



The Energy and Resources Institute

WORLD SUSTAINABLE DEVELOPMENT SUMMIT

Beyond 2015: People, Planet & Progress



BUSINESS DAY

SUMMIT BULLETIN | DAY 1

October 5–8, 2016 | India Habitat Centre, New Delhi, India

INAUGURAL SESSION

Welcome Address: Mr Ashok Chawla, Chairman, TERI
Theme Setting: Mr R Mukundan, Managing Director, TATA Chemicals Ltd & Chair, TERI CBS Ex-Com; Dr Ajay Mathur, Director-General, TERI
Keynote Address: Mr Erik Solheim, UNEP Executive Director and Under secretary General of the United Nations
Inaugural Address: Shri Jayant Sinha, Minister of State for Civil Aviation, Government of India
Vote of Thanks: Dr (Ms) Annapurna Vancheswaran, Senior Director, TERI



Mr Ashok Chawla, while setting the theme, said that though agenda for development is set by the government and political leadership, the battle in the trench will have to be fought by business and industry. He added that technical knowledge of sustainable development along with collaboration of private organisations/institutes is necessary. Mr R Mukundan suggested that both civil societies & industries should work together to achieve sustainable development goals. Dr Ajay Mathur highlighted the need of action in the direction of sustainable development. Mr Erik Solheim spoke about cleaning of River Ganga and suggested conversion of this activity into a business opportunity. He assured that businesses will be top priority of the United Nations while seeking solutions on technologies, outreach, and finances. Shri Jayant Sinha identified three big challenges

on the road to sustainability—behavioural change with innovation; appropriate regulation; & sufficient capital. He asserted that businesses will be the prime drivers and the government will ensure their progress. It's the duty of the government to create policies and generate capital in order to bring behavioural and innovative change in society.

Dr (Ms) Annapurna Vancheswaran, delivering the vote of thanks, said that India has shown global leadership and vision and elaborated that this translates to introducing waste management and disposal solutions, generating carbon sink, reducing carbon intensity, etc. She shared two major challenges in the form of identifying action on how business sectors engage and expand and how TERI creates benchmarks for the private sector.



SHRI JAYANT SINHA

Minister of State for Civil Aviation, Government of India

“Swachh Bharat Abhiyan is not about making India free of open defecation by creating toilets but is about bringing a radical change in the behaviour.”

GREENOVATION 2016 EXHIBITION INAUGURATED AT WSDS 2016, INDIA HABITAT CENTRE

Shri Jayant Sinha, Hon'ble Minister of State for Civil Aviation, Government of India, accompanied by Dr Ajay Mathur, Director General, TERI, and Mr Tomasz Kozolowski, Ambassador of the European Union, inaugurated the Greenovation 2016 exhibition

followed by the walkthrough of the exhibition at the World Sustainable Development Summit 2016 at India Habitat Centre. The exhibitors include Asian Development Bank, Energy Efficiency Services Limited, Indian Renewable Energy Development

Agency, European Union, Solar Energy Corporation of India, Dalum Papir and Embassy of Poland. The highlights of the Greenovation 2016 exhibition were BMW showcase of its state-of-the-art, all electric i8 car and 'EESL ILEDTHEWAY' selfie station.

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THEMATIC TRACKS @ INDIA HABITAT CENTRE

Climate Resilient Agriculture (World Bank)

Chair: Dr Madhur Gautam, Lead Economist, The World Bank

Panelists: Dr Pramod Aggarwal, Regional Program Leader, Climate Change, Agriculture and Food Security of CGIAR – CCAFF Programme; Prof. N H Ravidranath, Professor, Indian Institute of Science (IISc); Dr Vibha Dhawan, Distinguished Fellow and Senior Director, The Energy and Resources Institute (TERI); Mr David Butler, Director, Sustainable Food Systems Ireland (SFS); Dr Tushaar Shah, Senior Fellow, International Water Management Institute (IWMI); Dr M R Garg, General Manager—Animal Nutrition Group, National Dairy Development Board (NDDB); Ms Priti Kumar, Senior Environmental Specialist, The World Bank; Mr Shyam Khadka, FAO Representative in India, Food and Agriculture Organization of the United Nations (FAO); Dr P K Joshi, Director, International Food Policy Research Institute (IFPRI); Dr Ajay Mathur, Director-General, The Energy and Resources Institute (TERI)



mechanism, and CSA enablers is required. Tools such as genomic selection in livestock and crops, sub-soil irrigation, and watershed management can help accelerate the speed of adaptation. Climate smart solar pumps can be a viable drought coping tool. Climate change solutions need to be income-centric; but sustainability is significant. 🌍

