

WORLD SUSTAINABLE DEVELOPMENT SUMMIT 2022

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

February 16-18, 2022



SUMMIT BULLETIN | DAY 2

MINISTERIAL SESSION

Virtual Hall: Gir Auditorium

MINISTERIAL SESSION: LEADERSHIP IN DEVELOPING COUNTRIES: RECONCILING OPPORTUNITIES AND CHALLENGES OF CLIMATE RESILIENT DEVELOPMENT

Moderators : 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



In this session, Hon'ble Ministers of the Ministry of Environment from different countries gave their insights regarding 'resilience' and talked about various steps that their respective countries are taking to achieve it. Dr

Yasmine Fouad talked about attaining resilience through climate governance and greening of national budget. She kept forward the idea of how climate change should be considered in development programmes by keeping head

of the government in centre and involving green projects as 50% of government funded projects. Ms Khadeeja Naseem from Maldives informed about existential stress that her country is facing due to sea-level rise and climate change.

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DR YASMINE FOUAD
Hon'ble Minister, Ministry of Environment, Egypt

“Climate governance is really very important to set the road at the national level.”

- ### Actionable Messages
- Institutionalize the climate change at political level
 - Greening of National Budget
 - Sustainable financing from developed to developing countries
 - Building and retention of human resources and institutional capacity
 - Balancing climate change mitigation and adaptation efforts
 - Use public finance to draw in capital markets
 - Investments towards social protection and water
 - Public participation
 - Aligning our development programmes to have greater collective impact than its individual impact



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

“Implementation of climate actions can only be possible by the provision of adequate predictable and sustainable financing from developed countries to developing countries.”

To overcome this, the country has taken various steps like mitigation and adaptation financing as well as building local capacity of the community. She also put forward the fact that the impact of climate change is not bound to a nation but is extended beyond it and therefore, it is our responsibility to look beyond borders. Mariam bint Mohammed Saeed Hareb Almheiri talked about the importance of balancing climate change mitigation and adaptation efforts as well as the need for collective work to achieve resilience. She also mentioned the importance of multilateralism in addressing the issue of climate change. Dr Junaid Kamal Ahmed threw light on various themes that should be discussed in COP27 such as developing countries to present development transitions. He drew everybody's attention to the potential of leveraging multilateral finance through public financing. Mr Kamal Kishore threw light on three points—the first one being that the resilience agenda has a lot of focus towards government framework, policies and actions whereas it is leaving behind people. We need to follow the path of public participation to achieve the goals of resilience. Keeping people at the centre involves local level analysis, connecting science to society and organizing data at local level. Secondly, we need to have resilience outcome that people can connect to. Third being aligning the ongoing development programmes in a manner that its collective impact is higher than its individual impact.




HE MARIAM BINT MOHAMMED SAEED HAREB ALMHEIRI
Hon'ble Minister, Ministry of Climate Change and Environment, United Arab Emirates

“There is an enormous potential to build a better world for all through multilateralism.”



DR JUNAID KAMAL AHMAD
India Country Director, The World Bank

“If adaptability is going to be important area of concern, then there are two topics that need to be put on the table very strongly, one is Social Protection, second is Water.”

TEAM:VASUNDHARA



EDITORIAL

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DESIGN

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ARTISTS

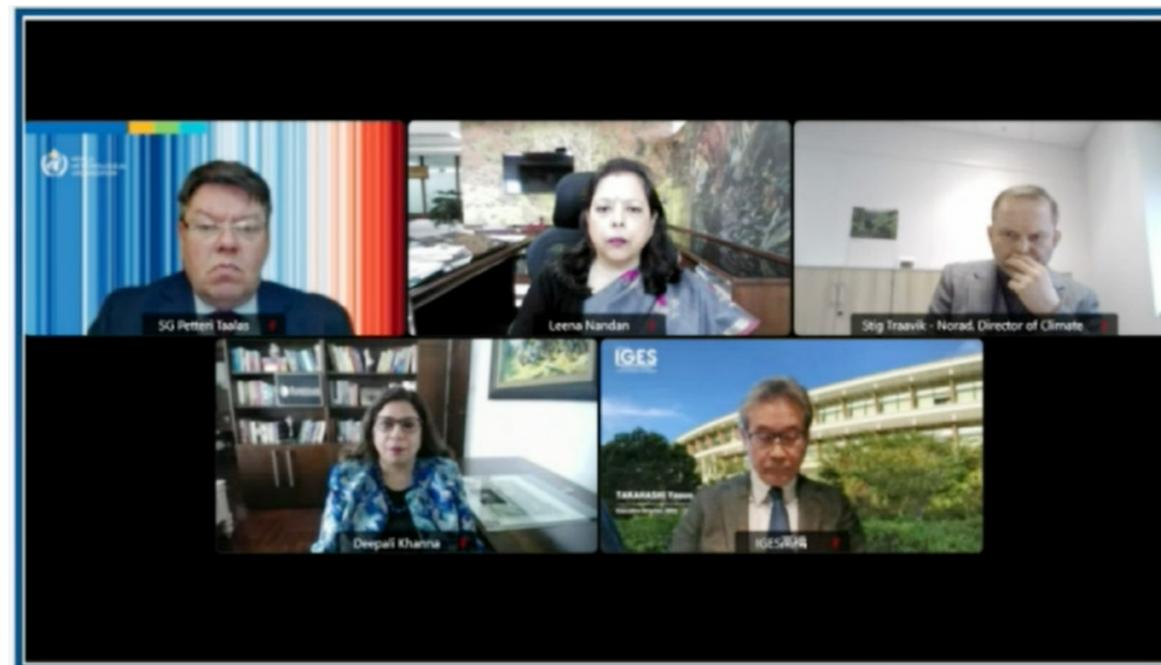
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THE 9TH EDITION OF 'VASUNDHARA' WAS LAUNCHED

Vasundhara is an initiative of the Eco Club which is the official Sustainability magazine of TERI School of Advanced Studies, entirely run by the students. The launched edition was based on the central theme of "Wetlands" and covers a wide range of topics, such as Restoration, Technology and its different aspects, Impacts on the lives of indigenous communities, economic importance and much more.

