Leadership Address*

- Prof, Laurence Tubiana, Chief Executive Officer, European Climate Foundation
- Ms Rachel Kyte, Dean, Fletcher School, Tufts University
- Ms Helen Clarkson, Chief Executive Officer, Climate Group

- Ms Kate Hampton, Chief Executive Officer, Children's Investment Fund Foundation
- Ms Mercy Wanja Karunditu, Deputy Executive Director, The Green Belt Movement
- Ms Xiye Bastida, Co-founder, Re-Earth Initiative

### **Key Takeaways**

- There is a need to include diversity in the overall understanding of risk because on one hand, this will help in understanding how risk impacts different members within society differently, and on the other hand, it gives a synthetic view of risk in order to be able to calibrate our response correctly.
- Structural changes are important. While individual action is very crucial, both in climate crisis and in terms of diversity, but with the current systems stacked against us, individual actions are not going to get us to our goals on their own. For instance, there is a need to monitor changes in not just the uptick of higher education but what women are studying and specializing in, when and if they get to university.
- There is a need to invest in asset classes that women and girls can lead and direct. So, what is recognized as value is different when women are in the room, what is recognized as risk is different when women are in the room, and this differentiated assessment of value and of risk is going to be crucial in solving climate change.
- Currently, there exists lack of training and capacity building on climate change issues, which are highly technical, and needs to be unpacked, especially for grassroots women. This unpacked information also needs to be accessible to them. This will help women in breaking the cultural barriers that still exist in Africa, and assume leadership roles.
- Any decision that is made should be looked at from the lens of seventh generation principle, i.e., take in the wisdom of seven generations to ensure stability of the future seven generations. The current system thinks in terms of quarterly reports, or the next semester in school, which is very short term.

## Making Words Count



You have to take everyone with you and also understand their problems and be more caring towards their own colleagues and their families. These virtues are very much ingrained in femininity; thus, the world looks up to its phenomenal women for an effective and creative response to environmental issues that the world is facing today, and to contribute to saving our planet and ensuring that we hand over a liveable and safe world to our future generations.

**Dr Vibha Dhawan**

Director General, The Energy and Resources Institute



One of our biggest fallacies in gender and climate discourse has been that either elevating people to the status of heroes or relegating them to that of being mere victims. This dichotomy perhaps often leads to the blurring of nuances and that uniqueness of gendered experiences that exists even within the female identity.

**Mr Shreyas Joshi**

Young Professional, The Energy and Resources Institute



The impact of climate change reinforces existing social inequality, which means women are more affected, and are more vulnerable to conflict. The way to break these structural patterns is by working to create new ones, ones where women are structurally represented in the decision-making process at all levels.

**Prof. Laurence Tubiana**

Chief Executive Officer, European Climate Foundation



There is a tone deafness to much of our politics, and too much of our leadership have not made progress in their gender balance, within boardrooms or within C-suites of global companies certainly within the financial sector. We have not made progress enough in elected representative chambers in parliaments around the world and so if we do not yet have that synthesized view of risk then how are we going to make the right choices and how to move forward.

**Ms Rachel Kyte**

Dean, Fletcher School, Tufts University



We do need individual action both in climate crisis and regards to diversity but while the systems are stacked against us, individual actions are not going to get us there on their own. So, do that work because you want to, but bring your energy and your power to dismantling the organizational and structural issues that we face.

**Ms Helen Clarkson**  
Chief Executive Officer, Climate Group



We hear the phrase intersectionality a lot and yet much of the world continues to design solutions in silos and this is because we do not put the women and girls at the heart of decision making and see the world from their perspective. Investment by women and girls is actually going to accelerate our recovery and our resilience investment in women and girls.

**Ms Kate Hampton**  
Chief Executive Officer, Children's Investment Fund Foundation



The multi-stakeholder's forum is to focus on their behavioural changes and mindset and also to provide alternatives. Indigenous knowledge is a way to bring local solutions and to refine some of the knowledge that we previously had, and has since been forgotten, and also issues around technological transformation to ensure that we bring technologies that will help communities progress.

**Ms Mercy Wanja Karunditu**  
Deputy Executive Director, The Green Belt Movement



We are the most connected generation and the climate movement is the most connected movement that has ever happened because of globalization, because of technology. It is important to consciously bring in voices that you have never heard before, voices that are not just on western political thought.

**Ms Xiye Bastida**  
Co-founder, Re-Earth Initiative

## Intergenerational Conversations towards Systemic Transformations for Achieving Climate Justice



### About the Session

We live in an evolving and progressive young world, wherein one out of every six people belong to the age group of 15–24 years. It is critical that we work with youth through each and every opportunity that can trigger strong intergenerational conversations that further resonate social and environmental awareness, ushering a new paradigm of change. To support sentiments of an ever growing population of young people, we as responsible adults need to feel the pulse of youth, and provide supportive platforms to facilitate their expressions about contemporary policies and political decisions. Embarking on the journey of learning about climate change and bringing a paradigm shift in the behaviour of individuals, it is pertinent that they should be equipped with skill sets that are holistic and inclusive of the right values and attitudes that empower them to contribute to sustainable development. Intergenerational dialogues have an important role to play in this context, wherein pooling of experiences of elderly generations is balanced by a zeal and commitment of the energetic young population. This session reinforces the relevance of such forums as a safe haven for youth to engage in constructive dialogues and action leading towards environment improvement. The session has successfully made an attempt to strengthen global citizenship competencies/education and the important role played by youth's agency, communication, value for culture and diversity. It highlighted practices including youth voices and choice in global learning spaces.

### Speakers

#### *Opening Remarks*

- Mr Ugo Astuto, Ambassador of the European Union to India and Bhutan, New Delhi
- Mr Vincenzo De Luca, Ambassador of Italy to India, New Delhi

#### *Moderator*

- Dr Livleen Kahlon, Senior Fellow, The Energy and Resources Institute

*Youth Leadership Addresses*

- Ms Vanessa Nakate, Climate Activist, Uganda
- Ms Laura De Vries, European Climate Pact Ambassador in the Netherlands
- Ms Ridhima Pandey, Climate Activist, India
- Mr Arun Krishnamurthy, Founder, Environmentalist Foundation of India

**Key Takeaways**

- Climate justice should have the heart of the people and should have the community involved. Any climate solutions proposed in a particular region or community should involve the leaders or the elders or the chiefs in those communities, because those people know the solutions that they need. It should move beyond technologies, and data points and statistics.
- Most of the global issues such as climate change, or poverty do not come in silos. Therefore, the first step towards any change will be to break these shackles, mingle with people, understand what they are talking about, exchange viewpoints, and then collectively come to an action plan. Hence, an intergenerational dialogue becomes a very important part of the collective action.
- Any policy, especially those on climate justice, should take generational justice into account. In this regard, a generational test on policy is really important because when policy is tested on long-term effects and suitability for the future, it is ensured that the policy is fit for the future generations, as well.
- Governments and policymakers really have to listen to the different voices from the ground, whether it is the youth or indigenous communities. It should not be one-sided, i.e., just the youth speaking and the policymakers not really listening to them. A person experiencing the perils of climate changes and impact of carbon emissions will be able to provide a better account of the issues, and thus can become an important part of the solution.
- A very important way to deal with the climate crisis is to use a language or tone while communicating the subject in a manner where the common man and woman would understand the climate crisis better. There is a large potential in communicating climate change which is not boring, does not look like a green wash, in a manner where logic and science can be embedded with cultural knowledge to ensure that we have the larger population involved in the solution.

## Making Words Count



Both the European Union and India, we have set for ourselves very ambitious renewable energy targets for the next 10 years and we shall demonstrate that strong government goals can drive innovation in our economies and can contribute to reaching the Paris agreement goals more than anyone else.

**Mr Ugo Astuto**

Ambassador of the European Union to India and Bhutan



We have to influence the way we consume, the way we live, the way we use our resources and the role of the young generation and their participation to the process students becomes important. We want to encourage, we want to promote, and we want to have dialogue with young people.

**Mr Vincenzo De Luca**

Ambassador of Italy to India, New Delhi



The first step towards any change is to break these shackles, mingle with people, understand what they are talking about, put forward your viewpoint and then come to a collective action because earth problems do not come in silos. When there is a problem, it impacts the entire globe and therefore, when the solutions are looked at, they have to be connected.

**Dr Livleen Kahlon**

Senior Fellow, The Energy and Resources Institute



Climate justice is about the people and the planet, the same way climate change is more than just statistics and data points and net zero targets. It is about the people, because we have to move beyond the statistics of what is happening to what is actually affecting people's lives. It has to have the heart of the people within the solution.

**Ms Vanessa Nakate**  
Climate Activist, Uganda



I sincerely believe that systemic change can only be achieved when we as humankind come together. If you really want to achieve our sustainability goals, we really have to change our mindset because it is simply not a problem we can solve alone.

**Ms Laura De Vries**  
European Climate Pact Ambassador in the Netherlands



There are a lot of expectations from us but no one tends to have these same expectations from the government itself or no one seems to be asking governments the questions that they have been asking us. No one thinks why the youth is leaving their schools in the first place, are skipping their time from studying and becoming an activist, fighting against government policies or fighting for their rights.

**Ms Ridhima Pandey**  
Climate Activist, India



Modern sophistication and more has meant that there is disconnect between the human and the planet, and we have got one step further as there is disconnect between the human and being himself or herself and this is where the problem lies. We have just become walking-talking consumers, which is adding to the climate crisis and it is no way slowing the process.

**Mr Arun Krishnamurthy**  
Founder, Environmentalist Foundation of India

## Meeting the Twin Goals- Energy Security and Resource Security



### About the Session

As markets go bullish on clean energy technologies and pressure mounts to move away from fossil-fuel energy systems, governments across the world will intensify their efforts to deploy renewable energy technologies. This will also include efforts to address energy poverty and provide energy access. What will be implications of mineral insecurity on addressing efforts to address energy poverty? What will be other socio-economic implications in upstream areas where the mining of critical minerals take place? What will be the implications for material flow as well as circular economy measures? Goal 12 of the SDGs is concerned with natural resource use. In this regard, a key question is how can the linkages between SDG 12 and SDG 7 be strengthened? The issue of better factoring 'resource security' in discussions around energy transitions and addressing energy poverty has not received adequate attention. This session was aimed to be a critical reflection on the present narratives around energy transitions from the perspective of 'resource security'.

### Speakers

#### *Chair*

- Mr Suman Bery, Non-Resident Fellow, Bruegel

#### *Leadership Addresses*

Lord Adair Turner, Chairman, Energy Transitions Commission

- Dr Janez Potočnik, Co-chair, International Resource Panel
- Dr Ajay Mathur, Director General, International Solar Alliance
- Dr Youba Sokona, Vice Chair, Intergovernmental Panel on Climate Change
- Dr Shonali Pachauri, Research Group Leader, International Institute for Applied Systems Analysis

### Key Takeaways

- We need to evolve the energy transitions discussions from being focused around products and technologies to being more service oriented. For example, in the transport sector, the core problem is also the huge underutilization of private vehicles, leading to inefficient overuse of resources. The society needs mobility and does not need cars. Combining supply and demand part of policy questions and offering even more convincing policy answers to fighting climate change.
- Considering the various risks including commodity prices, renewable-energy based systems could not only contribute to decarbonization goals but also to a fossil fuel-based system. However, it is also crucially important to anticipate and manage the challenges, which energy transitions can bring. Robust regulatory instruments and sourcing commitments are essential to mitigate adverse environmental impacts and commodity risks.
- Undesirable lock-ins due to energy transitions need to get due attention and need to be mitigated. The Global Stocktake to be held during COP28 offers an opportunity to look at the unintended adverse effects of climate measures and should be seen as an important means to advance the kinds of safeguards that are needed for equitable transitions towards the Paris Agreement's goals.
- Potential solutions exist that also factor in the resource angle, which are currently not taken fully into account in energy transitions. There is also a need to address the prevailing silos logic, leading to improvements in one area, while creating unintended consequences in the others. With the right approaches and policies, the world can avoid, maximize co-benefits, and avoid future lock-ins.
- Extended producers ownership and creating value through services, rather than products is a very promising avenue to further explore. Diverse sectors are already benefiting from product and service models. There is a need to design incentives so that the producer remains the owner and is therefore incentivized to design it to last and to extract value from the product at the end of its life. The three sectors of digitalization, mobility, and shelter access require particular focus while considering circular economy measures.
- Technologies based on liquid metals, sodium-ion batteries instead of lithium-ion batteries, are being tested. Sodium is much more diverse in its availability than lithium. The development of new kinds of chemistries could address resource issues in future and hence this area needs more focus in terms of research and policies.
- Energy transitions need to ensure distributive implications along with considering life-cycle approaches. The role of the state is important as basically a strong state direction is needed for such a radical shift and yet there is also a belief that decentralization may be the route to go. For poor countries in Africa, it is not an issue of transition, it is an issue of jump-starting because the system does not exist at all. Along with supply-oriented measures, there is a need to further factor in demand-oriented measures.
- What we are seeing is a convergence between the ability to provide decentralized renewable-based electricity in rural areas, the interests of the electricity distribution companies, and the global interests on climate action. It is these kinds of convergences, we need to find, in order for the political support for the changes that we need.

## Making Words Count



As an economist, I am always sceptical of the idea of shortage and if you let markets work, then shortages have a way of correcting themselves. So, challenges to energy transitions is not only about physical constraints, it is going to be about geopolitical constraints as well.

**Mr Suman Bery**  
Non-Resident Fellow, Bruegel



Three things are already very clear. First, that in the long-term, there are no inherent resource constraints, which could prevent massive clean electrification. Second that any adverse local environmental impacts of new mineral exploitation will be far less than those imposed by fossil fuel extraction. Third, that we must manage the transition carefully.

**Lord Adair Turner**  
Chairman, Energy Transitions Commission



The consequences for the triple planetary crisis will be severe. What we really need are systemic interventions, which would limit the need for energy and resource use in the first place. We must focus not only on decarbonization, indeed most important, but also on the need to dematerialize the systems we depend on.

**Dr Janez Potočnik**  
Co-chair, International Resource Panel



The fundamental change that is happening is that now we are seeing materials being used, which have a far greater degree of geographical diversity and availability. So, for PV cells, basic organic materials are being used. What we are seeing is the development of new kinds of chemistries, which address the resource issue.

**Dr Ajay Mathur**

Director General, International Solar Alliance



The Global Stocktake certainly offers an opportunity to look at the unintended adverse effects of climate measures and could therefore be one important space to advance the kinds of safeguards that are needed for equitable transitions towards the Paris Agreement's goals. This must be done across all sorts of fora.

**Dr Youba Sokona**

Vice Chair, Intergovernmental Panel on Climate Change



There are ways to address the mismatch between climate, energy and resource or material policies. One is looking at ways to limit material stock growth through dematerialization, material efficiency, and transition to a more service-based economy. Second, product lifetime extension through repair, maintenance, resale, reuse and repurposing of obsolete fossil infrastructure, for instance. Finally, waste reduction and management through collection and treatment of systems that optimize reuse and recycling.

**Dr Shonali Pachauri**

Research Group Leader, International Institute for Applied Systems Analysis



## Planetary Health, Humanitarian and Equity Implications of Sustainable Development Policies



### About the Session

The term Planetary Health only found way into focus of academic and research discourse in 2015 after the publication of the Rockefeller Foundation-Lancet Commission Report on Planetary Health. The Commission's Report—Safeguarding Human Health in the Anthropocene Epoch—assumes a new epoch and connects to political narratives of climate change and global planetary indicators such as biodiversity loss, ocean acidification, land-use, fish stocks, and population growth. The pandemic unveiled unprecedented humanitarian concerns at a scale never witnessed before. Whether it was access to medical care or vaccines, the exacerbated inequalities yet again ousted the myth that 'everyone is in the same boat'. The same is true for individuals when confronting the impacts of air pollution, water pollution and extreme weather events. Unequal access to affordable healthcare, housing, sanitation and clean drinking water exacerbates vulnerabilities to declining planetary health in the Anthropocene and demonstrates the hamartia of dominant economic growth models. The session sought to deliberate on the humanitarian and equity implications of deteriorating planetary health, which needs to be addressed by the international development community, governments, businesses, and civil society.