Climate change is a reality, and agriculture contributes to 23% of the total greenhouse gas emissions. Various Climate Smart

Agriculture (CSA) strategies have been initiated worldwide. A comprehensive approach including partnerships, knowledge generation, incentive

EU–India Collaboration for Implementation of NDCs

Moderator: Mr Ashish Chaturvedi, Sr Fellow, Delphi and Fellow, University of Sussex

Panelists: Ms Henrietta Faergmann, Delegation of the EU to India; Prof. Ambuj Sagar, IIT-Delhi, and Senior Policy Advisor—CCA & Climate Finance Readiness at GIZ India; Dr Ritu Mathur, TERI; Dr Keywan Riahi, IIASA; Ms Aayushi Awasthy, TERI



India on showing leadership for ratifying the Paris Agreement and pushing the climate agenda globally, also through the International

adoptions, and demonstrating implementation through business models. Kirtiman Awasthi focussed on adaptation and gave example of a project involving locally scalable solutions for India. He also emphasised on loss and damage as a part of the Paris Agreement and mainstreaming gender into adaptation. Dr Ritu Mathur emphasised on India's development priorities and the urgent need to decouple energy and emissions. Dr Keywan Riahi highlighted the importance of incentivising consumer behaviour towards energy-efficient solutions. 🌍

The session outlined the areas of cooperation between EU and India, centred in the energy sector. Henrietta Faergmann congratulated

Solar Alliance. Prof. Ambuj Sagar outlined areas of cooperation, such as product development, early demonstration and

Valuation of Energy Costs in the Indian Context

Participating Organisations: IFC, Valluri Technology Accelerator, Vedanta Ltd, TATA Chemicals, TATA Cleantech, TATA Steel Ltd, Cairn India, Shree Cement Ltd, Jain Irrigation Ltd, YES Bank Ltd, Danfoss India, WRI India, CDP India, Wipro Ltd, Dalmia Cement (Bharat) Ltd, Mahindra Group, GAIL (India) Ltd



pricing. The voluntary group, Carbon Pricing Leadership Coalition (CPLC), collectively working towards internalising the carbon costs in business operations and effectively combating climate change, was described. The representatives present put forward their innovative tools and

target policies for effectively mitigating carbon emissions. The session also aimed at highlighting the investment and financing challenges for climate change adaptation. Representatives from financial institutions and development banks expressed how their innovative financial tools are channelling funds towards cleaner and efficient energy. It was identified that the biggest challenge is to meet the demand for infrastructural funds by 2030s in the growing purview of economic acceleration, population growth, and increased standard of living in developing economies. 🌍

The event brought together industry leaders to share their experiences and insights in arriving at internal carbon

Mainstreaming SDG Goal No. 7 — Affordable and Clean Energy

Moderator: Dr Jaco Cilliers, Country Director, United Nations Development Programme

Panelists: Ms Rachel Kyte, CEO and Special Representative, Sustainable Energy for All; Dr Arun Kumar Verma, Joint Secretary, Ministry of Power, Government of India; Mr Martin Hiller, Director General, Renewable Energy and Energy Efficiency Partnership, Austria; Dr P K Anand, Sr. Consultant, NITI Aayog, Government of India; Dr Nagesh Kumar, Head, UN-ESCAP South and South-West Asia Office; Dr Simon Lucas, Team Leader, Climate, Urban and Energy Team, UK Department for International Development (DfID), India; Mr Debajit Palit, Associate Director, The Energy and Resources Institute, New Delhi

India presents immense opportunities to scale up initiatives and efforts towards clean energy access. India's ratification of the Paris Agreement underscores its climate leadership and is a remarkable step in international diplomacy.



Regional cooperation can significantly contribute to sustainable energy transitions. Similarly, proper monitoring of progress, challenges, and failures can avoid loss in evolution of initiatives and build consciousness for the development process.

Private sector finance is equally important as public sector finance for achievement of SDG7. Innovation, investment, incentives, institution are key drivers. Affordability is one key challenge to increase the uptake of available electricity. Also, clean cooking efforts can be augmented by utilising existing and new power infrastructures. 🌍

MEDIA COLLOQUIUM

GLOBAL COOPERATION DRIVING ENVIRONMENT EFFORTS

International cooperation is at work in rejuvenating the River Ganga. Cesare Onestini, Deputy Head of European Union Delegation, highlighted global interconnectivity in efforts to save the environment. EU–India water partnership is bringing together a wide range of stakeholders to cooperate on water law and governance; promotion of research, innovation; and exchange of business solutions, he said at the colloquium that brought together 20 journalists from Afghanistan, Bangladesh, Cameroon, India, Nepal, and Sri Lanka.