COP CHARTER OF ACTIONS – FROM GLASGOW TO SHARM EL-SHEIKH

Moderators : Mr RR Rashmi, Distinguished Fellow, TERI
Science Leadership Address : Prof. Petteri Taalas, Secretary-General, World Meteorological Organization
Keynote Address : Ms Leena Nandan, IAS, Secretary (EF&CC), Ministry of Environment, Forest and Climate Change, Government of India
COP Leadership Addresses: Rt Hon Alok Sharma, COP26 President and Minister of State at the Cabinet Office, United Kingdom; H.E. Mr Sameh Shoukry, Hon'ble Foreign Minister, Egypt
Speakers: Mr Yasuo Takahashi, Executive Director, Institute for Global Environmental Strategies; Mr Stig Traavik, Director of the Department for Climate and Environment, NORAD, Norway; Ms Deepali Khanna, Managing Director of Asia Region Office, Rockefeller



Mr RR Rashmi started the session by setting up the context of COP 26. The fundamental concern he raised that need to place on the table is the situation it has obtained today of attaining the net-zero goals by 2050, 2060, or 2070 adopted by countries nationally. There is a need to fast track the emissions trajectories. There has to be balance of equity and balance in global emissions. He introduced the panel. Prof. Petteri Taalas thoroughly talked about the greenhouse gas emissions due to CO₂, CH₄, and N₂O continue to rise which led to the period of 2017–21 as the warmest period on record in the Anthropocene epic. He underlined the climate crises are recurring, it is likely that we will reach the 1.5 degree if we follow the current pattern of emission rate. The session was followed by Ms Leena Nandan who focused on one of the major challenges, that is, vulnerability due to climate disasters, hence adaptation should be the primary focus. She also emphasized importance of transparency in terms of equitable distribution of finance for both adaptation and mitigation actions. The next speaker—Mr Alok Sharma’s—focus was on need of scaling up the finance and technological needs for ambitious goals set up in Glasgow. He said rather than being vocal it is necessary to take actions. Mr Stig emphasized on the

positives in India. He said that India is already a leader in solar energy and high target in solar energy. He also added that India is also positive towards taking nature-based agriculture actions. His concern was that people in developing countries are most affected by climate change. Hence, it is important to have innovations in climate finance to help developing countries. Lastly, Ms Deepali focused on chartering to more equitable future and that should be main concern in COP 27. The solar target of India has really positive impacts, however, just transition should be taken in actions.

Actionable Messages

Message 1 Enhancing climate finance is the key in order to facilitate the urgency required for meeting NDCs and global movement towards emission reductions and keeping the goal of 1.5-degree celsius alive.

Message 2 The Sixth IPCC Report reiterated the increasing intensity and frequency of extreme climate events. COP 26 went on to emphasize on the need for focusing on adaptation to combat the increasing adverse effect of climate change and increasing loss and damage.

Message 3 To combat concerns of climate change such as sea-level rise, global warming, we have to work together in collaborated environment to achieve the targets in the near future.



RT HON ALOK SHARMA
 COP26 President and Minister of State at the Cabinet Office, United Kingdom

“ We need to ensure that this year 2022 is the vital year and is one for the delivery. ”



MR YASUO TAKAHASHI
 Executive Director, Institute for Global Environmental Strategies

“ In order to achieve long-term sustainability goal, it is important to ensure collaborative actions between countries to fast-track climate change agenda. ”



MS LEENA NANDAN
 IAS, Secretary, Ministry of Environment, Forest and Climate Change, Government of India

“ Duties are being done but responsibilities need to be distributed equally. ”



MS DEEPALI KHANNA
 Managing Director of Asia Region Office, Rockefeller Foundation

“ India can lead the way for emerging economies worldwide. ”



H.E. MR SAMEH SHOUKRY
 Hon'ble Foreign Minister, Egypt

“ As part of next COP 27, as President, I will make sure that no country is left behind in COP 27. ”



PROF. PETERI TAALAS
 Secretary-General, World Meteorological Organization

“ Approximately 4.5 billion people were affected due to the climate change disasters ”



MR RR RASHMI
 Distinguished Fellow, TERI

“ Need the sense of shared responsibility and all stakeholders should work together for climate action. ”

SUB-NATIONAL LEADERSHIP FOR INCLUSIVE GREEN GROWTH

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, Government of Tamil Nadu; Mr James K Sangma, Hon'ble Cabinet Minister for Power, 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 and Secretary, Government of Assam



The Ministerial Session on Sub-national Leadership for Inclusive Green Growth was a fruitful one. It was presided by eminent ministers and policy-level individuals from states and institutions. The opening speech was given by Dr Vibha Dhawan. She focused on saying that India is a unique country. We are still growing, have to develop and we have sort of scope to show to the world what green development means. Because most countries in the west already have the infrastructure in place and changing infrastructure is tougher than building new ones based on the principles of green growth. This was followed by Mr Ajay Shankar and he presided over the session. The session began with Mr Aaditya Uddhav Thackeray and he stressed on climate action. He also said that India's threats lie in the fact that most of the country is still under poverty, most of the country is still agrarian and on the cusp of development. And this is the real threat because climate change is accountable for change in geographies. This is not only going to create economic issues for us but also will also be accountable for creation of social issues.

Dr Palanivel Thiagarajan stressed on the fact that while we need national policies on things like cross-border trade-related incentives for environmentally-referred assets, the bulk of the work needs to be done at the state, district, and local body levels. It was followed by Mr James Sangma who stressed on the fact that the north-eastern region represents a unique ecological hotspot that performs various essential and critical ecosystem services for the nation.

Mr Atul Bagai stressed on the Nationally Deterministic Contributions (NDCs) by saying that the NDCs are at the central level or pan-India level but the gap in understanding how do state governments, how do industries and how do civil societies and their percentage of work is going to contribute to the national target kind of a study needs to be carried out very quickly.

Finally it can be concluded by Mr Shantanu Gotmare on the fact that green growth is a pathway which may start today but over a period of time, over generations it would lead to sustainability, low destruction of the planet.