### Speakers

#### *Chair*

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

#### *Science Leadership Address*

- Prof. Anthony Capon, Professor, Monash Sustainable Development Institute, Melbourne

### *Leadership Addresses*

- Dr Erik Solheim, President, Green Belt and Road Institute
- Mr Vidar Helgesen, Executive Director, The Nobel Foundation
- Mr Manish Bapna, President & CEO, Natural Resources Defense Council
- Mr Ranjit Barthakur, Founder & President, Balipara Foundation
- Dr Zhou Jinfeng, Secretary-General, China Biodiversity Conservation and Green Development Foundation

### **Key Takeaways**

- Planetary health is about safeguarding the health and well-being of current and future generations through good stewardship of Earth's natural systems, and by rethinking the way we feed, move, house, power, and care for the world. Systems approach, which is really critical to put in place the policies that we do know work across sectors. This means that when we make a change in one part of the system there is potentially unintended consequences in other parts of the system.
- At the heart of much of the problem is our current dominant economic model and our high consumption wasteful model, which needs to transition rapidly to a circular model of the economy, where we focus on reuse, repair, and recycling. So, we need to get this circularity into our economic thinking.
- Intergenerational health equity is an important aspect of how we pay attention to health of the planet and health of people. While attention is paid to health inequities in society, not enough is thought about the legacy, that is, what current generation is doing things might mean for the health and well-being of future generations. This is at the heart of sustainable development, which needs to be brought into everyday thinking.
- Indigenous and local knowledge is a trans-disciplinary approach transcending academic disciplines and valuing know-how from people in policy and practice. This needs to be mainstreamed into how we take care of the planet. This also ensures that we leave no one behind as we move ahead with the sustainable development policies.
- For the green agenda to be successful, one of the biggest drivers is business, not because they have better intentions than government, but they have the resources. Business is driving the world and it is not far behind government. In most nations, the government may not be the most forward-leaning on green development, but some of the business leaders are at the absolute forefront of the green development of the world. Hence, in our green transition, it is important to consider businesses as stakeholders.
- Many public decision-making processes today in all countries are too slow because we have a serial process starting with research, then public commissions, then parliamentary, and government dealing with the issues and often those processes are too long-winded to actually address the speed with which we need solutions today. Policymakers in politics and businesses need to engage much more systematically with those producing knowledge about where the world is heading, where our ecosystems are heading, and what we can do to address the momentous systemic challenges that we have before us.
- There is a strong economic imperative to invest in resilience. By investing early to avoid risk oftentimes is much more economically smart than waiting to respond to a disaster that strikes. It is important to invest in early warning systems, in more efficient water management, in mangroves or more resilient infrastructure because those investments pay off easily. Various cost-benefit analyses have been done in a variety of different areas; one of them found that we had economic benefits at least four times greater than the investment in resilience.

## Making Words Count



Global equity of fairness is needed and that is happening now because the new model makes it possible for developing nations to benefit from the green shift both economically and when it comes to the ecology. The green transition needs to be fair, because we all want fairness. I think that is in the DNA of most of us. Better transition also needs to be fair to be effective because if it is not fair, there will be so much opposition to the transition, that it simply cannot work.

**Dr Erik Solheim**

President, Green Belt and Road Institute



Planetary health is about safeguarding the health and well-being of current and future generations through good stewardship of Earth's natural systems, and by rethinking the way we feed, move, house, power, and care for the world. We need to bring planetary consciousness into everyday life and in our socio-economic and commercial systems, we need to be conscious of the planet in everything we do every day.

**Prof. Anthony Capon**

Professor, Monash Sustainable Development Institute,  
Melbourne



We needed a revolution in planning, we needed to improve how policy and investment decisions are made, we needed to integrate or mainstream risk into both public and private sector decision making across the entire planning process from upstream economic analysis, to risk screening, to environmental and social impact assessments, to budgeting to permitting, to project design and implementation, a need to integrate risk into our planning processes.

**Mr Manish Bapna**

President & CEO, Natural Resources Defense Council



Air pollution is one of the leading causes for the global burden of disease and impacts on human health, and many of the causes that lead to climate change are similar to the causes and sources that lead to air pollution.

**Ms Priya Shankar**

India Director, Environment and Climate Program,  
Bloomberg Philanthropies



We really need science to get its hands more dirty and engaging with politics and we need policymakers in politics and businesses to engage much more systematically with those producing knowledge about how and where the world is heading, where our ecosystems are heading and what we can do to address the momentous systemic challenges that we have before us.

**Mr Vidar Helgesen**

Executive Director, The Nobel Foundation



We need a new economic paradigm centring on nature capital and securing natural assets for sustainable community future. The valuation is a must to pay the rate for social integration. This capturing of ecosystem goods and services to drive delivery of universal basic assets, healthcare, education, and indigenous rural communities will stir our natural asset.

**Mr Ranjit Barthakur**

Founder & President, Balipara Foundation



We believe all the troubles are caused by humans and the only human-based solution is the only solution. Yes, we need globalization, but today we also need localization for local food, for the many ways we need to change. We need to welcome a new civilization to change our way of life, to change our way of production, that is, only human-based solution is the solution to tackle our emergence today.

**Dr Zhou Jinfeng**

Secretary-General, China Biodiversity Conservation and  
Green Development Foundation

## Special Features

### CEO Forum: Reorienting Market Economies and Accelerating Development of Green Technologies for Sustainable Development Goals



#### About the Session

The world is facing an unprecedented challenge in the form of socio-economic inequities, unemployment, climate change, environmental degradation, as well as health crisis. Business sector can play an important role in providing the much-needed support in terms of technology development, propelling innovation and finance. It is essential that the business sector and policymakers come together to unlock means such as finance and regulatory framework needed that is conducive for development, demonstration and deployment of these technologies and innovations. Through this session, executive heads of various business houses will come together to deliberate on how best can the society move from a market-based approach to an innovation-based approach to develop green and clean technologies, taking a step closer to achieving the sustainable development goals.

#### Speakers

##### *Moderator*

- Mr Manish Chourasia, Managing Director, Tata CleanTech Capital Ltd.

##### *Leadership Addresses*

- Dr María Mendiluce, Chief Executive Officer, We Mean Business Coalition, Geneva, Switzerland
- Mr Hussain Al Mahmoudi, Chief Executive Officer, Sharjah Research Technology and Innovation Park
- Mr Sunil Duggal, Group Chief Executive Officer, Vedanta Limited
- Mr Rohit Chandra, Chief Executive Officer, OMC Power Pvt Ltd
- Mr Sumant Sinha, Founder, Chairman & CEO, ReNew Power Private Limited

- Mr Mahendra Singhi, Chief Executive Officer, Dalmia Cement (Bharat) Limited
- Mr Alexander Slater, Deputy Managing Director, US–India Business Council

### **Key Takeaways**

- Global warming is a planetary challenge and has to be addressed through global collaboration. In this regard, partnerships between the government and the private sector, as well as, within the private sector are crucial.
- Innovations are extremely important and we have to keep thinking about how to innovate further and to create grounds for innovation. In this regard, we have to ensure that there is a transfer of capital from the developed world to the developing countries, and at the same time we need to have our policies in place to start working at scale.
- One key takeaway from this conference should be that how climate fund or the green capital would flow to the developing world.
- There is a need to innovate, with collaboration between the government and private sector, which will enable making the economy circular. For this, the government has to come out with proper policies to really make green technologies successful.

## Making Words Count



If people do not realize that they have to pay for carbon usage they will just carry-on emitting carbon into the atmosphere and it is not going to cost them anything, so we need to have a price on carbon.

**Mr Sumant Sinha**

Founder, Chairman & CEO, ReNew Power Private Limited



The private sector, I believe, plays a big role and it is also an evolving role because I think it depends there is no one size fits all. I think the requirement of the private sector India has might vary from the requirement here in the UAE, vis-à-vis other places. In the UAE, the private sector works hand in hand with the government to move the agenda of sustainability and let us say green economy forward in terms of reorienting the strategies or the sustainable development goals.

**Mr Hussain Al Mahmoudi**

Chief Executive Officer, Sharjah Research Technology and Innovation Park



Climate crisis that the world is facing today is intrinsically linked to our broader sustainability challenges covering the 17 SDGs and for these reasons climate neutrality can only become a reality if it touches all parts of society and our economy.

**Dr María Mendiluce**

Chief Executive Officer, We Mean Business Coalition, Geneva, Switzerland



USIBC helps promote a stronger US-India partnership through broader and deeper trade investment ties between our two countries and we are at the forefront of shaping the bilateral economic relationship.

**Mr Alexander Slater**

Deputy Managing Director, US-India Business Council



We have taken a mandate internally that in the next 36 months, we will completely eliminate any use of fossil fuel for generation within our company.

**Mr Rohit Chandra**

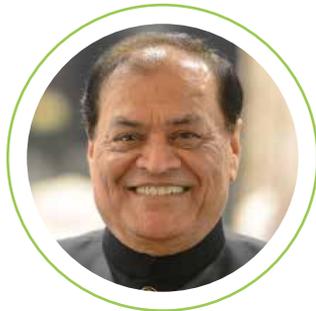
Chief Executive Officer, OMC Power Pvt Ltd



The world is becoming more mineral intensive. We also need lot of minerals like cobalt, copper, lithium, and other minerals, which are very important from the point of view of supporting the renewable energy or the decarbonization of this world.

**Mr Sunil Duggal**

Group Chief Executive Officer, Vedanta Limited



The message is that if we are able to prove in our own organization that clean and green is profitable and sustainable, then the pace of implementing green technologies will go in a faster mode and these green technologies will be the great source for green world.

**Mr Mahendra Singhi**

Chief Executive Officer, Dalmia Cement (Bharat) Limited

## Media Colloquium: Communications as a Means for Shaping Public and Political Perceptions and Attitudes on Climate Action



### About the Session

At the media colloquium, seasoned practitioners across realms of communications, who have covered climate change disasters and the environment at large, discussed ways to shape dialogues and narratives on climate action in the public as well as political arena. The discussion focused on how to break out of the echo chamber, and mobilize a larger audience to engage with issues related to environment and sustainability. The panelists also reiterated that it is important to use all forms of media, including mass media, social media and other forms of communication to put the point across to people and policymakers.

### Speakers

#### *Chair*

- Mr Vikram Chandra, Founder, Editorji

#### *Panelists*

- Ms Fiona Harvey, Environment Correspondent, The Guardian, London
- Ms Bahar Dutt, Environmental Journalist and Conservation Biologist
- Dr Rajiv Chhibber, Vice President – External Affairs, Sahajanand Medical Technologies. Ltd.
- Mr Himanshu Shekhar Mishra, Senior Editor, NDTV
- Ms Jayashree Nandi, Environment Journalist, The Hindustan Times

**Key Takeaways**

- Media is very active only when certain incidents or disasters occur. Over the years, it is true that the number and intensity of coverage around particular incidents have increased. But there is also a need to do a post-disaster analysis, and media coverage on the relief measures and the actual impact of the disaster.
- No news is isolated, and every major issue in this world has some connection to environment issues. There is a need to break away from the isolated mainstream media coverage, and include the aspects related to climate change, environment and sustainability in every related issue, such as national security, health and overall economy. For this, environmental journalists need to work with their colleagues in other beats.
- While reporting on climate action and sustainability, there is a need to get out of the politics of developed versus developing, to report on the issues that affect everyone, and especially the planet. That said, geopolitics is a reality and the western media and the Indian media, along with the media from the developing countries, should both refer to equity and justice as much as they can since we cannot wish away historical responsibility.
- Currently, reporting and communicating on issues related to sustainability and the environment is like preaching to the converted. There is a need to get out of the echo chamber, and reach out to a wider audience who might not necessarily be aware or paying attention to these issues. In this way, enough people can then be mobilized to put pressure on the politicians to do what needs to be done.
- Journalists need to start asking difficult questions to the policymakers and the decision makers, on issues related to sustainability, climate change, and the environment. Journalism is still very soft when it comes to reporting on the environment.
- A good story should have good science but it should also tell the individual story and emotions, so a balance of emotions with good practical science will be essential for good storytelling on the planet. It should not be just the hard-hitting stories, but with emotions as well as hope.

## Making Words Count



We need to make sure that climate change, other biodiversity crisis and other environmental problems are being reflected across the board, in all of our stories, not just environment stories, and not just in one media. I think this has got to be an all-out effort.

**Ms Fiona Harvey**

Environment Correspondent, The Guardian, London



A good story is about avoiding doom and gloom, which typically happens in climate change and lastly, a good story should have good science—of course yes, but it should also tell the individual story, the individual emotions so a balance of emotions with good practical science I think makes for good storytelling for the planet.

**Ms Bahar Dutt**

Environmental Journalist and Conservation Biologist



I am really a believer that media needs to take a pivotal role in disseminating information, following it up also diligently and also providing an analysis of many complex issues that are really impaired. So, it is not one solution that you have; we have to put all solutions in a bucket and have it thrown to everyone else.

**Dr Rajiv Chhibber**

Vice President – External Affairs, Sahajanand Medical Technologies Ltd



India needs new politics. India needs a new political culture, which is far more sensitive to the issues that we are discussing now. The political parties, the governments, the state governments, Parliament of India, the state assemblies, they all have to work in a very concerted way to actually create effective policy action on the ground.

**Mr Himanshu Shekhar Mishra**  
Senior Editor, NDTV



There is no dearth of scientific evidence that we are on the edge of collapse. The scientific community is very confident that we are going to see these impacts in the next few years and this would mean more severe and extreme weather events, very severe monsoon, extreme flooding—all of that. Climate change has come home and it is no more a story that needs to be spelt out to people because people are feeling it. It is just that we are not connecting those dots.

**Ms Jayashree Nandi**  
Environment Journalist, *Hindustan Times*



Whether you are on social media, whether you are on mass media, you seem to be spending a lot of your time on other issues, (such as) TRP-gathering issues, sensational issues, or issues that will drive engagement. (The real issue) tends to get drowned out by just so much irrelevant conversation that may seem irrelevant to us out here, but that is where engagement comes from, that is where TRPs come from.

**Mr Vikram Chandra**  
Founder, Editorji

## In Memoriam: Release of a Book and Archives on Dr R K Pachauri



### About the Session

Rajendra Kumar Pachauri (August 20, 1940–February 13, 2020), universally known as Patchy, was the First Director General of The Energy and Resources Institute (TERI) in 1981 and led the institute for more than three decades and demitted office as Executive Vice Chairman of TERI in 2016. If Darbari Seth was the Founder of TERI, Dr Pachauri was the builder of TERI. Under the leadership of Dr Pachauri, TERI's portfolio of work expanded into new research areas and channels of outreach in the field of energy, economy and environment supported by independent funding agencies, bilateral and multilateral donors and government bodies. TERI was the first organization in the developing world to voice the issue of Climate Change. From being a small floating fledgling, TERI shifted to its own office in the India Habitat Centre, New Delhi. As the Chairman of the IPCC, his leadership contributed to the issue of human-caused climate change becoming recognized as a matter of vital global concern. For this, in 2007, he received the Nobel Peace Prize on behalf of the Intergovernmental Panel on Climate Change (IPCC).

The session at the Summit will see the launch of two outputs as a tribute to Dr Pachauri: (i) A book; (ii) archives.

The book, *Dr R K Pachauri: The Crusader Against Climate Change*, shows the international dimension of Dr Pachauri's 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 TERI RK Pachauri Archives is prepared to document the life and work of Dr Pachauri in the hope that this will inspire TERI colleagues, researchers and generations of leaders who want to further the cause of sustainable development and climate action. The archives has several categories of information such as writings, photographs, and videos.

## Speakers

### *Chair*

- Mr Nitin Desai, Chairman, Governing Council, TERI

### *Reflections by Family Members, Colleagues and Friends*

- Dr Saroj Pachauri, Senior Public Health Professional
- Dr Ash Pachauri, Co-Founder and Senior Mentor, POP Movement
- Dr Mac McQuown Partner, Co-Founder, and Director, Diversified Credit Investments, San Francisco
- Dr Vibha Dhawan, Director-General, TERI

## Making Words Count



Dr Pachauri in many ways represented that integration of talents of disciplines that we require for sustainable development. He became an economist and later an environmentalist and in many ways, these three things are what we need to bring together: Engineering, Economics and Ecology.

**Mr Nitin Desai**

Chairman, Governing Council,  
The Energy and Resources Institute



In this volume, it is Patchy's larger family, his worldwide family, his global family that has provided more than 200 write-ups in this one volume. When I started reading these tributes, I was so touched and emotional about it because the people, his friends and his colleagues were honest and so sincere and so it was really heart-warming to read them.

**Dr Saroj Pachauri**

Senior Public Health Professional



He has always wanted his words, his values, his vision and his wisdom to be an inspiration to every generation. He has believed in cross-generational dialogue, he has believed in the principles of love and respect but also believed very much in youth, inspired by knowledge.

**Dr Ash Pachauri**

Co-Founder and Senior Mentor, POP Movement



He was a get-your-attention-looking human being to begin with and then when he opened his mouth and began to talk about whatever it was on his mind, he always had distinguishing things to say: crisp and to the point. He was not one to mince words and I really admire the clarity of thought and the clarity of exposition.