'Developing countries did not cause climate change, but they will drive the change', said Rachel Kyte, Special Representative of the United Nations Secretary General and CEO, SE4All. With the Paris Agreement coming to force, India has an opportunity to capitalise on the push for energy-efficient automobiles and electrical appliances, she added. TERI experts also briefed the journalists in an interactive session on 'The Mission Today: Rural Development and Poverty Reduction'. Vijay Kumar said that to ensure development, we have to look at how to plug the gap between policies and the beneficiaries. Suneel Pandey said that people should have a stake in the infrastructure being provided to them. 🌍



Linking Climate Risks to Policy and Practice – Sharing Experiences and Approaches for Research Uptake (CARIAA – India Country Engagement)

Moderators: Dr Ajay Mathur, Director-General, TERI; Dr Anindya Chatterjee, Regional Director, Asia, International Development Research Centre (IDRC)

Speakers: Shri P D Rai, Member of Parliament, Sikkim; Prof. S P Singh, Former Advisor, State Planning Commission, Government of Uttarakhand; Dr Nisha Mendiratta, Director, Climate Change Programme, Department of Science and Technology, Government of India; Dr Savita Anand, Former Joint Secretary, Ministry of Rural Development;

The thematic track, as an initiator towards the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA) India country engagement group, aimed at enhancing the science-policy interface in the light of climate risks that are being faced. An overarching theme of the event was set through a presentation that spoke about the objectives and goals of the various CARIAA consortiums working in varied hotspots across India.

The panellists' talks and the discussion that followed highlighted the means to and bottlenecks in achieving an effective science-policy interface. It was acknowledged by the panel that climate risks being faced in the hotspots in these regions are varied and a robust scientific understanding is required. Issues ranging from political will to individual capacities were widely



spoken and discussed. The panel discussion also highlighted the need to realise, and the challenge in understanding the potentiality of an adaptation option to be up-scaled with an ultimate goal of building climate resilience. It was also highlighted how the central government is trying to build capacities by providing technical support to state agencies to enable effective action against the perils of climate change. 🌍



Transitioning to More Efficient HVAC System with Low GWP Refrigerants

Welcome Remarks: Dr Ajay Mathur, Director General, TERI

Keynote Address: Mr R R Rashmi, Special Secretary, MoEFCC

Moderator: Mr Rajendra Shende, Chairman, Terre Policy and Research Center, Former Director UNEP

Speakers: Mr Marco Gonzalez, Former Executive Secretary, Montreal Protocol; Ms Suelly Carvalho, Former Director, United Nations Development Programme (UNDP); Mr Randal Newton, VP Enterprise Engineering, Ingersoll Rand; Dr Stephen Anderson, Director – Research, Institute for Governance & Sustainability (IGSD); Mr Saurabh Diddi, Energy Economist, Bureau of Energy Efficiency; Ms Anjali Jaiswal, Director, India Initiative, NRDC; Mr Bhaskar Deol, Consultant, NRDC

The speakers and lead discussants highlighted that there should be flexibility in the choice of technology. A 10–15 year lag in phase out between developed and developing countries will allow resolution of patent-related barriers and reduce costs. Patent costs should be taken care of through the multilateral fund (MLF). To enable earlier transitions, reliable options for alternatives to choose from must be made available in the market at affordable costs. They also emphasised that energy efficiency gains must be rewarded. Significantly, energy efficiency gains are an important consideration while considering transitions to low GWP HFC alternatives. Energy efficiency should be rewarded through the MLF, in addition to clarifying the framework



and modalities for disbursing new funds. The speakers also highlighted that R&D should be encouraged because substantial investments in R&D will allow the development of alternate GWP refrigerant gases, and give countries the choice of technology independent of patents. Global earmarking of resources is needed to foster R&D in developing countries. 🌍



Using Multi-Stakeholder Simulations to Examine the Impacts of Food Policy Choices in India and Asia

Chair: Dr Prodipto Ghosh, Distinguished Fellow, TERI

Opening Remarks: Ambassador Ajai Malhotra, Distinguished Fellow & Senior Advisor, TERI