MR AADITYA UDDHAV THACKERAY

Hon'ble Cabinet Minister of Tourism, Environment and Protocol, Government of Maharashtra

“India can contribute the most to climate action because of its necessity and because of its capacity.”



MR DIPAK SINGH

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

“It is imperative that the strategy with which we build and think about has to be broken into action points which are intelligible and actionable for every level of government and for each and every individual citizen.”



MR AJAY SHANKAR

Distinguished Fellow, TERI and Former Secretary Department of Industrial Policy and Promotion

“Extreme weather events are a reality and we are also discovering costs of coping with these events and the costs of adaptation would be far higher than the costs of mitigation and keeping global warming within 1.5 degree Celsius.”



DR PALANIVEL THIAGARAJAN

Hon'ble Finance Minister, Tamil Nadu

“A lot of implementation can only happen at the local bodies up to the districts and up to the states.”



DR VIBHA DHAWAN

Director General, The Energy and Resources Institute

“India is a unique country. We are still growing, have to develop and we have sort of scope to show to the world what green development means.”



MR JAMES K SANGMA

Hon'ble Cabinet Minister for Power, Government of Meghalaya

“The entire North-East represents a unique ecological hotspot that performs various essential and critical ecosystem services for the nation.”



MR SHANTANU GOTMARE

Commissioner and Secretary, Government of Assam

“Green growth is a pathway which may start today but over a period of time, over generations it would lead to sustainability, low destruction of the planet.”

Virtual Hall: Gir Auditorium

MULTILATERALISM AND GLOBAL ACTION IN THE ANTHROPOCENE FOR PLANETARY RESILIENCE

Moderator: Mr Chandrashekhar Dasgupta, Distinguished Fellow Emeritus, TERI
Keynote Addresses: 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

Actionable Messages

Accountable to support each other in meeting their obligations under the Paris agreement, and this work must begin immediately in 2022.

The plenary session focused on how multilateral institutions and stakeholders at all levels can collectively address issues related to planetary resilience in the Anthropocene. The session moderator, Mr Chandrashekhar Dasgupta welcomed the delegates to deliver the keynote address.

Ms Patricia Espinosa, Mr Pema Gyamtsho, and Mr Frans Timmermans delivered their keynote addresses, which included their views on climate change and its impacts. Moreover, they acknowledged COP26 outcomes held in Glasgow, UK, in November 2021 as COP26 was when the world started to move from ambition to action. Furthermore, it was a victorious moment for multilateralism, but it is also essential to reflow and strengthen existing multilateral agreements and explore other innovative mechanisms. Furthermore, all need to focus on the challenges that need to be addressed and speed up the actions.

Following this, the leadership address session included a presentation by Dr Bambang Susantono and Mr John Roome. After this, a round of discussions based on the points by speakers concluded the plenary session.



MR FRANS TIMMERMANS
 Vice-President of the European Commission

“Climate crises are wreaking havoc in each country, and a planetary emergency needs a global response.”



MR PEMA GYAMTSHO
 Director General, ICIMOD

“There is an urgent need to rethink the structure and workflow of institutions and visualize how their functions can be repurposed to address the environmental and ecological challenges seamlessly.”



MS PATRICIA ESPINOSA
 Executive Secretary, United Nations Framework Convention on Climate Change

“Statistics are essential, but they are static; what humanity does with that is important.”



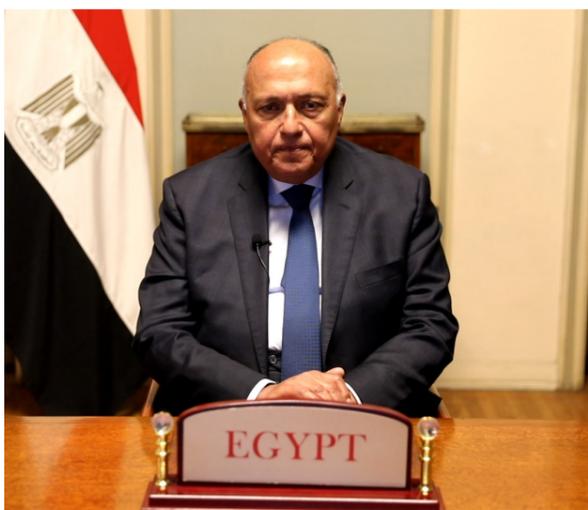
DR BAMBANG SUSANTONO
 Vice President, Knowledge Management and Sustainable Development, Asian Development Bank

“The impact of climate change is growing alarmingly, and this has profound socioeconomic effects on human health, food security, infrastructure, and development.”



MR JOHN ROOME
 Regional Director, South Asia Sustainable Development, World Bank Group

“The interlinkages between climate change and biodiversity and other global environmental problems should be borne in mind.”



Areas of Focus by COP27 President Designate
 H.E. Mr Sameh Shoukry, Hon'ble Foreign Minister, Egypt

Assuring that no country will be left behind, Mr Sameh Shoukry, Foreign Minister of Egypt and COP 27 President Designate, said the outcomes at Sharm el Sheikh, the venue for COP 27, will be a turning point in terms of `global climate action. With its focus on implementation and delivery, COP 27 will be aimed at bridging the gaps in mitigation, adaptation, loss and damage and climate finance, said Mr Shoukry at the World Sustainable Development Summit (WSDS) on Thursday in New Delhi.
 “Enhancing ambition at all levels and on all fronts by continuing to urge for further revised NDCs from parties that are yet to submit theirs will be a priority,” Mr Shoukry added. So will be empowering youth and civil society and making sure that the younger generation has a voice in the process. “Those who continue to suffer the most from the impacts of climate change [will] have the space to speak their minds and highlight to politicians and decision makers the importance of taking sometimes painful but necessary steps in the right direction,” the COP 27 President Designate said while speaking at a session on COP Charter of Actions – From Glasgow to Sharm el-Sheikh.