**Dr Mac McQuown**

Partner, Co-Founder, and Director, Diversified Credit Investments, San Francisco



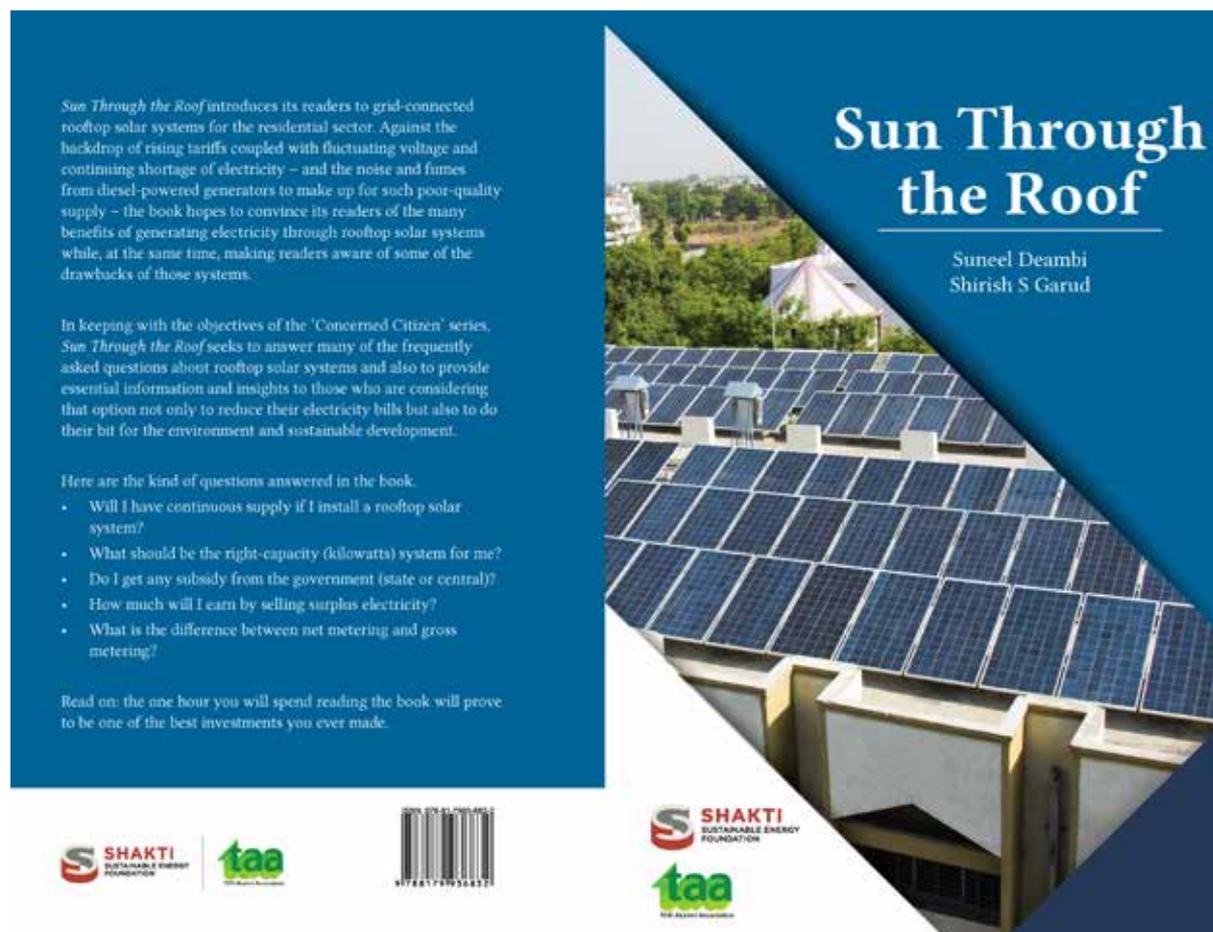
All those who are fortunate to have worked with him have imbibed great qualities of honesty, working selflessly towards a cause, discipline, hard work, and taking risks. In a way, these are the qualities a person should have. Dr Pachauri had all those qualities and many of us were fortunate enough to work with him and imbibed some part of it.

**Dr Vibha Dhawan**

Director General, The Energy and Resources Institute



## Book Launch: Concerned Citizen Series “Sun Through the Roof” by TERI Alumni Association



### About the Session

This plenary session saw the launch of the book titled, Concerned Citizen Series: 'Sun through the Roof' by the TERI Alumni Association. The series, modelled after the UK Quick Reads and the Very Short Introduction To series of the Oxford University Press, will consist of short books (about 60 pages each) written in an engaging and easy-to-understand style and illustrated with infographics.

This book introduces the pivotal role of solar technologies, more so grid-connected rooftop systems across the residential sector, especially in the specific backdrop of existing power choices. At a time when the country's oil import bill and mitigation costs of an ever-increasing levels of greenhouse gas (GHG) emissions are mounting fast, a green technology alternative like solar emerges as quite a suitable option from a variety of end-use considerations. No less important it is to highlight the burden of fast increasing electricity tariffs and still much higher per unit cost of diesel generated power. Solar does not come up to high enough expectations in every manner for the large cross section of urban dwellers as a case specific example. That is why the book written in a free flowing and an easy-to-understand manner talks about some of the inherent weaknesses of solar technology in tandem with many of its key advantages.

Leveraging the diverse expertise of its members in the subject domains and in publishing, the TERI Alumni Association proposes to publish a series of books on topics related to energy, resources, and the environment. The idea is to share information and, even more important, critical insights and understanding, with citizens who are keen to know more about some of the critical issues facing society and the world today but are lost

in the deluge of information. The target audience is educated adults who are concerned about topical issues but lack the understanding to make sense of what they read or watch in the mass media—the series aims to equip them with conceptual tools and essential information not only to enrich their understanding but also to encourage them to act and thereby, albeit indirectly, further the UN Sustainable Development Goals.

### Speakers

#### Chair

- Mr Rakesh Kacker, President, TERI Alumni Association

#### Speakers

- Dr Anshu Bharadwaj, Chief Executive Officer, Shakti Sustainable Energy Foundation
- Dr Suneel Deambi, Book Author

### Key Takeaways

- We always talk about ground mounted, large scale, megawatt utility scale solar power plants, but we often forget that for a resource like solar, decentralized is the way to go, generate right where the demand is and, in that sense, rooftop is what makes eminent sense.
- The author has principally focused on the solar rooftop system, but he also had an inkling of the fact that it should not be the only system that could make sense in an urban set-up. There are several other possibilities, which can go along together with the rooftop system.

## Making Words Count



For a resource like solar, decentralized is the way to go, generate right where the demand is and, in that sense, rooftop is making eminent sense. All the more in today's scenario we are talking about electric mobility and charging in the houses, I think it makes great sense to have to have rooftop PVs.

**Dr Anshu Bhardawaj**

Chief Executive Officer, Shakti Sustainable Energy Foundation



Today, solar PV is becoming a household name more so in the big towns and cities. It is not so much for the actual product use but it is more importantly for the sheer curiosity and the promise that it has generated.

**Dr Suneel Deambi**

Book Author



## In Conversation: A Dialogue with Sadhguru on Our Fragile Planet



Healthy soil is disappearing fast around the world. Agriculture, deforestation and other factors have degraded and eroded topsoil at alarming rates. Globally, 52% of agricultural land is already degraded. The equivalent of one soccer pitch of soil is desertified every two seconds. Much of what remains is stripped of organic matter resulting in dramatic declines in agricultural productivity of the soil. If this continues, the UN estimates that we could lose all cultivable soil in the next 60 years. With a population expected to reach nearly 10 billion by 2050, we could soon face a food crisis of untold proportions. This session sought to highlight the role of social movements on raising awareness on soil health. This special feature saw Dr Vibha Dhawan, Director General, TERI in dialogue with Sadhguru to put soil health at the forefront of policy agendas and societal consciousness.

## Valedictory Session

### Collective Action for Ensuring a Sustainable and Equitable Future



#### About the Session

Environmental problems, such as climate change, represent a classic 'social dilemma' wherein people have little individual incentive to act but, for societies or social groups as a whole, it is 'rational', or in their collective interest, to act. Environmental behaviour can be understood as a type of collective action because individuals who engage in these behaviours likely overestimate their individual contribution to mitigating an environmental problem. Achieving the Sustainable Development Goals (SDGs), including their ambitious targets on climate action, universal healthcare and financing for development, will require stakeholders to work together at all levels in innovative partnerships and initiatives. Only through a renewed momentum for multilateralism, can we shift the world towards a sustainable and resilient path to ensuring that no one is left behind. Multilateral environmental discourses play a critical role in the overall framework of environmental actions and conventions.

The valedictory session is the closing session of the World Sustainable Development Summit. The session saw the launch of Act4Earth. Building on the discussions of WSDS, this initiative will seek to continuously engage with stakeholders from public and private spheres on agendas around sustainable development and climate action. WSDS activities seek to evolve to incorporate principles of outcome-based continuity in stakeholder engagement and action. Being a major global Summit based in the developing part of the World, WSDS seeks to pioneer conversations to drive ambition and action to protect our fragile planet. Efforts will be made to reach out to policymakers and stakeholders to share best practices and also ask them to take up practices. The Act4Earth platform will have two main initiatives: COP Compass and SDG Charter.

#### Speakers

##### *Chairman's Remarks*

- Mr Nitin Desai, Chairman, Governing Council, TERI

#### *Release of Act4Earth Manifesto and Act4Earth Strategy Paper*

- Ms Nivedita Cholayil, Research Associate, TERI
- Ms Anuradha Mathur, Associate Fellow, TERI

#### *Keynote Address: The Next Big steps for Multilateralism on Act4Earth*

- HE Mr Abdulla Shahid, Foreign Minister, Maldives, President of the 76th session of the UN General Assembly

#### *Special Remarks*

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

#### *Acknowledgments*

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

#### *Closing Remarks*

- Dr Vibha Dhawan, Director-General, TERI

#### **Key Takeaways**

- As we recover from the pandemic, it falls on us to strengthen global cooperation and mobilize political will to implement a comprehensive global recovery, one built upon the goals and aspirations of the SDGs. This, we must do with the full understanding that all of the major challenges of our century are global in scale, and cannot be met without the concerted effort of all actors spanning the globe, from governments, to businesses, to civil society.
- It is up to the international community to support initiatives which provide debt relief to economically vulnerable countries such as Small Island Developing States (SIDS), Least Developed Countries (LDCs), and Landlocked Developing Countries (LLDCs); to support industries crucial to their economic well-being, such as tourism; and to strengthen global regimes for development, cooperation, and assistance.
- Through Act4Earth, TERI seeks to drive ambitious and urgent action on climate change and sustainable development through knowledge, dialogue, and capacity building. TERI envisages that through one of its components, namely the COP Compass, to drive change through knowledge creation, dissemination and dialogue, which will inspire and mobilize leadership at all levels for inclusive transitions through ambitious and informed policies and measures. This will enable paradigm shifts towards meeting the Paris goals through mitigation, adaptation, and means of implementation.
- Through the second component of Act4Earth, SDG Charter, TERI seeks to develop inclusive and ambitious policy frameworks. This Charter will seek to ensure that sustainable development is further mainstreamed in government agendas, which will lead to enhanced environmental, social, and economic outcomes.

## Making Words Count



Today the challenge of sustainability is not just getting governments to act on sustainability and governments to get together, but also to get corporations to integrate this into their policies, to get local authorities to integrate it into their work, to get trade unions to accept the importance of world sustainability, as something that is important for the future of work.

**Mr Nitin Desai**

Chairman, Governing Council,  
The Energy and Resources Institute



The era of isolationism is long over. COVID-19 has underscored that reality quite clearly. We will not succeed if we ignore the world around us, if we prioritize one region or issue over others, or if we neglect marginalized and vulnerable communities. We must breathe new life into multilateralism and shape it so that everyone benefits.

**Mr Abdulla Shahid**

Foreign Minister, Maldives, President of the 76th session of  
the UN General Assembly



Absolutely, we need multinational collaboration, but vitally we need the energy, the nobility and the true north values of intergenerational collaboration. Young people should demand that we bring equity together with the mission to protect the environment.

**Ms Kathleen McGinty**

Vice President & Chief Sustainability Government and  
Regulatory Affairs Officer, Johnson Controls



Is it not absolutely wonderful that governments have started taking this to be serious and governments have now made this a priority? Indeed it is now a matter that domestically impacts governments it becomes part of the election manifestos, it gets done by governments across the world not just in small countries but in the largest of countries in the world.

**Mr Manjeev Singh Puri**

Distinguished Fellow, The Energy and Resources Institute

# Thematic Tracks

## Group A

Day 1 | February 16, 2022 | 11:30 AM - 01:00 PM (IST)

Track Name	Venue	Thematic Track Partners
From Grey to Green: Roadmap for India on the Path to Net Zero	Sundarbans	McKinsey & Company
Responsible Climate Action towards a Low Carbon & Resilient Pathway: An Inclusive Worldview	Kanha	MacArthur Foundation
MSMEs and Climate Resilience	Bhadra	
Research and Innovation Outlook for Industry Decarbonization in India	Chinnar	
Enabling Partnerships to Promote Standards and Business Best Practices on Resource Efficiency	Kaziranga	
Achieving Sustainable Development Goals through Carbon and Climate Finance – Forest Sector Experiences from Global South	Hemis	
Breaking Barriers: Youth and Agriculture	Sariska	

## From Grey to Green: Roadmap for India on the Path to Net Zero

The session aimed to bring diverse perspectives from industry leaders who are in the arena driving the transition to net-zero while sustaining growth and economic development. Structured around expert panel discussion with industry and government representatives, the session unfurled the findings from new research and case studies on how winners in this space have already created a lot of value and what could be the key takeaways for building a 'green business' in India along with answering the various questions like what would it actually take to net-zero, how industries can navigate through the transition, and its implications for Indian economy and its various sectors.

**Mr R R Rashmi, Distinguished Fellow, TERI**, expressed that for carbon neutrality we need to mobilize humungous amount of finances. Carbon neutrality depends on GDP and rate of emission growth.

**Mr Naveen Unni, Partner, McKinsey & Company and Leader of McKinsey's Sustainability, India**, highlighted that all major economic systems need to be transformed to net zero. Transition to net zero will leave us with many opportunities.

**Dr M S Ahluwalia, former Deputy Chairman of Planning Commission, Government of India**, remarked that some sort of carbon pricing needs to be discussed. We want electric vehicles, we also want clean energy. But, do we want it in a closed world or do we want it in an open environment, which has competition? No finance is going to come from the UNFCCC, but we need to mobilize G20.

**Dr Anshu Bharadwaj, CEO, Shakti Sustainable Energy Foundation**, spoke of a linear relationship between GDP and CO<sub>2</sub> emission and India has a unique position, where the relation between GDP and CO<sub>2</sub> emission is huge. He further added that it is possible to have a carbon neutral India by having a suitable policy package in place. States are the ones implementing the carbon neutrality; they also need to develop the pathways.

**Ms Ulka Kelkar, Director – Climate, WRI India**, explained that if there is a phasing out of coal, 1.5 million jobs will be lost in coal sector, but if we decide to stretch it out, there will still be 1.2 million jobs in the sector. For scaling up renewable energy, there needs to be investment in battery storage and use of natural gas.

**Dr Vaibhav Chaturvedi, Fellow, Council on Energy, Environment and Water**, added that net zero gives certainty to market but credibility needs to come in and this will come when long-term plan on India's carbon neutrality comes in. Net zero is not an environment debate, it is an economic debate.

## Responsible Climate Action towards a Low Carbon & Resilient Pathway: An Inclusive Worldview

The key intent of this discussion forum was to share the ideas of just transition and to elicit views of the participants, which could enrich the research and provide a larger perspective for further reflections. Basis this deliberation, brainstorming and consolidation of multiple views, TERI would create a thought note, which could guide future policy, research, and action on the ground.

**Dr Anil Kumar Jain, IAS, Secretary (Coal), Government of India**, emphasized that climate change is not a local phenomenon, it is global. India's renewable energy agenda is one of the most ambitious aspirations/targets in the world and it is being recognized by most world leaders. A resilient pathway is critical towards a responsible climate action. Coal is going to plateau in 5–10 years and we have to look for alternative technologies. There is a global recognition that there has to be a country-based strategy.

**Mr Sumanta Chaudhuri, IAS, Former Secretary (Coal), Government of India**, highlighted that if the coal-related activities shut down in the major 20–30 coal bearing districts, there would be a major setback in the economy of these areas. There is need for engagement of finance institutions or other forms of financing and not just budgetary support for this transition and calls for huge challenge considering such a long transition. Optimum use of land under coal mines, skilling, redeployment, retraining are major areas of intervention to deal with transition challenges.

**Dr Kunal Khemnar, IAS, Addl. Municipal Commissioner (Estate), Pune Municipal Corporation,** expressed that just transition should happen in a gradual and phased manner. We need to optimally utilize land and natural resources to create alternative livelihood choices. Chandrapur is the region with one of the highest forest cover with around 42%, but is also one of the most polluted areas in India due to the presence of more than 27 coal mines causing health hazards. Gram panchayats, local ministry, NGOs and private players are significant players in the rural districts and hence they should be considered as key stakeholders. Lack of advanced agricultural skills, opportunities other than coal-related activities, political willpower, presence of experienced administration, and cooperative societies for agriculture would be big challenges in these transitions.

**Mr Jarnail Singh, Deputy Director, India Office, MacArthur Foundation,** added that India is moving on a dual pathway—renewable energy and coal transition; simultaneously focusing on clean energy and energy security requirements. We have to focus on sub-national, state-level approaches for Just Transition. Capturing local voices is crucial especially while engaging with the vulnerable communities. Collective engagement and just transition discourse can perhaps pave the way for a brighter decade ahead and redefine the development model.

**Mr Ayaskant Kanungo, General Manager (Commercial & Corporate Affairs), Odisha Coal & Power Limited** spoke of diversification being the only means to achieve sustainability. Alternative financing model by exploring opportunities in the local level is necessary. Trust deficit should be bridged by engaging local people, self-help groups (SHGs), community, etc., during this transition. Local democracy, people and district-level actors are the key stakeholders. Central and State level policies should be aligned.

