



ATTAINING ENERGY, WATER, AND FOOD SECURITY FOR ALL

14th DELHI SUSTAINABLE DEVELOPMENT SUMMIT

6-8 February 2014
Taj Palace Hotel, New Delhi, India

DSDS Curtain-raiser
High Level Corporate Dialogue
February 5, 2014

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PREFACE

The 14th edition of the Delhi Sustainable Development Summit was convened under the aegis of '*Attaining Energy, Water, and Food Security for All*' at the Taj Palace Hotel, New Delhi, India during February 6–8, 2014. The curtain raiser to the Summit, the High Level Corporate Dialogue was hosted on 5 February, 2014 under the theme '*How will Businesses Lead India's Energy, Water, and Food Security?*'

The chosen theme was apt, given that the challenges the world is facing in respect of energy, water, and food security are increasingly becoming interlinked. Consequently, strategies for tackling one or the other aspect of this integrated challenge would require consideration of comprehensive and critical aspects of managing supply and demand for energy, water, and food in a manner that ensures security in each of these. The world today has reached a population of seven billion, which in a few decades is likely to increase by another two billion, according to most projections. It is also expected that despite the current economic problems that several countries and societies are facing, incomes will grow, particularly, in some of the largest and most populous countries in the world. All of this would translate into greater demand for all three inputs which are at the core of human activities.

DSDS 2014 discussions and deliberations focused on the importance of energy, water, and food security and the nexus between them. Discussions at the Summit addressed security of energy, water, and food as inter-related as well as independent entities.

Heads of State and Government, corporate, media, and thought leaders, and members of the civil society at DSDS 2014 expressed their views and insightful thoughts through the following plenary sessions:

- *The Demographic Challenge*
- *Ensuring and Expanding Access to Energy, Water, and Food*
- *Re-thinking Development*
- *The Role of Multi-lateral Development Banks (MDBs) in Attaining Energy, Water, and Food Security*
- *Dealing with the Energy, Water, and Food Security Challenges in Asia and Africa*
- *The Energy, Water, Food Triangle*
- *Communicating for Sustainability*
- *Dealing with the Impacts of Climate Change*
- *Gender: The Core Issue in Sustainable Development*

The 2014 edition of the Summit featured twelve Thematic Tracks, a concept introduced at the 2013 edition of the Summit. These parallel break away sessions on myriad aspects of the overarching theme of the Summit allowed for discussions of considerable depth and detail and drew favourable comment from all present. The Tracks were well-attended by delegates at the Summit as well as special invitees, with robust and interactive discussions. The Thematic Tracks provided different perspectives as well as addressed several specific issues within the energy, water, and food security nexus. A complete list of the Thematic Tracks, with brief reports on their proceedings, is included in this Summary.

At DSDS 2014, over 40 countries were represented by their political heads, lead thinkers, and delegates, with a total of over 1,000 delegates attending the plenary sessions and thematic tracks, over the four days of the Summit. A string of Special Events were also hosted on the side-lines of the Summit.

The 2014 Summit also had on board Media Partners CNN-IBN — India's leading English News Channel; *The Week* — India's largest selling news magazine; *Sci Dev Network* — world's leading destination for cutting-edge news and thoughtful

analysis on science, technology, and global development; *OneWorld South Asia* — prominent social and sustainable development knowledge portal; and *Infraline Energy* — India's premier research, consultancy, and solution provider.

The evening prior to the Summit (February 5, 2014) engaged leaders and eminent personalities from the worlds of business and politics at the High Level Corporate Dialogue themed '*How will Businesses Lead India's Energy, Water, and Food Security?*'. The Summit engaged the captains of industry in lively discussions that will encourage action on part of the business community towards developing sustainable business practices.

DAY 1: FEBRUARY 6, 2014

Inaugural Session



Dignitaries lighting the lamp at the Inaugural Session. L–R: Mr Salman Khurshid, Hon'ble Minister of External Affairs, Government of India; HE Mr Danny Faure, Vice President, Seychelles; Mr Kofi Annan, Chairman, Kofi Annan Foundation & Former Secretary-General, United Nations; Dr Annapurna Vancheswaran, Director, Sustainable Development Outreach Division, The Energy and Resources Institute (TERI); Dr Farooq Abdullah, Hon'ble Minister of New and Renewable Energy, Government of India; Dr R K Pachauri, Director-General, TERI.

The 14th Delhi Sustainable Development Summit was inaugurated by the Hon'ble Minister of External Affairs, Government of India, **Mr Salman Khurshid**, in the presence of **HE Mr Danny Faure**, Vice President, Seychelles; **Dr Farooq Abdullah**, Hon'ble Minister of New and Renewable Energy, Government of India; **Mr Kofi Annan**, Chairman, Kofi Annan Foundation and Former Secretary-General, United Nations; **Dr R K Pachauri**, Director-General, The Energy and Resources Institute (TERI); and **Dr Annapurna Vancheswaran**, Director, Sustainable Development Outreach Division, The Energy and Resources Institute (TERI).