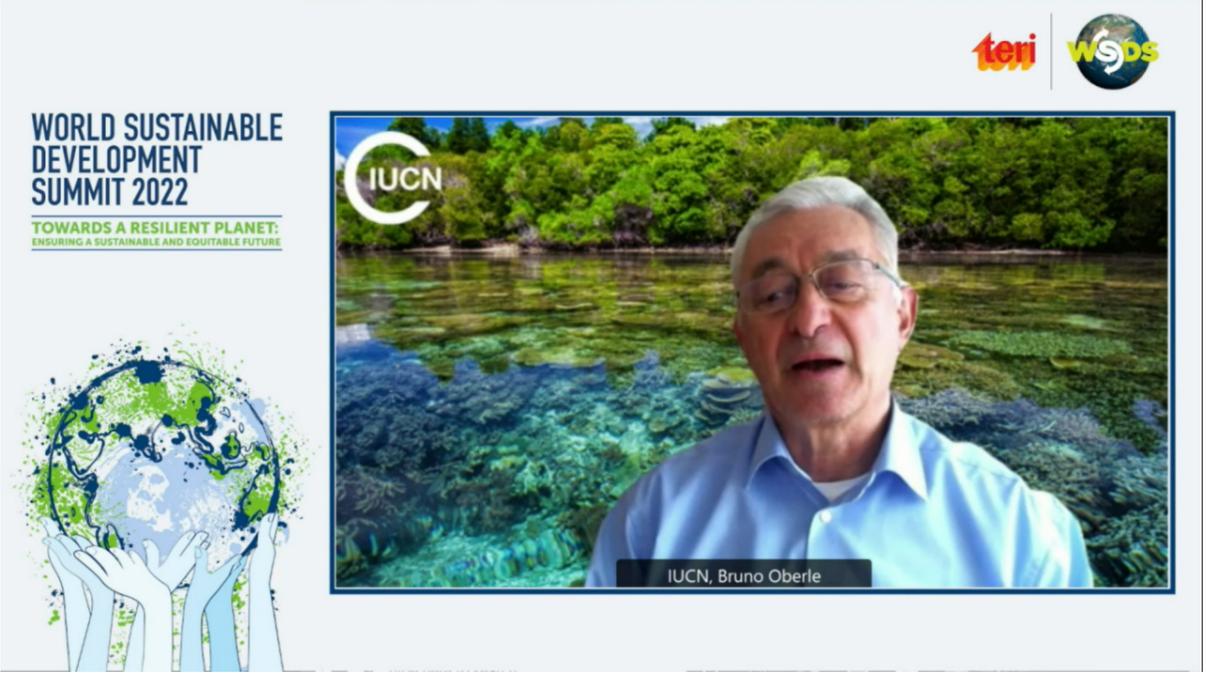
PROF. JAN ZALASIEWICZ
Chair, Anthropocene Working Group, International Commission on Stratigraphy

Amount of energy used by humans has increased that led to a trillion tones of CO₂ emission which cause heat and imbalance on our land.

GLOBAL COMMONS BEYOND SOVEREIGN DOMAINS – OCEANS, ATMOSPHERE AND BIODIVERSITY

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

The session highlighted the importance of oceans, atmosphere, and biodiversity domains at global level. Many challenges and gaps have arisen, in terms of global domains, leading to warming of the oceans and loss of biodiversity. The session talked about different eras such as late Pleistocene, Holocene, Anthropocene, and last 2000 years of Holocene era were important for us as most of the civilization has experienced expansion, leading to development of the economy. But there has been a dramatic increase in many parameters in anthropocene era such as plastics, concrete, pesticides, heavy metal pollutions, and many more. Anthropocene is not just about change in oceans but it is a state of earth as a whole because of anthropogenic activities. Human pressure has accelerated the global impacts such as GHG gases, ozone depletion, climate, coastal zone, marine ecosystem and biosphere integrity. In the session, it was mentioned that all of us are interlinked as we all are affected by the pacific oceans El Nino and La Nina events. The session made us aware that due to these events the earth is heating rapidly and 2020 was 1.2 degree Celsius above the 1850–1900 average (pre-industrial), it was one of the three hottest years on record. To overcome these devastating exploitation done by humans so far needs a systematic thinking and international efforts to be made in one single direction with the intention to save our nature. These are the need of the hour as nature is declining globally at rates unprecedented in human history.



The key suggestions provided by the speakers are:

- We must concentrate on the marine and protected areas beyond national jurisdiction.
 - We need to understand the pattern of the complex earth system as the large-scale oceans are interconnected and due to mixing in circulation the problem becomes wider.
 - As this issue is global and therefore, there is a need for a strong and common solution to protect the marine biodiversity and ocean domain.
- The session ended with the launch of a sustainability magazine run by students of TERI SAS "Vasundhara" which means "The Earth" and is based on environmental sustainability topics.

Actionable Messages

- Message 1** It is important to protect and conserve 30% of the global oceans and the wide diversity of marine protected areas by providing strategic management plans to implement and monitor them regularly.
- Message 2** The changes in the atmosphere are profound and there is an urgent need to examine them and hence, we should learn to live mutually with nature to save the atmosphere and protect it from anthropogenic activities.
- Message 3** Our coastal areas can no longer tolerate the burden of pollution due to plastic. A systematic and comprehensive approach is needed that combines technology and management which is the key solution to this anthropogenic hazard.



MR BRUNO OBERLE
Director General, International Union for Conservation of Nature, Switzerland

We need to adopt and manage global oceans based on equity and accountability by adopting and identifying the common interest for the benefit of both human kind and ocean kind.



MR HANS JACOB FRYDENLUND
Ambassador, The Royal Norwegian Embassy, New Delhi

Global actions and strategies are required to overcome the further problematic situations.



MR EMANNUEL LENAIN
Ambassador, Embassy of France in India

India is a game changer and acts as catalyst as India has given the opportunity on a broader scope to join the ambition to save nature and people together.