**Dr Ashwini K Swain, Fellow, Centre for Policy Research,** said that we need to think about Just Transition as an opportunity for development of the local areas and the people. He emphasized that participatory approaches, budgetary allocations, setting up of dedicated institutions and hand holding the local communities is an important step ahead. Politics is often driven by protection of the coal economy and Just Transition narrative must align with the political priorities and it needs to be made part of developmental policy. We need to fit Just Transition as a part of development policy in the country.

**Mr Subhomoy Bhattacharjee, Consulting Editor, The Business Standard,** explained that Just Transition may be ahead of its time, but is very necessary. The coal production is peaking in 5–10 years and after that industry will start unbundling which would make Just Transition easy. Regulatory aspects and ability to deal with such ambitious agenda needs to be understood and dealt with. Coal enriched states are poor and is it because of any systematic gap? It is crucial for TERI to gain deeper understanding on this.

**Mr Surendran Kumar Pandey, All India Secretary of BMS and Deputy In-charge for Coal Sector,** said that conversion of solid coal into liquid and gaseous coal has the potential of reducing 90% of CO<sub>2</sub> emissions. Carbon capturing and storage could be one efficient option. Switching over to synthetic natural gas, CNG or coal-based methane may be used as alternative and cleaner options. Reskilling and retraining of workers for business switch-over is an essential prerequisite.

## Micro, Small and Medium Enterprises (MSMEs) and Climate Resilience

The thematic track was bodied on the climate change adaptation and mitigation strategies of climate-sensitive agricultural dependent sectors, which are more vulnerable to climate change, business enterprises and MSMEs like the food processing and textile MSMEs. The track focused on the mitigation strategies on how MSMEs can be less vulnerable to climate change by lowering their emission rates and by the adoption of newer and greener technologies, which would then require climate financing by government and private sectors.

**Mr Edwin Koekkoek, First Counsellor, Energy and Climate Action, EU Delegation to India,** added that climate change adaptation and mitigation are at the core of the EU's domestic and external policies. We believe that the policies we put in place now should set our infrastructures, agriculture, industries and investments on the right path towards, greener solutions. European Agenda together with EU's Green Deal gives us a

roadmap with actions to move on a climate neutral European Continent by 2050.

**Mr Vinamra Mishra, Director, Ministry of Micro, Small and Medium Enterprises, Government of India**, said that MSMEs are the second highest employers, after agriculture in the country. “We at the Ministry of MSME and the Government of India are taking steps towards meeting the development needs with the MSMEs; also having an eye on the climate change and mitigation measures”.

**Dr A K Gosain, Professor IIT-Delhi and Director of INRM Consultancy**, highlighted that geo-spatial systems can help in understanding and analysing all these factors on MSME resilience through seasonal change, temperature variability, and precipitation.

**Dr Subodh Jindal, Head of All India Food Processors’ Organisation**, underlined that the real core meals provided to the 135-crore population of our country is being provided by the MSMEs of the country. Understanding how climate change happens, how to be adaptive of it, how to adjust to it, what preparations are required, what measures are to be taken well in time, are the kind of issues we are facing. The current packaging method is not healthy enough. Innovation, research and development is very crucial for the packaging sector in the climate resilience and mitigation scenario.

**Mr Shankar A Pande, Director, Bankers Institute of Rural Development (BIRD), NABARD**, said that to increase the access to financing to MSMEs and the rural sector, we have brought about the concept of sustainable finance. We are trying to understand the risks that we are facing from climate point of view, as far as any bankable solutions are concerned, and how we can convert those problems into opportunities.

Mr Rainer Agster, Director of Operations, SEED, emphasized that climate finance can play an important role in the development of MSMEs in India and generally in the world. He also added that he thinks that the sector of agriculture has a huge potential in this regard.

**Mr Rajiv Kumar, General Manager, Small Industries Development Bank of India**, underlined the fact that MSME sector is a very important sector in the Indian economy. At SIDBI, they have realized that MSMEs also have the potential to bring in technologies and innovation, which then can provide a lot of services not only to MSMEs but also other sectors to become energy efficient.

**Mr R K Vij, President, The Textile Association of India**, said that governments should give subsidies and technological aid to the MSMEs, especially in the textile industry, as they are the most vulnerable to climate change. If financial and technological aid was given to Indian MSMEs, there would definitely be a rise in the number of Indian entrepreneurs.

## Research and Innovation Outlook for Industry Decarbonization in India

Sectors such as iron & steel, cement, fertilizers are being termed as harder-to-abate (HTA) and these are moving towards overall decarbonization. In industry, almost 70–80% of emissions are from thermal energy use and the rest is balanced through electricity. Research within TERI and globally has focussed on decarbonization, which gives an idea that technically it is possible to reduce the emission from the industrial processes but the real challenge comes out as commercial applicability of those technologies. Recent studies by TERI have instated the belief of the four pillars towards the way to industrial decarbonization. The objective of the deliberation was to explore research and innovation activities across academia like IIT Bombay and the view on possible steps to move forward to decarbonization from supply and demand side.

**Mr Anshul Mathur, Vice President, Communications and Advocacy, Asia Pacific, bp**, said societies are changing; world’s carbon budget is finite. Society not just wants reliable and affordable energy but also clean energy. Companies and collaborations can show climate leadership by sharing a common purpose of greening and leading India’s energy transition. After all, it’s not about having the change but wanting the change.

**Dr Arvind Bodhankar, Executive Director-ESG and Chief Risk Officer, Dalmia Bharat Group**, highlighted that grants or fund flow into the industry, carbon marketing with the right pricing, and trade flexibility in the global market is the necessity for cost competitiveness and technological advancement in cement industry.

**Mr Lokendra Raj Singh, Chief Operating Officer, JSW Steel Ltd., Vijayanagar**, underlined the fact that decarbonization in the existing plants requires large investment and policy support whereas new plants should be built with defined specific energy consumption.

**Mr M Muthukrishnan, Airport Sector-Head of Environment, Health and Sustainability, GMR Group**, said that focus on raw material sourcing, enhancing process technology and low carbon emission in supply chain is needed to reduce overall energy intensity of the sector and the country. Institutions, policymakers and industries should come forward and contribute to research and development, then only the target to limit warming to 1.5 degree Celsius can be achieved.

**Dr S Nand, Deputy Director General, The Fertilisers Association of India**, highlighted that fertilizers are also helping in decarbonization indirectly by growing more crops and capturing more carbon.

**Mr Rajeev Kumar, VP Regions Cities and Solutions, bp** said that industries will play a much bigger role in India to achieve its emission reduction goal of 1 billion tonnes by 2030. To help the industries, the government needs to provide support in terms of policy, incentives, and green product premium.

## Enabling Partnerships to Promote Standards and Business Best Practices on Resource Efficiency

The thematic track provided valuable insight into enabling resource efficiency (RE) and circular economy (CE) across sectors and bolstering India's G20 presidency in 2023 through EU-India partnership. The initiatives undertaken by India and EU, along with the challenges and way forward were discussed. The need for policies recognizing consumers as main players along with EPR and original equipment manufacturer (OEM), promotion of industrial symbiosis and start-ups through incentives and mainstreaming of informal sector were highlighted.

**Mr Sudhir Kumar, Advisor, NITI Aayog**, said that collaboration is required for taking initiatives in the right direction. Upgradation needs attention for informal sector.

**Ms Astrid Schomaker, Director, DG-Environment**, mentioned that clean transport, energy sectors and sustainable system require a radicle shift and consumers should play their part. The economic model should be compatible with the future generations. Whole economic model should be developed covering all sectors supported through cross policy and cross government approach.

**Dr Rachna Arora, Team Leader & Coordinator EU-REI, GIZ**, highlighted that capacity building on resource efficiency/circular economy and developing tools for implementation should be our next goal. Forces and committees are needed for promoting innovation and enabling business action.

**Dr Sandip Chatterjee, Director, the Ministry of Electronics and Information Technology (MeitY)**, spoke of resistance to right-to-repair needs further deliberation. He also talked about formalization of informal sector, sensitizing stakeholders.

**Mr Ulhas Parlikar, Global Consultant, Waste Management, Circular Economy, Policy Advocacy & Co-processing**, spoke about converting of liabilities into useful assets. One thing that the society or consumer will not like is the word waste.

## Achieving Sustainable Development Goals through Carbon and Climate Finance – Forest Sector Experiences from Global South

The session highlighted the importance of carbon finance in achieving Sustainable Development Goals (SDGs). Forest and trees are stated primarily as social and environmental resource and secondarily as commercial resource. Forests help in both mitigating climate change as well as have a huge potential for generating

carbon finance and improving the livelihood of local communities, thereby directly contributing to SDG 5, 13, 14, and 15 and indirectly contributing towards SDG 1, 2, 8, 10, 12, and 17. As per India State of Forest Report 2021 (ISFR 2021), increase in forest cover is imperative for the attainment of NDC goals and people contributing towards the increase should be compensated and therefore carbon finance can be considered potential option.

**Dr J V Sharma, Director, Land Resource, TERI**, emphasized that capacity building is one of the most crucial aspect to sustain the carbon finance project for long-term.

**Mr C P Goyal, Director General of Forest & Special Secretary, Ministry of Environment, Forest and Climate Change, Government of India**, spoke of Trees Outside Forests (TOF), including farm forestry and agroforestry are major sectors of improvement to enhance the tree cover.

**Mr Pablo Cesar Benitez, Senior Environmental Economist, World Bank**, in his remarks added that it is important to collaborate and work together for enhancing the functioning of ecosystem services.

**Mr Anupam Joshi, Senior Environmental Specialist, World Bank**, highlighted that trees outside forests have significant contributions in achieving the COP26 goal, that is, net-zero emissions by 2070.

**Mr Sandeep Roy Choudhury, Director, VNV Advisory, India**, added that improving quality of existing forests is as important as enhancing the tree cover.

## Breaking Barriers: Youth and Agriculture

Agriculture has made tremendous progress since the Green Revolution, which more or less emerged as a technological solution to meet the challenges of feeding India's population in the 1960s. However, the intensive use of land and related resources has raised serious concerns about land degradation and unsustainable and inequitable use of water, particularly groundwater for irrigation. In recent years, the agriculture sector has been facing several challenges, including declining farm profitability, depletion of natural resources, resurgence of pests and diseases, global warming, climate change, and all of these are posing potential and serious threats to the sustainable agricultural production. Addressing this will mean building the capabilities and skills for advancing innovation, diversification, commercialization, sustainability and increased efficiency across the value chain.

**Dr Vibha Dhawan, Director General, TERI**, highlighted that India is home to 17% of the world's population but has 2.4% of the world's cultivable land area and is thus underscoring the importance to sustain this sector through interdisciplinary focus, building and strengthening capability and skills for innovation and sustainability. In the last decade, Indian agriculture has been facing several issues such as: resurgence of new pests and diseases, declining profitability, and global warming. For the growth and development of this sector, it is crucial to motivate the youth towards this sector. This will support long-term productivity and efficiency of the sector. It is crucial to motivate and encourage the youth towards agriculture, promoting new technologies and innovative farming practices can enhance the productivity and effectiveness in this sector.

**Dr Jayahari KM, India Country Coordinator, Food and Land Use Coalition**, remarked that the human resources employed in agriculture and allied sectors in India will not be enough to cater to the transition from the present manner to a sustainable agriculture. Skill enhancement, capacity building and awareness is required to take agriculture and food system in India from the present situation to cater the needs of the future by 2030/2040. Farming is something that connects nature and humanity in a charming bond.

**Prof. Ramesh Chand, Member, National Institution for Transforming India-NITI Aayog**, said that we have moved from shortage management to surplus management at aggregate level, except in edible oil and pulses. Unlike earlier, India is no longer deficit in food production but has a surplus to the extent of 7% at aggregate level. Agricultural sector has transitioned from shortage to surplus and we now need to reimagine agriculture that is sustainable and leverages youth involvement.

**Dr Manish Anand, Senior Fellow, TERI**, in his remarks said that there is a need to develop the capacity of next generation of agriculture producers and actors by identifying ways how to engage and empower youth including both women and men. Bringing together the key stakeholders, including youth voices to engage in constructive dialogue, action, capabilities and skills for advancing innovation, diversification, commercialization sustainability and increased efficiency across the value chain would provide the desired momentum towards the critical transitions required to transform food and land use in India.

**Mr S Vijay Kumar, India Lead, Food and Land Use Coalition; Distinguished Fellow, TERI**, added that through appropriate skilling, the youth can contribute to modern-age agriculture through inter-related disciplines as well. Today, opportunities for youth in agriculture sector are not restricted to strictly farming, but go beyond to include basic & applied sciences, finance, agri economics, drone technology, AI, logistics, etc. An area of focus is reducing agricultural crop and food wastage as this in turn amounts to increase in production.

**Dr Satender Singh Arya, Chief Executive Officer, Agriculture Skill Council of India (ASCI)**, remarked that the level of formal skilling in agriculture sector has been absolutely low and less than 0.5%, though we claim to have almost 47% of the entire workforce engaged in agriculture. Agricultural skill should encompass financial and digital literacy so as to effectively engage rural youth. Rural youth aspirations can be addressed through technological orientation. Technology plays a crucial role in not just glamourizing the agriculture sector but also making them aware of the latest upgradation in the sector and its applicability.

**Dr A K Singh, Deputy Director General, (Agricultural Extension), The Indian Council of Agricultural Research (ICAR)**, emphasized that youth has to be provided all kinds of skilling and training so that they could establish their own enterprises and become entrepreneurs. We find that in the rural areas people are not much interested in farming, they leave farming even for petty jobs.

**Dr Rashmi Aggarwal, Joint Director of Education & Dean (Acting), Indian Agricultural Research Institute (IARI)**, said that youth do not want to take up agriculture as a profession and also at the same time agricultural production is itself seeing a lot of changes like the climate change and other forms of environmental degradation, which pose serious threats. Children of farmers are interested in technology, engineering or medicine but they don't want to take up agriculture as a profession.

**Mr Sharath Loganathan, Co-Founder-Ninjacart**, spoke of a lot of graduates in the agricultural universities who are aiming for bank jobs and the landowners who do farming send their sons and daughters for IT. A lot of these innovations are still stuck in the notebooks and is not reaching the market.

**Dr Sangeeta Chopra, Principal Scientist, Indian Council of Agricultural Research (ICAR), Indian Agricultural Research Institute (IARI)**, said that farmers are open to the use of technology and they have been visiting the Mela Ground – where a demo unit has been placed so as to understand it better.

## Group B

Day 1 | February 16, 2022 | 03:30 PM - 05:00 PM (IST)

Track Name	Venue	Thematic Track Partners
Strategies to Decarbonize Transport Sector - Multi-sectoral approach	Sundarbans	 THE ENERGY AND RESOURCES INSTITUTE Creating Innovative Solutions for a Sustainable Future
Driving a Just Transition to Renewable Energy in India	Kanha	
Financing Energy Transition in India	Bhadra	 Cleartech Finance
Endocrine Disrupting Chemicals (EDCs): Regulatory and Policy Implications for India	Chinnar	
Financing the Implementation of the India Cooling Action Plan	Kaziranga	
Evidence-based Action Planning to Achieve Clean Air	Hemis	
People-Centred Transition – An Indian Perspective	Sariska	

## Strategies to Decarbonize Transport Sector – Multi-Sectoral Approach

The objective of the thematic track was to discuss strategies and pathway/s to decarbonize the transport sector through a process of discussion with varied stakeholders from the government, academia and industry in order to gather ideas and suggestions. The thematic track also reflected TERI's efforts in bringing about meaningful change in the transport sector while investing its expertise in projects like the 'National Transport Decarbonization Council (NTDC)', which intended to examine high impact policy solutions and pathways that lead to transport decarbonization, particularly at the central level, and to steer the activities of capacity building and research in the sector as would be envisaged by the NTDC.

**Mr Shri Prakash, Distinguished Fellow, TERI**, said that electrification is an important aspect not only for passenger transportation but also for freight transportation. He further added that one of the major challenges in decarbonization process is to provide alternative fuel for trucks for freight transportation.

**Ms Jaya Varma Sinha, Addl. Member, Traffic, Railway Board**, highlighted that the pandemic has played a very important role in making Indian Railways adjust according to the traffic and industry demand. The role played by TERI's NTDC will be very important in bringing together stakeholders from diverse sectors and provide unbiased recommendations. He also said that the Indian Railways is targeting to achieve 100% electrification by December 2023.

**Prof. Ashish Verma, Professor, Indian Institute of Science, Bengaluru**, in his address spoke of the mitigation measures, including promotion of public transportation and non-motorized transport, should remain the main focus. He added that various studies have shown that emissions will be doubled by the year 2030 and our focus has majorly been in decreasing passenger emissions even though freight emissions are greater than the passenger emissions.

**Ms Akshima Ghate, Senior Principal, RMI India**, remarked that we need to improve public transport and focus on freight transport to make our cities cleaner. She further said, that we need to explore regulatory framework in the next 1–2-year window.

**Dr Anup Bandivadekar, Program Officer, Hewlett Foundation Environment Program**, said that we should set long-term zero-emission vehicle deployment targets. He added, what we previously believed to be a hard-to-abate sector, battery electric technology in the heavy trucking industry is fast becoming reality.