The Inaugural Session began with a lamp-lighting ceremony, followed by a welcome address by Dr Pachauri, who highlighted the need to combat poverty and climate change to attain energy, food, and water security for all. He stressed that the focus has to be on key challenges and we should not let everything slip into the 'business-as-usual' mode.

In his special address, Dr Farooq Abdullah stated that the need of the hour is to work together to counter the ill-effects of humanity on the planet.

HE Mr Danny Faure talked about the trials and tribulations of Small Island States. Referring to them as the custodians of the oceans, he said that oceans have been marginalized, and stressed on the 'Blue Economy' concept which offers a unique opportunity to incorporate oceans in the development agenda for positive results. He called for partnerships and joint efforts to stop the widespread degradation of oceans.

Mr Kofi Annan emphasized the need for coherent global policies that place sustainability at the heart of the development framework. He elaborated on the lack of availability of basic amenities across major population sectors in India and Africa. Mr Annan also highlighted the fact that even though we are collectively better off than previous generations, we continue to exploit finite resources at an alarming rate, almost as if there is no tomorrow. He stressed on four main points: (i) Climate change and the need for countries to agree to a globally binding agreement by 2015, irrespective of their stage of development; (ii) Sustainability must be at the heart of a global development framework; (iii) Policy coherence among nations with sustainability at the core of national policy making; and (iv) Need to leverage the full potential of every human being by reducing gender inequality. He also stated that the biggest challenge is to switch to a green economy with the help of integrated policy-making from the existing unhealthy regime of exploiting resources.

Mr Salman Khurshid emphasized that sustainable development was not possible without attaining energy, food, and water security for all and collaborative efforts amongst all stakeholders can help us in achieving this development. In fact, no global effort to live in peace together is complete without development that is sustainable by itself and that also sustains over time. He summed up by saying that conservation and preservation will come only if we stop destruction.

Leadership Panel: The Demographic Challenge



L–R: HE Mr Göran Persson; HE Dr Bharrat Jagdeo; Mr Nitin Desai; HE Ms Tarja Halonen; and Lord John Prescott.

Chair: Mr Nitin Desai, Distinguished Fellow, The Energy and Resources Institute (TERI)

Panelists:

- **HE Ms Tarja Halonen**, Former President, Finland
- **HE Dr Bharrat Jagdeo**, Former President, Guyana
- **HE Mr Göran Persson**, Former Prime Minister, Sweden
- **Lord John Prescott**, Former Deputy Prime Minister and Member of Parliament, House of Lords, UK

The chair, Mr Nitin Desai, opened the session by posing the question, “How do we address the demographic challenge, both in terms of number and lifestyle?” Panelists discussed the issue vibrantly from different angles.

HE Ms Tarja Halonen stressed on equality between men and women and the need to educate women in order to improve the lives of mothers and children, and move towards a balanced population. HE Dr Bharrat Jagdeo opined that even countries that do not face demographic challenges themselves should strive to solve this problem because demographic challenges in Asia can affect demand and supply globally. He urged everyone to work towards a global framework with the help of a system of incentives, allowing the use of breakthrough technologies. HE Mr Göran Persson said that negotiations in the UN in favour of climate policies have not been easy, and there is thus a need to solve the problem directly, without waiting for the UN. He also

expressed concern over the fact that countries with greying (ageing) populations are turning into introvert societies. This might lead to friction in North–South solidarity. Lord John Prescott mentioned that businesses will always focus on the profit margin, which does not help in achieving sustainability. He claimed that governance is the real issue, and that the market, on its own, cannot come to any equitable solution.

The response of the panel to questions on migration and labour issues had HE Ms Tarja Halonen saying that everyone has the right to the necessities of life — energy, water, and food — where they are; there should not be a need to migrate to avail such necessities.

Mr Desai concluded the session by saying that the challenge is and will be to decentralize the concentration of resources held with the corporations.

Keynote Address: The Role of Water Management in Addressing the Water–Food–Energy Nexus



L–R: Mr Takehiko Nakao and Mr Howard Bamsey

Chair: Mr Howard Bamsey, Director General, Global Green Growth Institute

Keynote Address: Mr Takehiko Nakao, President, Asian Development Bank

“.... Food wasted is also water wasted.”

The Keynote Address highlighted the fact that water security dissects boundaries and is one of the most complex issues faced by mankind. Studies by the Asian Development Bank (ADB) have found that 36 out of 48 countries in the Asia Pacific region show poor water security, including China and India. It shows that building new dams is not an option for many rivers as they are already fully utilized. A total of 80 per cent of all the water is used for agriculture; therefore water shortage leads to food shortage. Water, energy, and food are intricately linked.