WOMEN LEADERSHIP AND OUR COMMON FUTURE

Moderator : Dr Vibha Dhawan, Director General, TERI
Co-moderator : Mr Shreyas Joshi, Young Professional, TERI
Leadership Addresses : Ms Sanda Ojiambo, CEO & Executive Director, United Nations Global Compact; Prof. Laurence Tubiana, Chief Executive Officer, European Climate Foundation; Ms Rachel Kyte, Dean, Fletcher School, Tufts University; Ms Helen Clarkson, Chief Executive Officer, The 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

Actionable Messages

Message 1 During the COVID-19 pandemic and other calamities women and children are the most effected parts of the society. Therefore, we need to give more structural thinking to address such issues.
Message 2 Women representation in the field of climate sector, politics and other areas are limited but the scenario should be changed in the near future



MS HELEN CLARKSON
 Chief Executive Officer,
 The Climate Group

“ Structural changes in education for women are the tool for bringing the overall changes in the field of climate change, agriculture, equality science, etc. ”



PROF. LAURENCE TUBIANA
 Chief Executive Officer,
 European Climate Foundation

“ We are lagging behind in many areas of the world in terms of women leadership, but we have the opportunity to be an example for others. ”



MS RACHEL KYTE
 Dean, Fletcher School,
 Tufts University

“ I think we (women) stand on each other's shoulders for promoting women leadership. ”



The session moved around the present situation of women leadership all over the world during the pandemics and other crucial times. The various case studies from Africa and other third world countries have shown that women and children are the worst affected people in the world. There are many steps that must be taken to improve the status of women by providing the quality education, spreading awareness and providing equal platform for women to take the leadership roles. The 2030 sustainable agenda highly talks about effective participation of women at all levels of decision-making in political, economic, and public life.

The session moved ahead specifically on the importance of education and speakers talked about the role of education in preparing younger generation for combating climate change issues. Furthermore, interventions at local level can bring more effective results and encourage other women to be a part of this crusade.



DR VIBHA DHAWAN
 Director General, TERI

“ Women have greater responsibility to inspire and guide the next generation towards the environment. ”



MS MERCY WANJA KARUNDITU
 Deputy Executive Director,
 The Green Belt Movement

“ Challenges of getting easy finance, training skills, access to information are the key bottlenecks in Africa in the path of women empowerment. ”



MS XIYE BASTIDA
 Co-founder, Re-Earth Initiative

“ Act locally and think locally because things go faster in that way. ”

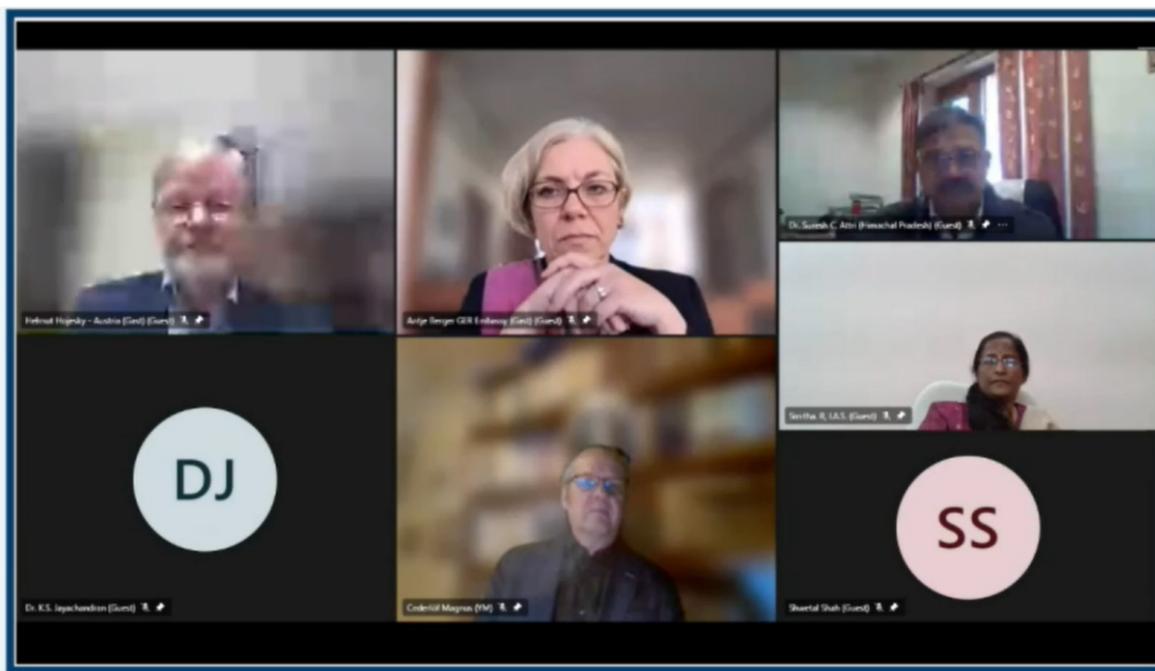


Speaking at a session on 'Leadership in Developing Countries: Reconciling Opportunities and Challenges of Climate Resilient Development', Dr Yasmine Fouad, Minister of Environment, Egypt, said, "We have the Glasgow – Sharm el-Sheikh work programme on the global goal on adaptation. It will focus on the next steps for implementation. The work programme will enable the full and sustained implementation of the Paris Agreement towards achieving the goal on adaptation, both action and support

On Global Goal on Adaptation
 Dr Yasmine Fouad, Minister of Environment, Egypt

ENABLERS FOR SAPCC REVISION AND IMPLEMENTATION

Speakers : Mr Mr Abhishek Kaushik, Fellow and Area Convenor, TERI; Mr Edwin Koekkoek, First Counsellor on Energy and Climate Action, European Union Delegation to India; Mr Ashish Tiwari, Secretary, Environment, Forest and Climate Change Department, Government of Uttar Pradesh; Mr Kirtiman Awasthi, Adaptation Thematic Lead, CAFRI project, GIZ-India; Dr Suresh Kumar Attri, Principal Scientific Officer, Government of Himachal Pradesh; Mr. Helmut Hojesky, Head of Department / General Climate Policy, Austrian Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology; Dr Shwetal Shah, Advisor, Department of Climate Change, Government of Gujarat; Mr Magnus Cederlöf, Senior Advisor, Ministry of Environment, Finland; Mr K.S. Jayachandran, Special Secretary, Environment, Government of Delhi; Ms Smitha R., IAS, Secretary to Government, UT of Puducherry; Dr Antje C. Berger, Counsellor, Climate and Environment, Embassy of the Federal Republic of Germany



It is very important to have some key focus areas to really be able to advance the SAPCCs. Different states have different priorities based on their localized contexts. Some of the running themes among them are the need to strong build institutions and proper institutional frameworks to prepare and guide these actions. India lacks a climate law but many of the states have taken it upon themselves to have a climate goal, for example, Himachal, Ladakh, and Bihar. Even with the absence of climate law, these institutions can take

responsibility provided adequate resources are available. Another key enabling factor will be climate finance. In the long run, the resources will have to be mobilized with the help of the private sector as well. There is a need to create good business models for mitigation as well as adaptation. There is also a need to have clear targets for implementing these actions. Vast stakeholder consultations will be necessary for having the support of the local communities who will be the most vulnerable to the effects of climate change.