**Dr Clarence Woo, Executive Director, Asian Clean Fuels Association**, emphasized the importance to include industries' stakeholders, NGOs, scientific institutes and citizens to give mutual commitments and support to carbon neutrality agenda. Dr Woo also added that in order to reduce the use of crude oil and decrease the overall carbon footprint we will have to switch to alternative fuels like biofuels.

## Driving a Just Transition to Renewable Energy in India

The thematic track on **Driving a Just Transition to Renewable Energy in India**, highlighted how renewable energy is scaling in India and the world over, and is expected to contribute significantly to the fight against climate change. This critical moment in the development sector is witnessing several changes with respect to policy priorities, financing models, and building industries including renewable energy, directed at developing resilience against future shocks. However, the current scale of rapid expansion poses risks if potential negative impacts on the environment, social and human rights are not taken into account, which could create challenges ranging from land and labour rights, livelihood challenges to toxic waste, among others. Thus, there is an urgent need to address the potential negative social and environmental impacts, in the renewable energy sector to ensure sustainable growth by abandoning poor practices that could potentially become entrenched in the way the sector operates, and driving fair and just social transitions towards a low carbon future. The renewable energy sector is poised uniquely to set norms that enable deep positive transformation creating flourishing and resilient communities and society, and instil principles of justice and equity across the value chain. With this motivation, the Responsible Energy Initiative was launched, which is a multi-year programme working to ensure renewable energy in Asia achieves its full potential and creates value in a way

that is ecologically safe, rights-respecting, and socially just. The initiative is being run by Forum for the Future, TERI, WRI India with expert support from Landesa, Business and Human Rights Resource Centre, and WWF in India.

**Mr Mayank Aggarwal, Journalist and Contributing Editor, Mongabay**, highlighted that what is happening in the ground is that we are ending up repeating the same fossil fuel story—the story that is played out in India over the past 50 years. A conversation about how we need to understand that how we need to ensure that the clean energy transition becomes a responsible one is very crucial.

**Ms Ritu Kumar, Senior Director, TPG**, said that we need to do now is that we cannot view the ESG standards as a mitigation tool, but we need to comply with the environmental social regulations. We also need to use ESG as a tool for better performance so that it adds value to the brand. From an investor and client prospective, renewable projects can act as a beacon of light and can be a differentiator for other infrastructure as well.

**Mr Swaroop Banerjee, Vice President - Sustainability, JSW Energy**, emphasized that this decade is a pivotal time in the history, and it is a time when many possibilities are open for us, but the window of opportunities is narrowing down. A change happening from the developers perspective is that the developers are creating sustainability visions that are guiding their social, ethical, and environmental responsibilities.

**Mr Abhejit Agarwal, Deputy Vice President - Sustainability and CSR, Axis Bank**, in his address said that if there is one fundamental aspect of risk that is very much prevalent, not only in India but also globally is that how we look at the renewable energy sector. There is an opportunity for renewable energy sector to be made more inclusive and equitable. There is an opportunity for India to have minimum performance benchmarks not only for renewable energy sector but perhaps for every other sector.

**Mr Dinni Lingaraj, Group Manager - Sustainability, Wipro**, remarked that while we are transitioning from fossil fuels to renewable energy, we also need to consider the impact on the communities from where we are transitioning. There is a lot of vulnerability in the social side of the renewable energy sector. We need to handle the transition of the shift from fossil fuels to renewables very carefully, otherwise we would see disruptions in the community where these projects are happening.

## Financing Energy Transition in India

This thematic track discussed the new and potential areas of private sector financing in a transition to clean and greener India. With India committing carbon neutrality for 2070, there has been a surgency of immense opportunities for financial investment in this clean energy, be it equity investments or direct investments in renewable energy production. With special emphasis on investments and potential investments in renewable energy, the private sector in unison highlighted the private sector's interest in investment in the respective sector. It was also brought to the light that government support is needed (in policy) in easing this entry of the private sector to the renewable energy sector. As a policy suggestion, the deliberation's output reflected the fact that the private sector is willing to invest in the whole value chain of electricity production but that requires revamping up the whole values chain and making it efficient for the private sector to invest in.

**Mr Pankaj Sindwani, Chief Business Officer, Tata Cleantech Capital** remarked that battle against climate change will be won by countries like China and India. Investors will invest with the perspective of generating returns and India has huge scope.

**Mr Sujoy Bose, Managing Director & CEO, National Investment and Infrastructure Fund**, said that 25% of India's installed capacity is in renewables but the target is to achieve 450 GW by 2030; we have a long way to go. India's own green fund is a revolutionary step in this direction.

**Mr Girishkumar Kadam, Senior Vice President and CoGroup Head, ICRA Ratings** highlighted that India needs annual addition of 90–100 GW in conventional renewable resources itself to realize targets. India power tariffs are not cost reflective.

**Ms Cecilia Tam, Team Leader Clean Energy Finance, Organisation for Economic Cooperation and Development (OECD)** in her remarks said that India can reach its net-zero targets by 2070, which is evident in several recent progress made. SMEs need a full package: demand for energy efficiency, policy support, sort out issues of supply chain, self-motivation, and tangible benefits towards transition.

**Ms Namita Vikas, Managing Director, Auctus ESG**, added that ESG is the greatest opportunity for plugging finance gaps. Sustainability concerns were not investor's priority till a few years back but now it's changing.

## Endocrine Disrupting Chemicals (EDCs): Regulatory and Policy Implications for India

This thematic track titled 'Endocrine Disrupting Chemicals (EDCs): Regulatory and Policy Implications for India' was organized at an opportune policy juncture at the World Sustainable Development Summit 2022. A study titled 'Endocrine Disruptors in Indian Food: minimizing children exposure and fostering a safer space for agriculture and food market (EDIFY)' has been conducted by the Norwegian Institute for Water Research (NIVA), TERI, Mu Gamma Consultants Pvt Ltd (MGC), SRM Institute of Science & Technology (SRMIST), Toxics Link, and Bharat Learn. The objective of the EDIFY project was to conduct a comprehensive assessment of the exposure of the Indian population to EDCs, identify risk reduction and management options to reduce exposure to EDCs, and strengthen the knowledge-base for development of policies for sustainable action. This thematic track aimed to share the findings of the research study under the above project and discuss the future directions and opportunities for further collaborative research and policy relevance.

**Ms Roli Singh, Additional Secretary, MoH&FW**, in her address said that there is need for development of a collaborative platform between different ministries to monitor and regulate chemical substances in agriculture, fisheries, dairy, food processing, and pharmaceuticals, etc., to ascertain harmonized protocols and solutions to minimize exposure to EDCs.

**Dr S K Sarkar, Senior Director & Distinguished Fellow, TERI**, spoke of holistic planning and management of EDCs by integrating the key aspects of environmental sustainability and also emphasized that the targets of Sustainable Development Goals are crucial.

**Mr Satish Sinha, Associate Director, Toxics Link, New Delhi**, said that India Endocrine Disrupting Chemicals are linked to reproductive health, passing from one generation to another.

**Dr Paromita Chakraborty, Associate Professor, SRMIST**, highlighted that plastic has entered our food chain. PAEs and BPA in all the food types were significantly higher in Delhi.

**Dr Brij Mohan Sharma, Research Scientist, RECETOX, Czech Republic**, commenced his presentation by stating, "Today, we live in a world where safe food is a privilege." According to the World Health Organization, one out of every ten individuals has been impacted by consuming contaminated food. Every year, 600 million instances of foodborne infections are reported, resulting in roughly 420,000 deaths, with 30% of the deaths occurring in children under the age of five. The more serious concern is the vast disparity in food safety between developed and developing countries. The annual economic loss and medical costs from unsafe food consumption is estimated to be around \$110 billion. The factors that lead to unsafe food in developing countries include the use of unsafe water for cleaning and processing of the food, inappropriate use of chemicals in agricultural production, inadequate and poorly enforced food safety and environmental regulations. There have been several cases of chemical contamination in food around the globe. Popular cases include Minamata, mercury poisoning, in which people consumed mercury-containing fish from the Minamata Bay in 1960. Another example is Delhi, where cooking mustard oil was found chemically contaminated in 1998.

## Financing the Implementation of the India Cooling Action Plan

Sustainable cooling presents a multi-sectoral opportunity to address the developmental and climate challenges India faces. Rising temperatures and population growth are contributing to a steep increase in cooling demand, and India will require massive cooling infrastructure to fill the significant cooling access gap. Bridging this gap is essential for avoiding impacts on human health, productivity and job loss. It is also essential for reducing the immense food and pharmaceutical loss, which will drastically impact vulnerable and poor communities. Given this backdrop, India became the first country to launch a comprehensive India Cooling Action Plan (ICAP) in 2019, with the goal of providing “sustainable cooling and thermal comfort for all while securing environmental and socio-economic benefits for the society.”

With this background, the World Bank organized a final stakeholder consultation at TERI’s flagship WSDS and under the SHEETAL - Alliance for Sustainable Habitat, Energy Efficiency and Thermal Comfort for All” initiative to engage experts from multilaterals, government, research institutes and civil societies to dive deep into the identified areas of ICAP for understanding the key financing and investment opportunities and the enabling policy environment to move towards thermal comfort for all.

**Mr RRashmi, Former Special Secretary, MoEFCC and Distinguished Fellow, TERI**, highlighted that cooling is an important sector for our future actions as well as energy-saving, energy efficiency, and comprehensive movement towards net zero.

**Mr John Roome, Regional Director, The World Bank**, in his remarks said that climate change will lead to a significant increase in heat stress in India. Many climate models have projected the change in temperature in India relative to the 1960s would be as high as 5 degrees Celsius.

**Mr Jigmet Takpa, Joint Secretary, MoEFCC**, spoke of the diversity of cooling needs from those of urban to undeveloped population, large buildings to urban slums to rural huts, the human comfort, cold chains for food and vaccines, each of this required with different financial models.

**Ms Lily Riahi, Coordinator, Cool Coalition, United Nations Environment Programme**, said that in recent years, the amount of residential air conditioning electricity demand on the grid has outpaced the amount of new solar capacity being added to the grid.

**Mr Arijit Sengupta** informed the panel about the steps taken by BEE in the cooling sector. He mentioned the standards and labelling that BEE launched to reduce the electricity consumption load from ACs and refrigerators.

## Evidence-based Action Planning to Achieve Clean Air

The thematic track deliberated on evidence-based action planning to achieve clean air. The objectives of this event were to discuss key low-hanging interventions for immediate and medium-term air quality gains, learning which can be used to effectively manage the air quality in similar Indian cities, major challenges faced by the regulatory agencies and the learnings from the experiences of other countries and cities in tackling the problem of air quality. Along with objective discussions, studies were shared and reports were launched during the event.

**Mr Shanth Avverahalli Thimmaiah, Chairman, Karnataka State Pollution Control Board**, spoke about “Walk Street”—a unique initiative by KSPCB to reduce air pollution in Bangalore city.

**Dr Prashant Gargava, Member Secretary, Central Pollution Control Board**, said that collaboration of stakeholders, government regulatory bodies and institutions will lead to achieve NCAP objective.

**Dr Anju Goel, Fellow, TERI**, remarked that implementation of 20 sectoral interventions can reduce air pollution in Surat city.

**Dr Ajay Nagpure, Program Head - Air Quality, WRI**, said that scientific evidence study and micro-level interventions will help to understand air pollution problem.

**Dr Pratima Singh, Research Scientist, Air pollution-Lead, CSTEP**, highlighted that Bangalore city has transformed from garden city to concrete jungle.

**Dr R J Pandya, Advisor, Surat Municipal Corporation**, highlighted that raising social awareness will help to reduce emission from waste burning.

**Dr Ashok Ghosh, Chairman, Bihar Pollution Control Board**, in his remarks said that social participation is the key factor to mitigate air pollution.

**Dr K S Jayachandran, Member Secretary, Delhi Pollution Control Committee**, spoke of 191 charging stations that have been installed in Delhi to strengthen the fleet modernization into EV.

**Mr Polash Mukerjee, Lead, Air Quality and Climate Resilience, NRDC**, added that evidence-based action plan should be implemented through public engagement and stakeholder involvement.

## People-centred Transition: An Indian Perspective

This thematic track deliberated upon the opportunity that the principle of 'People-centred Transition' presents, and how India can bring together innovation, deployment of clean technologies and investment in green infrastructure, skills training, redeployment, labour market policies and community development and renewal. The discussion in particular focussed on the four key pillars of transition including: (i) Social dialogue, (ii) The role of government agencies (including the role for the welfare state), (iii) Upskilling , (iv) Regional investment strategy.

**Dr Brian Motherway, Head, Energy Efficiency, IEA**, said that people are at the heart of just transition, and thus must be part of its development in order to achieve an equitable transition. We need to empower the principle of energy democracy and align all our policies in line with that concept.

**Ms Ghislaine Kieffer, Policy Analyst, IEA**, highlighted that over 30 million people working in the fossil fuel industry globally will need to be skilled as we move towards the phenomenon of Just Transition. Thus, we need to put requisite policies in place for their development and sustenance. Subsidies for coal can be redirected to enhance skills training and entrepreneurship development.

**Ms Anupam Nidhi, Head Corporate Social Responsibility, Hindustan Zinc Limited**, emphasized that we need to reskill both teachers and students alike to enable the development of a sustainable capacity building framework. Culmination of skills training in line with national missions such as Make in India and Digital India can help in the commercialization of the job sector.

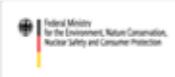
**Ms Jesse Burton, Senior Associate, E3G South Africa**, said that we hope the South African Just Transition story can help inspire the world in its quest to achieve this phenomenon. The South African Just Transition framework strictly adheres to the notion of procedural, distributive, and restorative forms of justice.

**Mr Gulab Chandra Prajapati, Damodar Bachao Abhiyan**, felt that they were focusing on creating new job opportunities from forests and agriculture to mitigate the losses from climate change, aiding in the creation of new livelihood opportunities.

**Prof. Pradip Swarnakar, Associate Professor, Indian Institute of Technology, Kanpur**, said the developing nations need to start diverting their research capabilities towards trying to understand the intricacies of Just Transition and its impact on the local community. We need to replicate Just Transition frameworks from across the world and mould them with respect to the socio-economic narrative of our nation.

## Group C

Day 2 | February 17, 2022 | 10:00 AM - 11:30 AM (IST)

Track Name	Venue	Thematic Track Partners
Enablers for SAPCC Revision and Implementation	Sundarbans	  
Towards Industrial Decarbonization in India: Key Enablers and Opportunities	Kanha	
Plastics and Circular Economy: Making EPR Workable	Bhadra	   
CEO Roundtable: Holistic Sustainability as an Industry Growth Agenda to Shape India's Climate Ambition	Chinnar	 
Futurists for the Future: A Younger, Greener Collective	Kaziranga	 
Electrification of Heavy-Duty Vehicles – An Emergent Economic Opportunity	Hemis	 
Emerging Opportunities towards Sustainable Packaging Solutions	Sariska	

## Enablers for State Action Plan on Climate Change (SAPCC) Revision and Implementation

Indian states are currently underway to revising and updating their respective State Action Plans on Climate Change (SAPCC). There is an urgent need for coherence between climate change strategies at the national, sub-national, city and district level. SAPCCs are the guiding document for implementing climate change actions in the state's planning and actions. SAPCCs are being revised and strengthened under the guidance of national and international discourse in climate change action. Mainstreaming climate change is the need of the hour for sustainable actions and development.

As most of the states in India are preparing their revised SAPCCs, this thematic track intended to have a discussion around the experiences of the states in drafting these. The session also enables a dialogue on the kinds of facilitative, regulatory, and institutional frameworks along with financing mechanisms that are required to implement the revised SAPCCs in India.

**Mr Abhishek Kaushik, Fellow and Area Convenor, TERI**, in his remarks said that all states and union territories are revising their SAPCCs as climate change becomes increasingly central to development and policy interventions are needed to strengthen resilience at various levels. SAPCCs are the guiding document for planning climate change action.

**Mr Edwin Koekkoek, First Counsellor on Energy and Climate Action, European Union Delegation to India**, said that the key priorities for European Union (EU) and India are its partnership and commitments to combat climate change and look into matters of renewable energy, energy efficiency, offshore wind and solar, smart grids, climate finance and climate mitigation and adaptation.

**Mr Ashish Tiwari, Secretary, Environment, Forest and Climate Change Department, Government of Uttar Pradesh**, spoke of UP's SAPCCs being based upon the real challenges that the state faces due to climate change and are based on some key areas of action based on best practices— district-level action plans, climate financing, and capacity building. The UP SAPCC is a guiding document supported by district-level plans.

**Mr Kirtiman Awasthi, Adaptation Thematic Lead, CAFRI project, GIZ-India**, emphasized that SAPCCs are not just domestic primary vehicle for climate action but also in the UNFCCC. They form not just a vertical connection with NDCs but also a horizontal connection with SDGs. Localizing SAPCC actions will lead to more contextual implementation or required interventions enabling sustainable long-term impact.

**Dr Suresh Kumar Attri, Principal Scientific Officer, Government of Himachal Pradesh**, added that Himachal Pradesh is primarily focusing on the linkages between the priorities of the government of India at the international level with the NDCs and the SDGs.

**Mr Helmut Hojesky, Head of Department, General Climate Policy, Austrian Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology**, said that it is important that SAPCCs equally focus on adaptation as well as mitigation, which form the two pillars of climate action. Availability is a critical limitation that needs to be addressed when creating plans and guiding documents.