Ministerial Session 1: Ensuring and Expanding Access to Energy, Water, and Food



L–R: HE Mr Belete Tafere Desta; HE Mr Marcin Korolec; HRH Prince Mostapha Zaher; Ambassador C Dasgupta; HE Mr Juhan Parts; Mr Heherson Alvarez; Hon'ble Prof. Silas Lwakabamba; and Mr John Bryson

Chair: **Ambassador C Dasgupta**, Distinguished Fellow, The Energy and Resources Institute (TERI)

Panelists:

- **HRH Prince Mostapha Zaher**, Director-General, National Environmental Protection Agency, Afghanistan
- **HE Mr Juhan Parts**, Minister of Economic Affairs and Communications, Estonia
- **HE Mr Belete Tafere Desta**, Minister of Environment and Forest, Ethiopia
- **Mr Heherson Alvarez**, Commissioner, Climate Change Commission, Philippines
- **HE Mr Marcin Korolec**, Secretary of State, Government Plenipotentiary for Climate Policy & President of COP19/CMP9, Poland
- **Hon'ble Prof. Silas Lwakabamba**, Minister of Infrastructure, Rwanda
- **Rt Hon'ble Gregory Barker**, Minister of State for Energy and Climate Change, UK

- **Mr John Bryson**, Head, Bryson Climate Initiative, Woodrow Wilson International Center for Scholars & Former Secretary of Commerce, USA

The discussion during this session encompassed viewpoints that were highly diversified in terms of financial strength and problems faced. On one hand, we had Mr John Bryson from USA presenting the outlook of his country, while on the other hand we had Hon'ble Prof. Silas Lwakabamba highlighting the problems in Rwanda, and how his fellow countrymen are taking initiatives to resolve various issues, such as malnourishment and vast infrastructure gaps. The session presented a complementary picture, with developing countries requiring collaboration and support to resolve the issues of access to energy, water, and food, as well as developed nations that pledged support to help resolve these issues globally. HRH Prince Mostapha Zaher spoke of the need for a realistic political solution at the national, regional, and global levels, and urged everyone to find a solution to the water problem, which is becoming a transboundary issue. Stress was also laid upon fair and equitable access to energy, food, and water, and the urgent necessity of corrective action. The need for regional collaboration was underlined, and the trade-offs of poverty reduction were also discussed. Promotion of unconventional sources of energy was emphasized, noting that though green development has a huge burden of initial cost, it eventually gives 30 per cent more returns in the form of savings within the first few years. HE Mr Juhan Parts said that Estonia is moving towards non-conventional resources such as oil and shale gas, and said that comprehensive use of available technology is a must. HE Mr Belete Tafere Desta of Ethiopia said that the country's economic development is low and it is trying to become carbon neutral. Mr Heherson Alvarez observed that Philippines is often at the mercy of cyclones, though it has ample resources and is the second largest user of geo-thermal power. Policy-makers, however, need to shape up policy that reduces the use of fossil fuels. HE Mr Marcin Korolec emphasized the importance of sustainable resource consumption and the achievements of the Warsaw convention COP-19. Rt Hon'ble Gregory Barker spoke of the need for collective efforts towards sustainable development and green modelling in business.

Concluding the session, Mr Dasgupta said that resource efficiency held the key to equitable distribution of water, energy, and food and recalled Puma and Unilever as being the outliers in the business environment. He informed the audience that "90 companies in the world are responsible for 2/3rd of all man-made emissions"; therefore, climate change issues must be looked at through a corporate lens. He said that change

in corporate behaviour cannot happen via government action or by citizens alone, but investors are capable of bringing about change.

Keynote Address: *Sustainable Transformation of Human Society*



L–R: Dr Fatima Denton and Dr Yuan Tseh Lee

Chair: Dr Fatima Denton, Officer In-Charge, African Climate Policy Center, Special Initiatives Division, United Nations Economic Commission for Africa (UNECA)

Keynote Address: Dr Yuan Tseh Lee, Nobel Laureate and President, International Council for Science

“Knowledge sharing is required in this global society.”

The session highlighted the increasing consumption of natural resources by the human race. People with access to resources have a tendency to consume more; though some can be replenished in the long term. If this trend continues, it will not be long when this planet will be unable to sustain human life, let alone human prosperity. The solution is transformation to a healthy planet, with growth that is limited, qualitative, and justified.