Speakers: Mr Shyam Khadka, FAO Representative in India, New Delhi; Prof. Y K Alagh, Chancellor, Central University of Gujarat; and Professor Emeritus, Sardar Patel Institute of Economic and Social Research, Ahmedabad.; Prof. R B Singh, Chancellor, Central Agricultural University, Imphal; and Past President National Academy for Agricultural Sciences; Dr Partha Mukhopadhyay, Senior Fellow, Centre for Policy Research, New Delhi; Mr Bal Krishan Anand, General Manager, GOSCA South Asia, Cargill



the food chain reaction game conducted in November 2015, in the US, where 65 global leaders and policymakers confronted simulated crises, flash points, and trade-offs that disrupt global food security between 2020 and 2030. Primary objective of the exercise, involving multi-stakeholders, is to help high-level decision makers have better understanding of the interconnectedness of the local and global

food systems. Key outcome was that countries need to address three critical gaps: knowledge, productivity, and co-operation. Another critical gap that emerged and needed immediate attention is policy-induced inequality gap.

The primary benefit of the simulation is that it shows the direction of discontinuities and similarities that is relevant for global policy making. One of the core learnings that emerged from the food chain reaction simulation was diversity of viewpoints within specific groupings that need to be considered during the game design.

The need to focus on infrastructure development to control food grains movement, storage, and wastage was emphasised. Also, role of private sector was deemed critical. 🌍

The introductory remark discussed issues such as climate change, rapid urbanisation, poverty, etc. A presentation showed



Mainstreaming Biodiversity for Responsible Business

Welcome Remarks: Dr S K Sarkar, Director, Water Resources and Forestry Division, TERI;

Special Remarks: Mr R Mukundan, Managing Director, TATA Chemicals

Special Address: Dr J R Bhatt, Advisor, Ministry of Environment, Forest and Climate Change

Panellists: Dr V P Singh, World Agroforestry Centre, South Asia Programme; Dr Hishmi Jamil Husain, Environment Superintendent, Rio Tinto; Mr Nitin Sukh, Group Executive Vice President, YES Institute; Mr Ashok Yadav, Manager, Agriculture Insurance Company of India; Dr N B Brindavanam, Dabur India Ltd.



building the capacity of businesses and towards on-ground solutions. All of these initiatives are oriented at educating, advising, and providing solutions to the industries to mainstream sustainability in their operations and reduce as

well as mitigate impacts on ecosystems. These efforts need to be consolidated nationally forming a synergetic impact. To build this synergy, this session brought stakeholders together and deliberated upon the issues of sustainability that vary with respect to the type of business and hence, defining the sustainability and developing solutions to mitigate impacts are needed. The panellists also discussed that investing in biodiversity and ecosystem services is futuristic and ensures multiple benefit flow in favour of business and local livelihoods. The deliberations brought out the challenges and opportunities for responsible business to mainstream biodiversity conservation in India. 🌍

Prominent programmes, such as TERI Council for Business Sustainability and Leaders for Nature programme of IUCN work towards

A series of six 90-second presentations on energy-efficient and sustainable solutions being implemented currently were presented by:

- Ecolibrium energy presentation was on the monitoring system 'SmartSense', Big Data Energy analytics platform that provides energy intelligence to commercial and industrial consumers and utilities were discussed. The insights increase operational efficiency by optimising energy usage and improve asset utilisation by preventive maintenance to predictive maintenance.
- EcoZen Solutions showed a video the on company's pioneering and innovative micro cold storage solution, 'Ecofrost'—a solar-powered cold storage system.
- Flybird innovations' presentation focussed on improving the livelihood of farmers, improving the crop yield and crop production, saving water and electricity, integrating affordable technology for

farmers, irrigation, and application of fertilizers. Since irrigation at right time and in right quantity is essential, the innovations focus on automating these processes.

- The Biogas Plant Services Division of GPS Renewables focussed on R&D to enable solution for waste disposal management. They reiterated their commitment in building customer-centric innovative products in the waste-to-energy space.
- GramPower provides the industry's most integrated smart metering solution at the lowest cost to organise and manage power infrastructure intelligently.
- TESSOL (Thermal energy solutions) showcased their award-winning cold storage and transportation solutions based on 'Thermal Energy Storage' technology, developed and patented by TESSOL.