**Dr Shwetal Shah, Advisor, Department of Climate Change, Government of Gujarat**, highlighted that with increase in the frequency and intensity of coastal disasters, the focus for Gujarat is now to have very detailed planning at the grassroots level—early warning and community mobilizing are two important strategies for combating this. Climate action in Gujarat needs to focus on both adaptation as well as mitigation which keeps disaster management a high priority.

**Mr Magnus Cederlöf, Senior Advisor, Ministry of Environment**, Finland remarked that cross-cutting legislation is important for addressing the increasing adverse effects of climate change in the EU and meeting targets is their main priority. A bottom-up approach has been used to identify the required policy measures in the EU.

**Mr KS Jayachandran, Special Secretary, Environment, Government of Delhi**, underlined that Delhi has identified 6 major sectors vulnerable to the impacts of climate change and the SAPCC based on which the Government is revising its SAPCC. The SAPCC aims to align itself with the national and sub-national adaptation and mitigation planning.

**Ms Smitha R, IAS, Secretary to Government, UT of Puducherry**, pointed out that the key challenges that the UT will focus on are that of lack of historical data, mobilization of climate finance and resource capacity. Groundwater restoration is a primary focus for the Puducherry Government as saltwater intrusion has been increasing due to the effects of climate change.

**Dr Antje C Berger, Counsellor, Climate and Environment, Embassy of the Federal Republic of Germany** said that increased ambition for meeting climate targets forms the central focus of climate action in order to address the global urgency. Both adaptation and mitigation needs to be given equal attention by the global community and international authorities.

## Towards Industrial Decarbonization in India: Key Enablers and Opportunities

Focusing on the critical importance of trajectory of low emission development pathway towards net zero, the session titled, 'Towards Industrial Decarbonization in India: Key Enablers and Opportunities', started with the necessity of introducing actions early in the area of industrial decarbonization to sustain the momentum towards net zero to compress the emissions within the time frame. As the economy is at an inflection point, the role of private sector in industry is crucial. There is a need of creating mechanism for private–public partnership coordination in the sector. From the perspective of mitigation, the relation between private and public becomes extremely important for partial risk sharing ability. This reduces the interest rates in terms of industrial technological shifts and secondly, it increases the term of borrowing for private players.

**Mr Thomas Kerr, Lead Climate Specialist, South Asia, The World Bank Group**, said that we really need to work on how to decouple the emissions from growth. For decarbonization, India needs to start shaping and building an ecosystem for this transition.

**Mr R Mukundan, Managing Director and CEO, Tata Chemicals Limited**, highlighted that in many of the cases, decarbonization processes is deeply linked to circular economy. Climate is one part of the three pillars, which are decarbonization, circularity, and biodiversity.

**Mr Shrinath Savor, Chief Sustainability Officer, Shree Cement Limited**, pointed out the efforts of big industries as they move forward is spreading out into the small and medium enterprises that are going to make big impacts. Much of the effort going on is in the area of climate mitigation; thought has to be given to climate adaptation as well.

**Mr Vineet Mittal, Chairman, Avaada Group** said that the green hydrogen and green ammonia probably will become the most competitive source of greening the industry like what solar and wind are doing today. There is a lot of cost misconception around green hydrogen and green ammonia.

**Prof. P K Sen, Former Professor & Consultant, IIT Kharagpur**, spoke of steel decarbonization, in 20 to 30 years' timeline for phasing out coal is worth considering including China and India. He also added that the problem about steel sector is that it is carbon intensive in terms of energy use.

**Mr Sandeep Tandon, National Project Manager, UNIDO Project – Facility for Low Carbon Technology Deployment**, said that for innovation, start looking beyond compliances and go overboard and set up your goal for 2025–2030. It is important to work collaboratively to arrive at decarbonization targets and goals.

## Plastics and Circular Economy: Making Extended Producer Responsibility (EPR) Workable

The track focused on how the existing Extended Producer Responsibility (EPR) regulations are not enough to deal with the exhaustive waste collection of plastics across the nation. Integration of the informal waste collectors into the formal system, focusing on upstream waste management practices, and bringing community actors into the process were some of the key aspects that the discussion revolved around. The track highlighted the gaps between the literature and the data available for the plastic production, recycling and waste management. In the entire waste management process, there is little to no stress on how to reduce consumption. More educational training sessions must be undertaken to spread awareness about needless consumption practices. Plastic credits are an excellent mechanism to improve financing prowess within the waste management segment and make way for wide scale research to take place for its augmentation.

**Mr Hans-Peter Egler, Director, Sustainable Infrastructure and Public Affairs, South Pole**, said that while the current EPR practices lack mechanism, the private sector and plastic credits can help streamline the financing process and improve waste management strategies.

**Mr Rajesh Pahwa, Founder & CEO 21st Century Polymers**, added that while technology plays a big role in plastic recycling, a recycling unit in the same state is a must to make a project sustainable. A workable pricing system should be the focus of products created from recycled plastic in order to improve their demand.

**Mr Ranjit Singh, Founder – AspireLabs**, said that to embrace a circular economy for plastics we need to radically look at a separate policy to deal with bulk generators. The reduce, reuse and recycle policy lays extremely less stress on the reduced consumption of products. This needs to change dramatically.

**Dr Shilpi Kapur, Vice President, Environmental Management Centre**, highlighted that EPR is largely seen as a downstream policy and the upstream policy narrative is significantly missing. India has a USD 500 billion potential to economize value through circular economy.

**Dr Lakshmi Raghupathy, Former Director MoEF&CC, Adviser, Foundation for Innovative Packaging and Sustainability**, pointed out that a single EPR framework is not a conducive solution. Since plastic is now part of all products across the value chain, we need to look at involving stakeholders from diverse industrial backgrounds. The notion of circularity has to be developed in tandem with the community, since they are the ones who will be determining how it will be used eventually.

**Ms Ekta Narain, Co-founder, Recykal**, in her remarks said that we need to look at waste generators as the catalyst for streamlining the entire waste management process.

## CEO Roundtable: Holistic Sustainability as an Industry Growth Agenda to Shape India's Climate Ambition

This track on “holistic sustainability as an industry growth agenda to shape India's climate ambition” at WSDS 2022 discussed the role of industry transition in achieving the goals of the Paris Agreement with a focus on initiatives that CEOs from various organizations across industries are planning or are already implementing now.

**Mr Girish Sethi, Senior Director – Energy, TERI**, in his address said that India needs to develop a detailed roadmap to electrify at a large scale to think about decarbonization. It is of utmost importance to understand that, not only the hard-to-abate sectors should be targeted to decarbonize; micro, small and medium enterprises need to be given equal attention as well.

**Mr Paul Marriot, President, SAP Asia Pacific Japan**, in his remarks said that in order to achieve global sustainability, it is of utmost importance to achieve sustainability in the Asia continent first. The digital transformation will be the key piece of the puzzle for global climate action and sustainability.

**Mr Manjeev Singh Puri, Distinguished Fellow, TERI**, pointed out that the roadmap to achieve net-zero targets will not be easy and it is of certainty that the task will be even more challenging if the industries do not take a prominent leadership. The leadership to mainstream digitalization is something which is lacking at present, which needs to be the mantra for all big industries for effective climate action.

**Mr Mahendra Singhi, Managing Director and CEO, Dalmia Cement (Bharat) Ltd**, said that industries should follow the mantra in their operations which is—green and clean is profitable and desirable. Industries will suffer significantly as we landed in the era of climate crisis if critical action through industrial decarbonization is not taken.

**Mr Nitin Prasad, Chairman, Shell Companies in India**, added that India should focus on reducing the production load factors for renewable energy like solar in order to mainstream renewable into Indian industries. Industries should focus on Scope 3 which means utilization of the energy at the industrial level, which will be the roadway for more profit in business.

**Ms Sindhu Gangadharan, Managing Director, SAP India Labs**, emphasized that sustainability should be a top priority in the years to come for industries to thrive. CEOs in India are making sustainability a strategic priority.

**Mr Rajiv Ranjan Mishra, Managing Director, Apraava Energy Pvt. Ltd**, said that India should focus on converting personal transportation to electric vehicles (EVs) at an urgent basis. There has been substantive progress in India mainly policy shifts in the area of renewable energy, which made its value cheaper than the conventional sources.

**Mr S Sunil Kumar, Country President India & Regional Director Packaging IMEA, Henkel Adhesives Technologies India Pvt. Ltd**, highlighted that the key to achieve decarbonization and net zero targets is to focus on Industry 4.0. It is crucial to measure ways of decarbonization to keep track of quantifying achievements, which will enhance the overall transparency of the change.

**Dr Lovneesh Chanana, Vice President (Government Relations), SAP** said that since Asia's emission percentage are largest in the globe, much take is our hand to holistically decarbonize the industries through collaborating with the government and other industries. There is a need for collaboration of stakeholders to enhance co-innovation for industrial decarbonization in India.

## Futurists for the Future: A Younger, Greener Collective

At this session, we heard the present young generation share their action being taken towards environment protection or conservation. Where on one hand during the WSDS the adults and global thinkers try to develop a pathway towards a resilient planet, here we will be surrounded by young crusaders of change who have already embarked on that path. This theme also catered to discussions on the importance of education in channelling young adolescents' energy towards a greener future. This track was a platform for the students and teachers from remote locations of Jharkhand and Odisha to showcase their efforts towards protecting the environment build collaborations with stakeholders from different states and subject areas while empowering them with the knowledge and skills needed to facilitate a greener future. The session was also an amalgamation of knowledge, experience and action-based work witnessed by various other players in the field of education, environment, and sustainable development to witness these changemakers and take the narrative further in their own contexts.

**Mr Sourav Roy, Chief Corporate Social Responsibility, Tata Steel Limited**, said that the Green School Project of Jharkhand, Odisha aims to create change agents and a culture of climate consciousness and environmentalism. The project is working in parts of the country that are very intensive in demographic terms with indigenous communities.

**Mr Naman Gupta, Founder, Code Effort Private Limited**, said that Code Effort Private Limited recycles cigarette butts that are sourced from collection agents, factories, and pickup services into recycled paper

and plastic products. The closed-loop carbon-neutral recycling process ensures 100% utilization of material, reduces pollution, and decreases GHG emissions.

**Ms Sejal Kumari, Student, St Mary's School, Noamundi, Jharkhand**, pointed out that if you will take one step towards cleanliness, then see the world will follow you.

**Ms Madhuri Bahadur, Community Resource Person (CRP), Kalinganagar, Jajpur, Odisha**, said that Dubikhal village is low in all development indices with poor access to water. Knowing this, Ms Bahadur and some other women were successful in cleaning the channel spring to rejuvenate the flow of water. However, there are more than 100 springs in her nearby village and she wants to rejuvenate all of them for easy access of water and to increase the irrigation of land.

**Ms Saina Mohanty, Student, St Mary's School, Jajpur, Odisha**, highlighted that all water will exhaust one day on earth and that day the human civilization will come to an end, so we should try and conserve it. The small steps towards saving water can someday turn into a big achievement.

**Mr Kalicharan Basumatary, Advisor, Manas Maozigendri Ecotourism Society, Assam**, highlighted that future generation's livelihood is dependent on the wildlife environment. Hence, we have to save our forests, wildlife from human activities, which is only possible by inspiring local stakeholders.

**Ms Dimple, Student, Tata DAV Public School, WBC, Ghatotand, Jharkhand**, remarked that what you have today, you have to hand it to the next generation to whom you are answerable. Nature has everything for your need, not for your greed.

**Ms Smita Agarwal, Head, Education, Corporate Social Responsibility, Tata Steel Limited**, highlighted that Lockdown Learning in Rural Areas of India reached 135,000 children in 4510 villages through 3250 teachers and trained volunteers. The participation reached 95% and rich learning outcomes were quite visible.

**Mr Chanakya Chaudhary, Director, TATA Steel Foundation**, spoke of spreading the awareness around the climate change and adopting the concept of 'Living with the nature'. He said that they have been able to reach out to 200,000+ people comprising 20,000+ students, 400+ teachers, 13,000+ parents through the Green School Project.

**Dr Vibha Dhawan, Director General, The Energy and Resources Institute**, said that she is glad that this journey has enabled the youth to voice their views collectively, exchange ideas, and form a common network, reaching out to like-minded people and engaging them in environmental stewardship.

**Mr Pankaj Kumar Satija, Managing Director, Tata Steel Mines**, added that modern education system has become very competitive; however, the world needs a society of collaborators and contributors who can work on the impending issues of biodiversity. We can compete but the competition should be with ourselves, to become better for tomorrow.

## Electrification of Heavy-Duty Vehicles – An Emergent Economic Opportunity

This session aimed to share recent analyses, developments, challenges and opportunities of electrification of heavy-duty vehicles (HDVs) from a range of stakeholders and recommend areas for collaboration and coordination as well for the philanthropic community to support.

**Mr IV Rao, Visiting Senior Fellow, TERI**, said that the challenge faced in electrification is high energy demand to propel HDVs, therefore, it demands a big battery assembly with high energy capacity. Life span of batteries is lower than HDV, which will create a high demand for batteries.

**Mr Sudhendu J Sinha, Adviser, Transport Infrastructure and EVs, NITI Aayog**, emphasized that NITI Aayog completely supports transition of fossil fuel-based HDVs to cleaner fuel-based system. Going forward, he said we need more evidence related to performance of e-HDVs for scalable adoption in India.

**Mr Siddharthan Balasubramania, Senior Adviser and Principal Strategist – Climate Works Foundation,** highlighted that there is a big opportunity for India to become manufacturing and export hub in e-HDV segment. India has a vibrant EV ecosystem with institutional structure, policies and growing infrastructure. Policy initiative can create clean market.

**Ms Divya Sharma, Executive Director, Climate Group,** in her address said that transport sector is the fastest growing contribution to climate change and largest source in the countries such as the US, the UK, and India. Accelerated EV uptake is essential to keep the world on 1.5°C pathway. There is a specific critical need for increased ambition and faster transition towards clean fuel technologies by the medium and heavy fleet operators.

**Dr Cristiano Façanha, Director, Drive to Zero, CALSTART,** stressed on having an ecosystem approach with clear and ambitious targets supported by stronger regulations, initiatives, and incentives. We need to recognize the applications where zero emission technology is most feasible now and focus immediate policies and investment on those applications and develop strategy to scaling this technology.

**Mr Ruchir Shukla, Director, Electric Mobility Program, Shakti Sustainable Energy Foundation,** said that there is a need to roll out a clean fuel initiative bringing together all the key stakeholders with a targeted approach to bring down emissions from the HDV sector. Transport sector is playing a critical role in India achieving net zero emission or decarbonization target.

**Dr Anup Bandivadekar, Program Officer, Hewlett Foundation Environment Program,** explained that HDV is no longer a hard-to-abate sector. The costs are already working in favour of e-HDVs in the high-load segment. It is time to include e-HDVs and charging infrastructure in national schemes like FAME. With electric trucks the driving comfort encourages usage and with no tailpipe emissions, it reduces occupational health and safety concerns for workers.

**Mr Clay Stranger, Managing Director, RMI India,** expressed that the transition to cleaner fuel does not require a choice-based model rather it could incorporate the hydrogen fuel and battery-based system, and left to market demand supply to lead the decarbonization pathway.

**Mr Vinit Srivastava, COO, InfraPrime Logistics,** added that we need financial supports from institutions, banks, etc., for heavy duty electric vehicles, which will help the trucking industry and fleet operators to purchase e-HDVs. HDV should be covered under the FAME-II scheme to address the challenges.

## Emerging Opportunities towards Sustainable Packaging Solutions

This session deliberated upon an all-inclusive technical and policy-based solution from different stakeholders on the need and emerging opportunities (consumer and producer's perspective) towards sustainable packaging. Deliberating on modern day consumer's perspective to the need of producer for a conducive production environment to providing policy suggestions to the government, this discussion will help to redevelop and redefine the way packaging is done traditionally, especially in India wherein it will be seen under the 'green development' lens.

**Dr Anupam Agnihotri, Director, JNARDDC, the Ministry of Mines, Government of India,** highlighted that when one talks about sustainable development in the packaging industry, one cannot ignore aluminium as it is the infinitely renewable metal. Aluminium has passed the test on all parameters in terms of existing packaging options. Depletion rate of resources must not exceed its recycling rate.

**Mr Amit Lahoti, Senior Director and General Manager-Asia, Ball Beverage Packaging,** said that environment is filled with mystery and opportunity. Plastic packaging pollution has reached crisis levels. Ball Corporation is not just a supplier but a sustainability partner.

**Mr Mitesh Pandya, AVP-Sustainability and CSR, Vedanta Limited-Aluminum Business,** expressed that importance has to be given not just to recycling but to closed-loop recycling. Aluminium is the metal of the future.

**Mr Ankur Chawla, Director, Fabonest Food & Beverages Pvt Ltd.,** added that hotels and corporates want to shift away from plastics and are looking for alternatives. We still have a long way to go in terms of education and action. Laws regulating single use plastic (SUP) can affect transition into aluminium cans.

**Mr Rajiv Sangoi, Co-founder, Rio Beverages,** said that massive growth of aluminium cans is seen in the last decade. Aluminium is also the way forward for start-up companies.