Actionable Messages

Message 1 Built infrastructure and institutional frameworks for carrying out policies and plans need to be strengthened.

Message 2 Climate finance and funding in the long run will require the support and intervention of the private sector.

Message 3 Clear targets and roadmaps to them will be required for achieving ambitious goals.



DR SHWETAL SHAH

Advisor, Department of Climate Change, Government of Gujarat

“ Increase in the frequency and intensity of coastal disaster, the focus is for Gujarat is now to have a very detailed planning at the grassroots level – early warning and community mobilizing are two important strategies are for combating this. ”

Focusing on the critical importance of trajectory of low emission development pathway towards net zero, the session on industrial decarbonization in India 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.

Industry being the largest consumer of electricity in India, the focus must be on maximum use of electricity wherever doable rather than the use of fossil fuels. Going forward, the move should be made towards promoting the use of electricity and other non-fossil fuel in the supply chains as well. The ultimate move of India towards decarbonization and towards introducing hydrogen comes with a lot of challenges.

As the energy demand in India is going to double by 2050, there is a need of decoupling the emissions from growth. As industry is a hard-to-abate sector, the discussion during the thematic track moved towards presenting innovation, energy efficiency and renewable energy options across the various industrial sectors. From the perspective of chemical industry, decarbonization is linked with circular economy. The future is focusing on the capacity building and system thinking at execution at scale. Secondly, the running innovation and pilot programmes in partnership with the private sector are important. Thirdly, work needs to be done on concentrated solar in the form of electricity and heat.

TOWARDS INDUSTRIAL DECARBONIZATION IN INDIA: KEY ENABLERS AND OPPORTUNITIES

Speakers : Mr Thomas Kerr, Lead Climate Specialist, South Asia, The World Bank Group; Mr R Mukundan, Managing Director and CEO, Tata Chemicals Limited; Mr Shrinath Savor, Chief Sustainability Officer, Shree Cement Limited; Mr Vineet Mittal, Chairman, Avaada Group; Prof. P K Sen, Former Professor & Consultant, IIT Kharagpur; Mr Sandeep Tandon, National Project Manager, UNIDO Project – Facility for Low Carbon Technology Deployment (FLCTD)



From the perspective of renewable technology, the interest of industries to completely go green will increase if the government provides incentives to fully depreciate the industrial plants and gives tax savings. Also, in terms of transition of technologies, the government should encourage role models and greener approach as an integral part in the production process.

Actionable Messages

Message 1 Creating private-public partnership and introducing a mechanism to coordinate the players is crucial.

Message 2 Implementing circular economy strategies is essential to achieving decarbonization

Message 3: Introducing green hydrogen in various sectors is one of the key technologies towards decarbonization.

PLASTICS AND CIRCULAR ECONOMY: MAKING EPR WORKABLE

Speakers : Mr Hans-Peter Egler, Director, Sustainable Infrastructure and Public Affairs, South Pole; Mr Rajesh Pahwa, Founder and CEO 21st Century Polymers; Mr Ranjit Singh, Founder – AspireLabs; Dr Shilpi Kapur, Vice President, Environmental Management Centre; Dr Lakshmi Raghupathy, Former Director MoEFCC, Adviser, Foundation for Innovative Packaging and Sustainability; Ms Ekta Narain, Co-founder, Recykal

The session largely focused on how the existing EPR regulations aren't 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.



MR RAJESH PAHWA
Founder and CEO 21st Century Polymers

“While technology plays a big role in plastic recycling, a recycling unit in the same state is a must to make a project sustainable.”



MR RANJIT SINGH
Founder – AspireLabs

“To embrace a circular economy for plastics we need to radically look at a separate policy to deal with bulk generators.”

Actionable Messages

Message 1 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.

Message 2 Plastic credits are an excellent mechanism to improve financing prowess within the waste management segment and make way for widescale research to take place for its augmentation.

CEO ROUNDTABLE: HOLISTIC SUSTAINABILITY AS AN INDUSTRY GROWTH AGENDA TO SHAPE INDIA'S CLIMATE AMBITION

Speakers : Mr Girish Sethi, Senior Director – Energy, TERI; Mr Paul Marriot, President, SAP Asia Pacific Japan; Amb. Manjeev Singh Puri, Distinguished Fellow, TERI; Mr Mahendra Singhi, Managing Director and CEO, Dalmia Cement (Bharat) Ltd; Mr Nitin Prasad, Chairman, Shell Companies in India; Ms Sindhu Gangadharan, Managing Director, SAP India Labs; Mr Rajiv Ranjan Mishra, Managing Director, Apraava Energy Pvt. Ltd; Mr S Sunil Kumar, Country President India and Regional Director Packaging IMEA, Henkel Adhesives Technologies India Pvt. Ltd; Dr Lovneesh Chanana, Vice President (Government Relations), SAP



MR MAHENDRA SINGHI
Managing Director and CEO, Dalmia Cement (Bharat) Ltd

“Industries should follow the mantra in their operations which is, green and clean is profitable and desirable.”



MS SINDHU GANGADHARAN,
Managing Director, SAP India Labs

“While technology plays a big role in plastic recycling, a recycling unit in the same state is a must to make a project sustainable.”