PLENARY SESSION 1: Encouraging Businesses to Take the Lead in Poverty Reduction and Achieving SDGs

Moderator: Mr Nitin Desai, Former Under-Secretary-General for Economic and Social Affairs, UN & Distinguished Fellow, TERI

Panelists: Mr Krishan Dhawan, CEO, Shakti Sustainable Energy Foundation; Mr Amit Shah, Senior President and Country Head, Corporate Strategy and Communications, YES BANK; and Executive Director—YES Institute; Mr Pau Abello, Managing Director, Roca Bathroom Products Pvt Ltd; Mr Anirban Ghosh, Chief Sustainability Officer—Mahindra Group, Mahindra and Mahindra Ltd; Mr Jaco Cilliers, Country Director, UNDP in India

The discussion started with importance of reputational issue for the corporates to contribute to the SDGs by taking them to the board-room discussions. It is time for companies to think beyond CSR and consider

how to make investments more systemic to contribute to SDGs. Companies that take the lead will benefit from being early movers. For example, the automobile industry is now being forced to change to better fuels and efficient engines at a pace faster than they are comfortable with.

Banks too need to look at their role as a catalyst. For example, YES Bank decided to do responsible banking in thought and action. India's socio-economic environment is entirely different and needs to adopt some of the global issues for domestic implementation.

Business opportunity is available in all SDGs. Dealing with issues related to water would mean dealing with a large number of issues in SDGs.

India has a fabulous programme called the Integrated Watershed Management Programme. The programme has the potential to increase income by 2%–2.5% in a period of five years.



Active support of business is essential for sustainable growth and development of all and it can't come through policies alone; it has to come from business seeing its value. Business cannot profit on a dead planet making it essential for businesses to contribute to SDGs.

Mindset was identified as an integral issue. The example of dual flush system is a case in point.

PLENARY SESSION 2: Accelerating the Transition to Low Carbon Industries

Moderator: Amb. Ajai Malhotra, TERI

Panelists: Amb. Shyam Saran, Chairman, Research and Information System for Developing Countries; Mr Randal Newton, Vice President-Enterprise engineering, Ingersoll Rand; Mr Rajib K Mishra, Director, Marketing and Business Development, PTC India Ltd; Mr Yongping Zai, Director, Energy Division, South Asia Regional Department, Asian Development Bank

Amb. Saran spoke about the importance of exchange of knowledge and peer learning to solve the issues of climate change and sustainable business. He spoke about the three key elements which require attention—risks associated with climate change, change required

to work towards a low carbon pathway, and the issue of internalising externalities. He drew a parallel between the 2008 financial crisis and the emerging climate crisis. Mr Mishra stressed on how there should be a clear financial viability for businesses to tackle climate change. The Government of India has taken a bold step in setting up a target of 175 GW of renewable energy in the national grid by 2020 and to meet the target, there should be a business case where the renewable energy production reaches grid parity. Mr Randal Newton shared that energy efficiency is a key factor in their production process and they aim to reduce the GHG emission from their products by 50% by 2030 and reduce the same from their office by 2035. Three important factors leading to reduced GHG emissions are



correct usage, control, and proper maintenance. Mr Yongping Zai shared that a major part of ADB's investments are into green investments and his direct lending in the renewable energy sector is more than USD 2.5 billion. Recently, the ADB has approved a lending of USD 1 billion to EESL for energy-efficient street lighting.

VALEDICTORY SESSION

Chair: Dr Ajay Mathur, Director-General, TERI

Special Address: Ms Rachel Kyte, CEP, Sustainable Energy for All (SE4All) & Special Representative of the UN Secretary-General for Sustainable Energy for All; Ms Preeti Sinha, Senior President & Global Convenor, YES Institute at YES BANK Ltd

Valedictory Address: Shri Piyush Goyal, Minister of State (IC) for Power, Coal and New & Renewable Energy, Government of India

Vote of Thanks: Dr (Ms) Annapurna Vancheswaran, Senior Director, TERI

Dr Mathur welcomed the dignitaries on the panel. Ms Rachel Kyte said that energy is a problem common to all living beings on the planet; hence, solutions for the same should be regime-based. Renewable energy mix is a big

part of the solution. In 2016, 2.9 million people, mainly women, will damage their lungs to provide food to a household. It is a health and economic hazard as the opportunity cost for these women to earn a living is lost because of the time they spend in collecting firewood. We need green energy to be competitive in a world that is shaped by climate change. Ms Preeti Sinha shared about the promotion of 'green capitalism' by the YES BANK Group. She spoke about how financial inclusion is the key to YES Bank and about how the platforms accessible through smart phones are getting the urban poor close to financial inclusion. The agenda that YES bank is working towards is focussed on the market reforms to embrace sustainable development. Shri Piyush



Goyal shared that there is no contradiction between sustainable development and economic development. He added that sustainability cannot work in silos; it needs to be integrated into the organisation.