**Ms Kreena Patel, Associate Director, AB InBev,** spoke of the importance of moving to sustainable development; it is no more a choice. We need a lot of partnerships across the value chain so that ultimately simplistic information can be provided to the consumers.

## Group D

Day 3 | February 18, 2022 | 02:45 PM - 04:15 PM (IST)

Track Name	Venue	Thematic Track Partners
Global Agenda for Industry Transitions – Relevance, Challenges and Opportunities for India	Sundarbans	
Climate Resilience through Solar Irrigation	Kanha	
Reducing Plastic and Chemical Pollution to the Marine Environment	Bhadra	
Data-driven Governance for Urban Resilience in Smart Cities	Chinnar	
Fostering Energy Transitions in India	Sariska	
Improving Air Quality in Cities- Global issues, local solutions and best practices	Kaziranga	
The Role of Nature in the “Decade of Action” of the 2030 Agenda on Sustainable Development	Hemis	

## Global Agenda for Industry Transitions – Relevance, Challenges and Opportunities for India

The Thematic track Global Agenda for Industry Transitions – Relevance, Challenges and Opportunities for India focused on the role of multi-stakeholder initiatives such as Leadership Group for Industry Transition (LeadIT) and Strategic Partnership for the Implementation of the Paris Agreement (SPIPA), in driving global industry transitions. The speakers explored the challenges and opportunities these platforms present within the Indian context, and aspects for enabling and accelerating industry transitions in India.

**Mr Edwin Koekkoek, First Counsellor, Energy and Climate Action, EU Delegation to India**, expressed that industry transition is an important element of clean energy transition and of the green transition.

**Ms Johanna Lissinger Peitz, Ambassador for Stockholm+50, Swedish Ministry of Environment**, added that Stockholm +50 event will push collective transformation and will be an opportunity to connect various stakeholders. There is a need to act with a greater sense of urgency. Businesses, including the finance sector, have a key role to play in realizing sustainable transformations and green and inclusive recovery.

**Ms Rajasree Ray, Economic Adviser, the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India**, highlighted that India has been pursuing a low-carbon transition while striking the balance between the objectives of ecology and economic development and sustainability. India has ambitious targets across various areas such as energy efficiency, renewable energy, forest and biodiversity conservation, and hydrogen. Many meaningful partnerships with all stakeholders are needed to realize the goals of low carbon transition.

**Dr Ashok Kumar, Deputy Director General, Bureau of Energy Efficiency**, said that transition to low-carbon industry is imperative and efforts in this direction are ongoing in India. We solicit co-operation and partnerships with global stakeholders, so that Indian industry can play a bigger role in achieving global climate goals.

**Mr Dan Dorner, Head of Clean Energy Ministerial Secretariat**, mentioned that international collaboration is critical to achieve clean energy and climate goals faster, cheaper and more effectively for all. India's international relationships and clean energy transition is important, and is extremely valued by the global community.

**Dr Antje Berger, Counsellor, Climate and Environment, Embassy of Federal Republic of Germany**, expressed that India, EU and Germany, believe in the power of renewable energy and other sustainable technologies including green hydrogen. Together with the EU, Germany is proud to partner with India to help the country achieve its climate goals.

**Mr Mahendra Singhi, Managing Director and CEO, Dalmia Cement (Bharat) Ltd.**, remarked that LeadIT is playing a very important role in motivating industry to take action on decarbonization. Collaboration and partnerships between all stakeholders are needed across governments and industry.

**Mr Prabodha Acharya, Chief Sustainability Officer, JSW Group**, underlined that he is optimistic that the Indian steel industry will be able to decarbonize faster. JSW has set a target of reducing emissions by 42% by 2030. Steel is an important material for supporting decarbonization in other sectors and to build climate resilient societies.

**Mr Anirban Ghosh, Chief Sustainability Officer, Mahindra Group**, in his address said that there are several good examples on sustainability in India and globally. Bigger steps on decarbonization need to be taken and collaborations will be the way forward. Battery energy storage technology could address the challenges for scaling-up other technologies such as renewable energy, electric mobility, and clean hydrogen.

**Ambassador Manjeev Singh Puri, Distinguished Fellow, TERI**, emphasized that India and Europe must collaborate. There is a great deal of similarity in the way we do business. This collaboration will lead to faster results and the world will benefit.

## Climate Resilience through Solar Irrigation

The research consortium is hosting a thematic track, 'Climate Resilience through Solar Irrigation', at the World Sustainable Development Summit (WSDS), to present the guidebook findings and provide a platform for experts from South Asia and East Africa to deliberate and discuss ways in which climate resilience in the agriculture sector can be advanced through solar irrigation, with a focus on preventing groundwater depletion in water-stressed regions and supporting marginalized farmers.

**Mr Nilanjan Ghose, Senior Advisor, GIZ India** said that the pathways should always be socially equitable and environmentally sustainable. Small and marginal farmers are often left out, due to inequality in terms of access to resources.

**Dr Priya Jadhav, Professor, Indian Institute of Technology Bombay (IITB)**, in her address said that we want to look at how can we optimize and ensure the role of solar PV pumps in helping the farmer community to become more resilient, in the face of climate change. Academia should also be involved in the ongoing agricultural and solar evaluations as; these are interdisciplinary approaches towards environment and sustainability such that the spirit of engineering rests on it.

**Ms Lucie Pluschke, East Africa hub manager for Water and Energy for Food, GIZ Kenya**, pointed out that it is very clear that when we speak of climate crisis, we speak about water crisis. What we are noticing is that the decentralized off-grid solar irrigation systems can really provide services to remote and especially vulnerable communities.

**Mr J K Jethani, Director Scientist-F, the Ministry of New and Renewable Energy (MNRE), Government of India**, said that there is a case for solarization, giving clean energy to agriculture that will help in combating the concerns of climate change.

**Mr Shilp Verma, Senior Researcher, Water-Energy-Food-Policies, International Water Management Institute** highlighted that India's energy sector plays a much bigger role in driving solutions to major problems faced by India's water sector. If we can incentivize farmers to use solar energy that they will be producing on their farms judiciously, solar power itself will be remnant of crop for the farmers as by doing that, it also provides additional climate resilience.

**Dr Dipal Barua, Chairman, Bright Green Energy Foundation & President, Bangladesh Solar & Renewable Energy Association (BSREA)**, added that the positive thing is that the farmers are interested to cultivate under the solar irrigation pump and are producing different varieties of crop. Solar irrigation has a lot of positive impact, but we need to have different sizes for different parts of the country, where we also need to create a mechanism how the groundwater can be used efficiently.

## Reducing Plastic and Chemical Pollution in the Marine Environment

The thematic session provided a valuable insight into the ongoing measures taken by various governments in various countries including India to curb the marine pollution due to indiscriminate dumping of plastics. It also emphasized the need for policy frameworks to bolster the prevention of plastic and chemical pollution of marine environment, especially due to persistent organic pollutants (POPs). The research challenges, findings and gap related to the area were highlighted which emphasized the need for further research work to achieve reduction of marine pollution at scale and speed. Moreover, a way forward was provided for the implementation of Stockholm Convention in India.

**Dr Marianne Olsen, Research Director, Norwegian Institute of Water Research (NIVA)** expressed that there is a need for researchers, society and authorities to collaborate and address plastic pollution. River acts as a conveyor belt for pollution.

**Mr Erlend Draget, Senior Advisor, Department of Marine Environment & Pollution Control, Norwegian Ministry of Climate and Environment**, said that plastics waste poses a "transboundary environmental

problem” with the global value chain. While there is a lot that we still do not know, we now know enough to initiate action.

**Dr Rajeshwara Rao, IAS Special Secretary, NITI Aayog, Government of India**, added that NITI Aayog will be in the forefront to work with all stakeholders. Authorities and communities have to take a leading role to manage plastic pollution.

**Dr Rachel Hurley, Research Scientist, NIVA**, highlighted that no single method is capable of measuring total load of pollution. There is no international convention on plastic management defined.

**Dr Rachana Arora, Team Leader & Coordinator, Circular Economy Solutions Preventing Marine Litter, GIZ**, expressed that a lot of capacity building is required in terms of leakages and hotspot analysis. Circular economy solutions and a multi-pronged approach is required to manage macro and micro plastic pollution.

**Dr Merete Grung, Research Scientist, NIVA** said that environmental monitoring is important for discovering environmental hazard. Regulation and management are important for environmental and human health.

**Dr Paromita Chakraborty, Associate Professor, Department of Civil Engineering, SRM Institute of Science and Technology, SRMIST**, highlighted that we are going in a very good direction, with respect to how research findings are supporting Stockholm Convention in India. The pandemic has increased the plastic waste generation globally.

**Mr Satish Sinha, Associate Director, Toxics Link**, highlighted that plastic is perceived to be benign but there are so many chemicals of concern. In this regard, most developed nations are finding hard to cope up.

**Mr Suresh Padmanabhan, Strategy Advisor, Indorama Ventures Public Company Limited (IVL)**, said that polyethylene terephthalate (PET) bottles are preferred as a packaging material because of its low carbon footprint and low cost. Laws requiring recycling and better collection are to be framed.

## Data-driven Governance for Urban Resilience in Smart Cities

This session’s objective was to highlight the role of data-driven governance in achieving urban resilience in cities, it also aimed to provide a platform for diverse stakeholders leading the mainstreaming resilience effort in smart cities to share their experiences in integrating data-driven approaches in resilience planning as well as showcase their ongoing initiatives and results achieved so far. It further also discussed the various challenges faced and provided an opportunity to discuss innovative ways to tackle them as a potential way forward.

**Mr Sanjay Seth, Senior Director, Sustainable Habitat Programme, TERI**, said that the recent COVID-19 pandemic gave us a better outlook as to how data driven governance could bring a boom in the sphere of urban resilience. The use of technologies and innovative pedagogies changed the course of traditional measures, which were insufficient in controlling the pandemic.

**H.E. Mr Ugo Astuto, Ambassador, Delegation of the European Union to India**, highlighted that to recover from the economic slump caused by the pandemic, policies must be designed in a way that it does not compromise the low carbon transition that we need in the years to come. There is no contradiction between growth and climate action.

**H.E. Mr Freddy Svane, Ambassador, Royal Danish Embassy in India**, added that the Summit has a scope of going beyond what we are doing in the discourse of climate change by reaching out to the citizens and he further said that he sincerely believes that data-driven tools can help us strengthen this knowledge more. We need to secure and protect places and data should not create problems in that sense but should enhance the role of governance in doing so.

**Mr Hitesh Vaidya, Director, National Institute for Urban Affairs**, said that we are all dealing with day-to-day affairs of the city and data becomes a backdrop of these affairs. We need to choose between governance driven data or data-driven governance.

**Ms Kamilla Kristensen Rai, Counsellor, Delegation of the European Union to India**, added that when we speak about resilience, we also need to connect and have the same platform in our understanding of such words in the context of urban. Urban resilience can be viewed through three different lenses: human resilience; city resilience; and infrastructure resilience.

**Mr Rahul Kapoor, Director, Smart Cities Mission, MoHUA, Govt. of India**, explained that there are two trends that we have seen locally that has caught our focus; one is urbanization and the second is disasters. Smart cities mission is trying to solve the challenges of three core areas; the quality of life, economic growth of the city and sustainability. This is being done by leveraging technology along with non-technology initiatives to address these three areas.

**Prof. Dr-Ing Anke Karmann-Woessner, Head of Urban Planning Department, City of Karlsruhe, Germany**, expressed that how can a data-driven approach towards resilience drive good governance? For us it's embedding digital principles, digital ethics in the governance and project management, when including new services and solutions. In the city of Karlsruhe, smart cities are associated with a vision that aims to preserve the quality of life in the city and build resilience together with the citizens.

**Mr Ole Larsen, Director, Climate Adaptation Living Lab, Copenhagen**, said that cities are not the cause of climate change, they are actually a solution to building a more sustainable society. We want to decarbonize the world, decentralize services, and digitize governance.

**Prof. Shaleen Singhal, Dean, Research and Partnerships, TERI School of Advanced Studies**, said that data management and data analytics is something that has to drive the top-down and bottom-up governance. The database needs to be at the bottom of the pyramid, wherein at the top we are targeting solutions, policies, strategies or action plans, depending on the maturity of the database and analytics.

**Dr Vikrom Mathur, Founder, Transitions Research**, said that there is this misconception that science and data is the only driving action on resilience planning in cities, it is also the politics, norms, and accurate behaviour and incentives to act right that plays a critical role.

## Fostering Energy Transitions in India

Long-term planning prospective is necessary to intervene policy measures that would lead to a smooth energy transition as well as provide sustainable and cost effective way to reliable and affordable power. In order to meet the 500 GW target by 2030, India would need to increase its RE capacity from 10 GW to 50 GW annually. Developing a close coordination between the states and centre for resource planning, assessment and demand-supply management is also necessary. The future is uncertain in the energy sector as there is a constant development in the newer technologies, game changing innovations, changing demand, grid reliability, and power quality. The most important requirement in the energy transition is the proper formulation of the energy policies and the ability to follow through.

**Mr Alok Kumar, Secretary, Ministry of Power, Government of India**, said that India has a good track record towards tackling climate change. Emphasis on demand side management should be the starting point for energy transition

**Mr Rakesh Nath, Former Member, APTEL & Former Chairperson, Central Electricity Authority**, highlighted that Resource Adequacy Planning at the state levels should be based on a bottom-up approach. Distributed RE generation is very important in rural areas as it would help in reducing the cost of electricity supply.

**Mr Sanjay Dubey, Principal Secretary (Energy), Government of Madhya Pradesh**, expressed that the URJA or Energy literacy Programme has been able to reach out to every individual to teach them about energy

conservation without compromising on their daily activities. The Biomass production sector is unorganized and we need aggregator-based models for further growth.

**Mr S R Narasimhan, Chairman and Managing Director, POSCOA**, said that least cost approach is necessary to bring down the cost of energy. One approach could be to de-risk the RE sector by timely payments and enforcing contractual sanctity.

**Dr Winfried Damm, Head of Indo-German Energy programme, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH** added that energy transition is an ultramarathon. 2030 & beyond is going to be a very different scenario altogether for the transition sector.

**Mr Ajay Talegaonkar, Chief Engineer, Financial & Commercial Appraisal, Central Electricity Authority**, said that emphasis should be given to load forecasting and sophisticated simulation tools at state levels. Clarity is necessary on the dedicated agencies for state-level planning in order to pace forward in this sector.

**Dr A K Tripathi, Former Director General, National Institute of Solar Energy, Advisor, MNRE**, highlighted that the INR 4500 crore Production Linked Incentive (PLI) scheme of RE equipment is beneficial for localization of equipment related to RE generation. The 20% ethanol blending is going to provide a boost to the biomass industry.

**Col Vijay Bhaskar, Managing Director, Hamara Grid Pvt. Ltd.**, mentioned that grid reliability is an issue in the northeastern region of India with 5–8 hours of power interruptions in power supply. Energy transition should be planned with the target of providing affordable, reliable power supply to the farthest rural areas of India.

## Improving Air Quality in Cities – Global Issues, Local Solutions and Best Practices

The thematic track addressed air quality issues in cities around the world and shared national and international experiences and best practices for faster and more effective pollution control under the Clean Air Project (CAP) India initiative.

**Dr Vibha Dhawan, Director General, TERI**, said that air pollution has become a concerning risk in India affecting public health and the atmospheric environment. The objective of the thematic track is alignment of NCAP as its stress cheering best practice and increase cooperation with international agencies.

**Dr Jonathan Demenge, Head of Swiss Agency for Development and Cooperation**, said that sustainable development is about the health of people, which are closely linked to the food we eat, the water we drink and the air we breathe. Where you are born, where you live, where you work, and how much you can protect yourself, those make a difference.

**Mr P K Gupta (O/B) Shri Satyendra Kumar, Director, the Ministry of Environment, Forest & Climate Change, Government of India**, said that tracking of physical as well as the financial status of city action plan disseminates information on air quality management efforts under NCAP to the public. City action plans have been drawn up for implementation in 132 non-attainment cities.

**Dr Anju Goel, Fellow, TERI**, expressed that we are proud to say that collectively we have sensitized around 32 million citizens in the 4 focus cities. A single solution cannot work across the cities and so we need to customize solutions as per the local conditions.

**Ms Ying Zhang, International cooperation division Swiss embassy, Beijing**, added that in recent years the Chinese Government has implemented many policies to reduce air pollution. For example, in 2012, air pollution standard was revised; in 2015 air pollution prevention and control law was revised; and many more such steps were undertaken. China is in a phase of precise air pollution management as a nation.

**Dr Valentin Foltescu, Senior Programme and Science Officer, Climate & Clean Air Coalition**, emphasized that we have to identify the perception of socio-economic community. The project we have run in Accra for several years is now bearing fruit in developing of action plan.

**Ms Neha, Senior Fellow, TERI**, pointed out that student participation in competition based on air pollution where students can present their out-of-the-box thinking. Various awareness programmes are required to reach out to the unreached.

**Prof. Archana Kumar, Behavioural Change Expert, Associate Professor, Lady Irwin College** added that we need to understand peoples' behaviour towards what they do, can we create enabling environment that can facilitate people doing what is needed to do, policy advocacy on the side of policymakers also needs to be supported. Developing a strategy of change is not going to be a very simple thing, and that is why we need a nested theory of change.