Actionable Messages

- In order to achieve decarbonization, it is crucial to collaborate with the government to shift from business as usual. Furthermore, collaboration between industries is also important to thrive for sustainability through knowledge sharing and collaboration. Lastly, decarbonization will be achieved through technology collaboration and transfer.
- Indirect emissions (Scope 3) are a big contributor to the industries, which are seldom talked about. Through collaboration, indirect emissions should be targeted at a priority basis.
- At present, India needs to identify strategies to electrify the nations in parallel to the roadmap for decarbonization.
- Some of India's technology needs to decarbonize the industries is fuel switching mainly to hydrogen and carbon-capture-utilization and storage. In line with those technologies demand optimization and material circularity is also a crucial piece of the puzzle.
- Digitalization is a big step for industrial decarbonization, which needs to be adopted in every industry in the year to come.



India is still in its developing pathways and hence the announcements at the COP26 in Glasgow are bold and require a detailed roadmap to achieve. Industries as mentioned by all the esteemed panelists are the key piece of puzzle to achieve the net-zero targets. The first step is to change the mindset of the industries that clean and green will be profitable and desirable. Technologies like hydrogen and carbon-capture-utilization-storage needs to come up in the future. The challenge at present is that these technologies are at its research and development phase and needs time to come into picture. Companies like Dalmia Cement is successful to changing the narrative that hard-to-abate sectors can be clean and green through holistic approach of internal policy shifts. Panelists have talked about

digitalization and role of corporate social responsibility (CSR) towards achieving net-zero targets. They also mentioned that the discourse for industrial decarbonization is mobilization of climate finance, which can be solved through collaborative circular economy. Indirect emissions is another menace that needs to be taken in account and can be solved through industry collaboration. Also, since net-zero targets are long-term in nature, there needs to be an interim solution where industries can focus to reduce the emissions at a certain extent. Lastly, it was talked that the big industries need to set an example for the MSMEs to follow a path in the years to come and hence they need to play a dual role of enabler and exemplifier.

The thematic track on 'Futurists for the Future: a younger, greener collective' represented the present young generation sharing their action being taken towards environment protection and conservation. The panel brings together environment heroes and green buddies who have done exemplary work in the field of the environment, intending to have a greener future. The session 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

Virtual Hall: Kaziranga

FUTURISTS FOR THE FUTURE: A YOUNGER, GREENER COLLECTIVE

Speakers : Mr Sourav Roy, Chief Corporate Social Responsibility, Tata Steel Limited; Mr Naman Gupta, Founder, Code Effort Private Limited; Ms Sejal Kumari, Student, St Mary's School, Noamundi, Jharkhand; Ms Madhuri Bahadur, Community Resource Person (CRP), Kalinganagar, Jajpur, Odisha; Ms Saina Mohanty, Student, St Mary's School, Jajpur, Odisha; Mr Kalicharan Basumatary, Advisor, Manas Maozigendri Ecotourism Society, Assam; Ms Dimple, Student, Tata DAV Public School, WBC, Ghatotand, Jharkhand; Ms Smita Agarwal, Head, Education, Corporate Social Responsibility, Tata Steel Limited; Mr Chanakya Chaudhary; Director, TATA Steel Foundation; Dr Vibha Dhawan, Director General, The Energy and Resources Institute; Mr Pankaj Kumar Satija, Managing Director, Tata Steel Mines

Actionable Messages

It is important for children to learn about the value of ecosystems and biodiversity. The impact of this teaching will be visible 20 years from now. These students will become leaders by then, they will bring into practice the training which they have undergone now



DR VIBHA DHAWAN

Director General, The Energy and Resources Institute

“Guru Gobind Singh Ji took leadership at age of 9 years and there are many other Indian leaders who drive change in the younger years. My appeal to youth is that, age is not a requirement to take leadership or be a change agent.”

needed to facilitate a greener future. The session also included experiences and action-based work witnessed by various other people/organizations in the field of education, environment, and sustainable development. The session also

concluded the initiatives of 'The Green School' programme, which was initiated in April 2017, aiming to create awareness about the environment in school networks. The session also witnessed the launch of E-module – 'Enroute to Green'.



Virtual Hall: Hemis

ELECTRIFICATION OF HEAVY-DUTY VEHICLES – AN EMERGENT ECONOMIC OPPORTUNITY

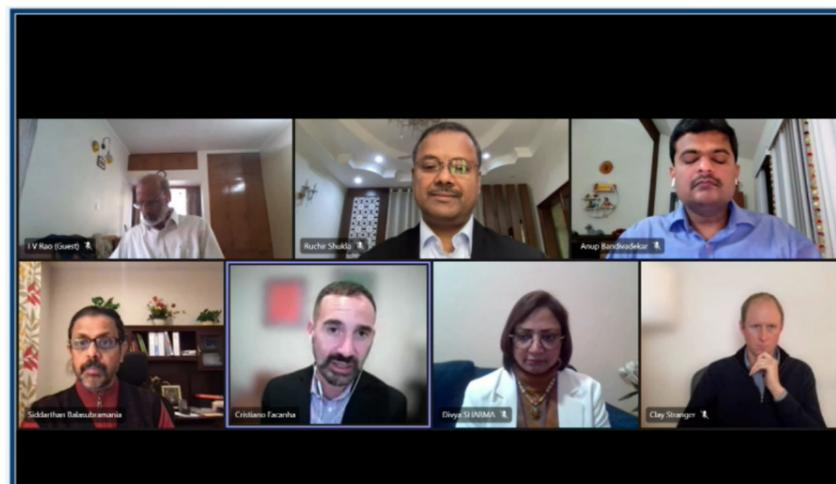
Welcome Address : Mr IV Rao, Visiting Senior Fellow, TERI

Special Address : Shri Sudhendu J. Sinha, Adviser, Transport Infrastructure and EVs, NITI Aayog

Session moderator : Mr Siddharthan Balasubramania, Senior Adviser, Climate Works Foundation

Speakers : Ms Divya Sharma, Executive Director, The Climate Group; Dr Cristiano Façanha, Director, Drive to Zero, CALSTART; Mr Ruchir Shukla, Director, Electric Mobility Program, Shakti Sustainable Energy Foundation; Mr Sharif Qamar, Fellow and Area Convenor, Transport and Urban Governance Division, TERI; Dr Anup Bandivadekar, Program Officer, Hewlett Foundation Environment Program; Mr Clay Stranger, Managing Director, RMI India; Mr Vinit Srivastava, COO, InfraPrime Logistics