**Mr Ashish Tiwari, Secretary, Department of Environment, Forest & Climate Change, Government of Uttar Pradesh**, highlighted that we must understand air pollution cannot be controlled by a drop of hat; we need to have a long-term policy. Taking into account the resources are not up to the mark to implement city action plan, we must prioritize our activities.

**Ms Prarthana Borah, Director of India, Carbon Disclosure Project (CDP)**, added that industry has been responsible for India's air pollution, which needs to be lowered. Energy is central to the air pollution and climate crisis and energy-related fuel consumption accounts for NOx, SOx, and PMs.

**Dr Anant Mohan, Professor and Head, All India Institute of Medical Sciences (AIIMS)**, said that we have enough evidence that air pollution impacts our health, not only the respiratory organs but it also impacts other parts of our body. The time to take minor steps to control air pollution is gone. It's time to take major steps towards it.

## The Role of Nature in the “Decade of Action” of the 2030 Agenda on Sustainable Development

With only 8 years left, the world is not on track to achieve the Sustainable Development Goals of the 2030 Agenda. In particular, the insufficient progress on environmental SDGs such as sustainable production and consumption, climate action, biodiversity and marine protection is concerning. This event aimed to explore how we got here and more importantly how the way forward can look like. Specifically, it will explore policy approaches in Germany and India and discuss the role of international cooperation. As the pandemic once again illustrates the interconnectedness of environmental, animal and human health, the event put a special emphasis on calls for restoring, protecting and enhancing ecosystems and ecosystem services, or in short, improving biodiversity conservation as a way of accelerating the implementation of the SDGs.

**Dr Simon Zadek, Chair, Finance for Biodiversity Initiative**, said that we need to remember that 100% of the global economy is dependent on nature and any other numbers that anyone offers—30%, 40%, 50%, 60%, simply, is simply inaccurate. We stand on a very unusual historical edge where we are witnessing a surge in the monetarization of nature. In many ways, this is what we have called for, for decades if not generations. However, it remains an open question as to whether this will lead to the launch of a nature-centric economy or a precipice that we are going to fall over into trouble.

**Dr Vinod B Mathur, Chairperson, National Biodiversity Authority**, spoke of biodiversity conservation; it is the youth that we need to sensitize with. The most important value ingrained in the SDG targets is that no one is left behind. Valuing biodiversity in a very clear, very concise manner is the critical first step, both for conserving and augmenting biodiversity. That can happen when you start valuing biodiversity in such a manner, that the process and outcome of valuing it is clear, concise and simple, and understood by the local community.

**Mr Stephan Contius, Commissioner for the 2030 Agenda and Head of Division, German Ministry for Environment (BMUV)**, explained that a green and better economic recovery from the pandemic can truly accelerate our progress towards a climate friendly, nature positive, and truly sustainable transformation.

**Ms Raelene Martin, Head of Sustainability, International Chamber of Commerce** added that we really need to accelerate the transformation of economic, social and financial models to halt and reverse biodiversity loss and the role of businesses is essential in this process, as a source of finance, as a driver of innovation and technological development and as a key engine of economic growth and employment. There is certainly an increasing recognition by businesses on the importance of biodiversity as a key sustainability issue.

**Ms Elke Steinmetz, Head of Division, International Cooperation on Biodiversity, BMUV**, highlighted that there are very high opportunity costs when you try to stop investing in destruction of nature. The idea of global one health is also an underlying aspect that has to be regarded when setting up projects, when setting up new financial ideas, and when setting up new economic strategies.

**Mr Anshu Singh, Statistical Advisor, Non-Governmental Organisation Cell, Statistical Cell, Sustainable Development Goals (SDG), MOEFCC**, expressed that the means of implementation indicators of the SDGs should get the importance that they deserve and the reporting that they should be getting, both at the national and the international fora. Just as we link the climate change and biodiversity and pollution, we must also link the means of implementation of those SDGs with the performance of those SDGs.

# E-Expo

WSDS 2022 has 10 exhibitors in the Summit's E-Expo.

<p>European Union</p>	 <p>EUROPEAN UNION</p>
<p>Youth Climate Conclave</p>	
<p>IFAT India 2022</p>	
<p>Global Energy Alliance for People and Planet</p>	
<p>Stockholm+50</p>	
<p>Tata Cleantech Capital Limited</p>	
<p>UK-India Climate Partnership</p>	
<p>TERI Supi Sugandh</p>	
<p>TERI School of Advanced Studies</p>	
<p>TERI Press</p>	

# COP26 Charter of Actions

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There is a need to address the developmental deficit in emerging economies such as India while simultaneously taking measures to limit global warming as agreed in the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Climate Change Agreement. The 26th Conference of the Parties (COP26) under the UNFCCC was held from November 1–12, 2021 in Glasgow, to mobilize urgent action on climate finance, mitigation, adaptation and resilience, and to strengthen the narrative for better alignment with sustainable development goals. COP26 brought together countries, companies, civil society, and citizens on a common platform to work towards a more sustainable future.

The COP26 Charter of Actions is a knowledge document prepared by The Energy and Resources Institute (TERI) to assimilate questions and thematic options, which can advance climate action and ambition in the country globally. Issues emanating from the COP26 discussions and the Charter culminated at a plenary session at the World Sustainable Development Summit 2022, which assessed the efforts of international climate negotiations in securing a sustainable future, and deliberated on future actions. The Charter examined the themes of equity, green finance, nature-based solutions, adaptation & resilience, energy, clean transport, and business actions.

The Charter activities were supported by the British High Commission, Bloomberg Philanthropies, Shakti Sustainable Energy Foundation, The Rockefeller Foundation, and Tata Cleantech Capital.

## ***Stakeholder Roundtables***

As part of the Charter activities, TERI organized in August 2021, five stakeholder roundtables on the themes of energy, adaptation and resilience, green finance, nature-based solutions, and sustainable mobility. Through the stakeholder roundtables, the Charter team achieved the following objectives:

- Engaged with stakeholders and experts on each theme to solicit feedback for the COP26 Charter of Actions.
- Sought inputs from stakeholders and experts on aspects related to implications for the international community, equity, actions by 2030, and actions by 2050.

## ***National Conference***

In October 2021, TERI organized a high-level event titled 'National Conference on COP26 Charter of Actions,' which was organized with the main objective of disseminating the key messages from the COP26 Charter and to facilitate discussions aimed at raising ambition at the national and global level. The keynote address was delivered by Mr Bhupender Yadav, Hon'ble Minister of Environment, Forest and Climate Change.

## ***Launch of COP26 Charter of Actions during COP26 in Glasgow***

The full publication was released in Glasgow in November 2021 at an official UNFCCC side event titled, "Beyond Climate Neutrality: Using LTS to Chart an Equitable Path for a Resilient Planet", which was organized by The Energy and Resources Institute (TERI) and TERI School of Advanced Studies, in collaboration with German Advisory Council on Global Change (WBGU), WiseEuropa -The Warsaw Institute for Economic and European Studies Foundation (WiseEuropa), and Ecologic Institute.

# Act4Earth Manifesto

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Through the 21st Edition of the World Sustainable Development Summit, The Energy and Resources Institute brought together stakeholders including representatives from international organizations, government, business & industry, research & academia, civil society and youth to deliberate on the modus operandi required for ensuring equitable responses to protect our planet through sustainable consumption and production, energy & resource security, climate justice, and the protection of global commons.

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

- Reinvigorating current multilateral systems by ensuring that climate negotiations and other norm-setting bodies are informed by principles of equity and climate justice, as well as with perspectives from developing countries to drive national and international action.
- Developing multi-level and poly-centric approaches to govern and protect our global commons, which is inclusive of all those who use and depend on these commons, including non-human species.
- Inviting stakeholders to generating financial capital and building capacities for developing green technologies, which helps in inclusive clean energy transitions.
- Avoiding wasteful consumption and promoting efficiency in production patterns, by raising awareness and promoting responsible practices among governments, businesses, and consumers.
- Advocating for paradigm shifts in the global narrative, which decouples the economic growth from environmental degradation.
- Critically examining the dominant narratives on traditional and non-traditional security to advance inclusive, concerted, coherent and effective efforts on sustainable development and climate action.
- Calling upon the global community to bridge the gap between mitigation and adaptation through effective means of implementation including climate finance, innovation, and capacity building.
- Ensuring policy coherence through mainstreaming sustainable development into economic policy, including through SDGs-linked budgeting processes.
- Communicating issues related to climate change and sustainable development to all stakeholders effectively, through a balanced approach which instils hope, without losing our sight on the gravity of the climate change and limits to growth.

# Act4Earth Platform

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The Energy and Resources Institute (TERI) launched a major initiative titled, “Act4Earth” in the valedictory session of the 21st Edition of World Sustainable Development Summit (WSDS). Building on the discussions from the Summit, this initiative will seek to continuously engage with stakeholders across the board on issues related to sustainable development and climate action. Being a major platform in the Global South, Act4Earth together with WSDS will seek to pioneer conversations that will drive ambition and action on climate change and sustainable development needs. The Act4Earth platform will have two main components: COP Compass; and SDG Charter. The overarching objective for Act4Earth would be to drive ambitious and urgent action on climate change and sustainable development through knowledge, dialogue, and capacity building.

## **Objectives of the Platform**

The objectives of Act4Earth initiative include:

- Fast-track meeting of global goals on climate change and sustainable development through a continuous process of 'talking to walking' by strengthened stakeholder engagement.
- Drive actions by governments, at all 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 creation and dissemination of knowledge.
- Accelerate solution-based approaches for addressing new and emerging challenges through capacity building and nudging action.

## **Theory of Change**

Based on the deliberations at WSDS 2022, TERI envisages the two components of Act4Earth platform, namely the COP Compass and SDG Charter, will seek to drive change:

- Through engagement for knowledge creation, dissemination and dialogue, the COP Compass will seek to inspire and mobilize leadership at all levels for inclusive transitions through ambitious and informed policies and measures which will enable paradigm shifts towards meeting the Paris goals through mitigation, adaptation, and means of implementation.
- Through developing inclusive and ambitious policy frameworks, SDG Charter will seek to ensure that sustainable development is further mainstreamed in government agendas, which will lead to enhanced environmental, social, and economic outcomes.

## **Partnerships**

Partnership for Act4Earth comes with a pledge for promoting knowledge driven environmental stewardship and stakeholder engagement for collective action. Act4Earth activities would involve research and advocacy by engaging with governments, international organizations, business & industry, research & academia and civil society.

# Ways Forward

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Post the Summit, the team works on documentation and dissemination of the messages of the 21st 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 the 21st edition of World Sustainable Development Summit in February 2022 focussing on climate action and sustainable development goals (SDGs). The two components of Act4Earth include COP Compass and SDG Charter.

Under COP Compass, TERI researchers will undertake research and stakeholder engagement under various topics. One topic will examine key issues at hand for COP27 climate negotiations including climate finance, Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation, and Loss and Damage. Another topic will be on Global Commons and climate action. Similarly, under SDG Charter, TERI researchers will undertake research and stakeholder engagement under various topics. As for engagement with the Sustainable Development Goals (SDGs), one topic will examine SDG 7 (affordable and clean energy) from the perspective of inclusion. Another topic will cover SDG 12 (responsible consumption and production) from the perspective of a critical analysis of global indicator framework.

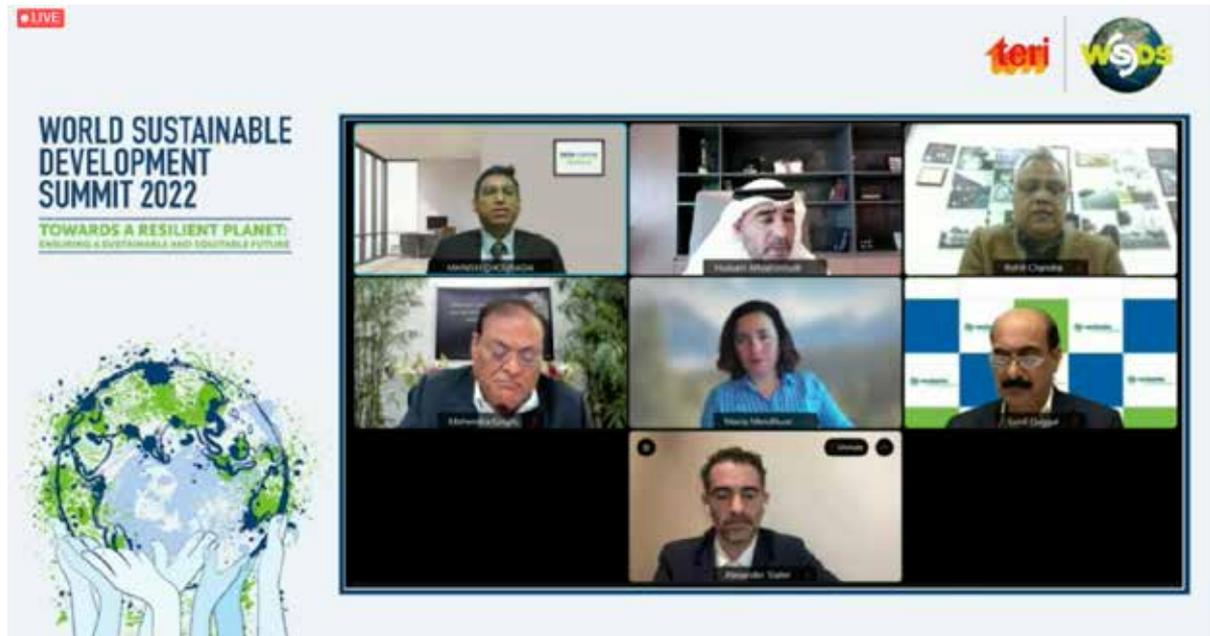
Along with Act4Earth, the team will also deliberate on the themes of the Twenty-Second Edition of the World Sustainable Development Summit, which will be held in February 2023. The curtain-raiser event for WSDS 2023, which will announce the themes and dates of the next Summit, will be organized ahead of the World Environment Day in 2022.

# Gallery

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# Sessions @WSDS2022



**CEO Forum:** Reorienting Market Economies and Accelerating Development of Green Technologies for Sustainable Development Goals, February 16, 2022



**Media Colloquium:** Role of Communications as a Means for Shaping Public and Political Perceptions and Attitudes on Climate Action, February 16, 2022



**Inaugural Session:** Ambition and Action in the Critical Decade for addressing Climate Change and Realizing Sustainable Development, February 16, 2022



**Ministerial Session:** Leadership in Developed Countries- Reconciling the Role of States and Markets for Sustainable Consumption and Production, February 16, 2022



**Ministerial Session:** Leadership in Developing Countries- Reconciling Opportunities and Challenges of Climate Resilient Development, February 17, 2022



**Special High-level Session:** COP Charter of Actions- from Glasgow to Sharm el-Sheikh, February 17, 2022



**Ministerial Session:** Sub-national Leadership for Inclusive Green Growth, February 17, 2022



**Plenary Session:** Multilateralism and Global Action in the Anthropocene for Planetary Resilience, February 17, 2022



**Plenary Session:** Global Commons Beyond Sovereign Domains- Oceans, Atmosphere and Biodiversity, February 17, 2022



**Plenary Session:** Women Leadership and Our Common Future, February 17, 2022



**Youth Plenary:** Intergenerational Conversations towards Systemic Transformations for Achieving Climate Justice, February 18, 2022



**Plenary Session:** Meeting the Twin Goals- Energy Security and Resource Security, February 18, 2022



**Book Launch:** Concerned Citizen Series “Sun through the Roof”, February 18, 2022



**Plenary Session:** Planetary Health, Humanitarian and Equity Implications of Sustainable Development Policies, February 18, 2022



**In Memoriam:** Release of a Book and Archives on Dr RK Pachauri, February 18, 2022



**In Conversation:** A Dialogue with Sadhguru on Our Fragile Planet, February 18, 2022



**Valedictory Session:** Collective Action for Ensuring a Sustainable and Equitable Future, February 18, 2022

# E-Expo @WSDS 2022



**European Union**



**Global Energy Alliance for People and Planet**



IFAT India 2022



Stockholm+50



Tata Cleantech Capital Limited



TERI Press



TERI School of Advanced Studies



TERI Supi Sugandh



**UK-India Climate Partnership**



**Youth Climate Conclave**

# Important Links

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## **WSDS 2022 Website**

<https://wds.teriin.org/2022/>

## **Inaugural Address by the Prime Minister of India**

<https://pib.gov.in/PressReleasePage.aspx?PRID=1798827>

## **COP26 Charter of Actions**

<https://wds.teriin.org/2022/cop-26.php>

## **Daily Summit Bulletins**

- Day 1: <https://wds.teriin.org/2022/assets/pdf/WSDS-Bulletin-2021-22-Day1.pdf>
- Day 2: <https://wds.teriin.org/2022/assets/pdf/WSDS-Bulletin-2021-22-Day2.pdf>
- Day 3: <https://wds.teriin.org/2022/assets/pdf/WSDS-Bulletin-2021-22-Day3.pdf>

## **Press Releases**

<https://wds.teriin.org/2022/news-pressrelease.php>

## **Videos**

<https://wds.teriin.org/2022/video.php>

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