The session on Electrification of Heavy-duty Vehicles – an emergent economic opportunity commenced with an introduction and welcome address by Mr IV Rao. A special address by Shri Sudhendu J Sinha described the role of government in supporting transition to e-HDVs and the whole ecosystem for a sustainable freight movement. He highlighted the fact that there is very little experience globally and particularly in India and is important to develop a sound business case for the adoption of e-HDVs. The context and opportunities in HDV sector were presented by Mr Sharif Qamar, followed by the panel discussion moderated by Mr Siddharthan Balasubramania. Mr Siddharthan discussed the short-term and immediate steps to incentivize the sector for faster adoption of e-trucks and the long-term action plans towards a zero-emission sector and making India as a global leader in manufacturing and export hub. Mr Ruchir Shukla emphasized the role zero emission truck segment can play in achieving the net-zero emission by 2070 by acting on an immediate basis. The disproportionate 30% emissions by the 2% of medium and heavy-duty vehicles population was highlighted by Ms Divya Sharma. Thus, the sector requires a fast multi-faceted transition to cleaner fuels from the technical providers, government and researchers. The challenges are unique to the sector in India with a significant per cent of upfront overloading which would pose a problem to the battery performance was brought out by Dr Cristiano



DR CRISTIANO FAÇANHA

Director, Drive to Zero, CALSTART

“We need to have an ecosystem approach with clear and ambitious targets supported by stronger regulations, initiatives and incentives.”

Actionable Messages

Message 1 Financial institutions need to support the early adopters of e-HDVs and at a competitive rate.

Message 2 Creation of infrastructure for faster adoption of e-HDVs such as road corridors of zero emission, either providing battery system and charging facilities along the highways, will be critical for the success of e-HDVs.

Message 3 We should set mandates, yearly targets and action plans and should identify corridors to carryout pilot projects for this sector.

Façanha. The benefits of an electric fleet to the environment at large are clearly known and in addition electric vehicles provide a high-driving comfort and with no tail pipe emissions it poses no occupational hazard to workers at warehouse and would increase the efficiency of the logistics sector was highlighted by Dr Anup Bandivadekar, not only less emission contributing to the environment, zero-emission trucks also have significant health benefits to close-contact society like labours, workers, etc. The

learning from the experiments in other parts of the globe was also presented with case studies from the USA, China, Germany, and Finland. The transition to cleaner fuel does not require a choice-based model, rather it could incorporate the hydrogen fuel and battery-based system was highlighted by Mr Clay Stranger. The requirement of dedicated finance is required by providing competitive loans from the banking sector and other financial institutions will facilitate the transition in the market as emphasized by Mr Vinit Srivastava.



MR AMIT LAHOTI

Senior Director and General Manager-Asia, Ball Beverage Packaging

“Environment is filled with mystery and opportunity.”

Dr Anupam Agnihotri did an excellent context setting by highlighting the importance of aluminum for pursuing sustainability in the packaging industry. Aluminum has successfully passed the test across several parameters like resource and energy efficiency, recyclability, light weight, better storage and improved beverage quality in terms of freshness and taste. He mentioned the three very important Es associated in any sustainability goal: Energy, Environment, and Economy. Government of India has taken several policy measures in recent times to help out the industry in its goal of sustainability. The panel discussion started with initial comments with Mr Amit Lahoti. He remarked that growth without incorporating sustainability is not possible and we might end up like countries like China which has seen massive environmental degradation of like Nigeria which has several unfulfilled aspirations despite efforts. Next speaker, Mr Mitesh Pandya, pointed out the need for closed loop recycling in all sectors including aluminum. Mr Ankur Chawla talked about how profit-seeking industries like airlines, cinemas, and hotels that use a lot of plastic wants to move away but is at crossroads regarding making at

EMERGING OPPORTUNITIES TOWARDS SUSTAINABLE PACKAGING SOLUTIONS

Speakers : Dr Anupam Agnihotri, Director, JNARDDC, Ministry of Mines; Mr Amit Lahoti, Senior Director and General Manager-Asia, Ball Beverage Packaging; Mr Mitesh Pandya, AVP-Sustainability and CSR, Vedanta Limited-Aluminum Business; Mr Ankur Chawla, Director, Fabonest Food and Beverages Private. Limited; Mr Rajiv Sangoi, Co-founder, Rio Beverages; Ms Kreena Patel, Associate Director, AB InBev

Actionable Messages

Message 1 Importance of sustainable development is acknowledged across all sectors. Accordingly the packaging industry is not behind in bringing necessary changes to incorporate sustainability into their industry.

Message 2 Aluminum is most sustainable packaging options compared to other available substrates like glass and plastic; due to its infinite recyclability. Aluminum also has several other benefits: light weight, efficient storage, designing, better in terms of beverage safety as the scope of contamination is almost nil.

Message 3 The most important challenge for aluminum penetration in India is the pricing as India is a price sensitive market. Hence the need is for partnerships across industry, facilitation from government and massive awareness generation among consumers

alternative choice due to pricing. Mr Rajiv Sangoi cited with evidence from his own company that usage and acceptance of aluminum cans has increased manifold in that last decade. However, he also emphasized on how economics is the single, major challenge for aluminum cans and in continued presence of cheap single-use plastics may hamper its growth. Hence, the need is to have regulatory single-use plastics laws. Finally Ms Kreena Patel spoke about how sustainability



MS KREENA PATEL

Associate Director, AB InBev

“Importance of moving to sustainable development is no more a choice.”

is indispensable in today's time. The major challenge in the much-needed aluminum penetration is awareness among consumers. Even if consumers want to make sustainable choices, they are unaware of what goes behind production and disposal of individual substrates. Therefore the need to provide information to consumers is a simplistic way. She suggested that any kind of rating system along the lines of the 'Star Labeling Programme' for electronics can be a simple way of communication to the layman.

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