Re-thinking Development



L–R: Dr Pradeep K Khosla; Mr Hideaki Domichi; Dr Kandeh K Yumkella; Dr Ajay Mathur; Mr Achim Steiner; Dr Ines Dombrowsky; Prof. Pavel Kabat; and Prof. Luigi Paganetto

Chair: Dr Ajay Mathur, Director-General, Bureau of Energy Efficiency, Government of India

Keynote Addresses:

- **Mr Achim Steiner**, Executive Director, United Nations Environment Programme (UNEP) & UN Under-Secretary-General
- **Dr Kandeh K Yumkella**, Special Representative of the UN Secretary-General for Sustainable Energy for All & Chief Executive Officer of the Sustainable Energy for All Initiative

Panelists:

- **Dr Ines Dombrowsky**, Head of Environment and Resource Policy, German Development Institute
- **Mr Hideaki Domichi**, Senior Vice President, Japan International Cooperation Agency (JICA)
- **Prof. Pavel Kabat**, Director General & CEO, International Institute for Applied Systems Analysis (IIASA)
- **Dr Pradeep K Khosla**, Chancellor, University of California, San Diego
- **Prof. Luigi Paganetto**, President, Economics Foundation, University of Rome Tor Vergata

Mr Achim Steiner opened the discussion, addressing geo-political dynamism, green economy, and the two core goals of sustainable development, namely, universality and integration. Mr Steiner suggested recalibrating our economies, goods, values, and services in order to achieve sustainable development. Dr Yumkella highlighted the need for sustainable consumption and emphasized the creation of partnerships with the help

of his three coalition theory: to end energy poverty, double the share of renewable energy in the global energy mix, and to increase energy efficiency. Dr Ines Dombrowsky highlighted the need to jointly explore green economies, of combining goals and targets to achieve sustainable development across all sectors. Mr Domichi stated that India can be a model case for other nations for sustainable development. Prof. Kabat highlighted that direct funding is required for innovation in sustainability. Dr Khosla stressed that each country should take responsibility for investing in great research within the country.

How Can Businesses Help Attain Energy, Water, and Food Security?



L–R: Mr Onno Rühl; Dr Zubin Varghese; Ms Tomoyo Nonaka; Mr Vikram Singh Mehta; Mr John A Beed; Mr Assaad Razzouk; and Dr Shiv Someshwar

Chair: Mr Vikram Singh Mehta, Chairman, Brookings India

Panelists:

- **Mr John A Beed**, Mission Director, USAID India
- **Ms Tomoyo Nonaka**, Chairperson, NPO Gaia Initiative
- **Mr Assaad Razzouk**, Group Chief Executive Officer, Sindicatum Sustainable Resources
- **Mr Onno Rühl**, Country Director, India, The World Bank
- **Dr Shiv Someshwar**, Director, Climate Policy, Center on Globalization and Sustainable Development, Earth Institute, Columbia University & Senior Advisor, UN Sustainable Development Solutions Network
- **Dr Zubin Varghese**, Senior Director, Innovation and Advanced Engineering, Ingersoll Rand

Mr Vikram Singh Mehta opened the session by stating its importance for the business sector. He said that businesses have to question themselves about their practices, about having a holistic

outlook, and understanding externalities. Dr Zubin Varghese spoke about how businesses can offer technology and services, but to bring the same technology to different areas will take a lot of collaboration from governments and NGOs. Dr Shiv Someshwar pointed out that energy, water, and food have some common aspects. They are all subject to a diversity of risks, face the same agro-economic and social adversities, and are determined by cross-scale interactions. They are capital-intensive, long-term efforts in terms of measurable outputs. This high level of uncertainty due to higher risk is tough to handle for businesses. Hence, businesses will have to be innovative, and innovation means partnership and collaboration. Mr Assaad Razzouk talked about our failure to find a solution to our top-down approach, saying that it is upto the civil society to effect a fundamental change. He added that 27 per cent land in India is severely affected by climate change-related problems, yet we spend billions of dollars on fossil fuel subsidy. He also spoke on how climate change is increasingly becoming a human rights' issue. Mr John Beed spoke of how growth really comes from the private sector and called businesses the actors and drivers of economy. Citing the example of clean water which is needed by citizens as well as by beverage companies, he explained that the issues of development are not distinct, but intersect.

Mr Onno Rühl stated that there are two main questions to ask: what influences businesses, and what you expect from them. Businesses are influenced by market and regulations, but consumer behaviour also needs to change. He said that businesses are expected to provide innovation, implementation, and scaling up. It will innovate out of necessity and have a positive impact given the right stimulus, but expecting them to take initiative while we ourselves do not take any action is demanding too much. Mr Mehta concluded that solutions to energy, water, and food issues will depend on how the problem is defined.

The Role of MDBs in Attaining Energy, Water, and Food Security



L–R: Ms Anne Paugam; Dr Naoko Ishii; Mr Howard Bamsey; Mr Gyan Chandra Acharya; Dr Bindu N Lohani;

and Mr Alexandre Meira da Rosa

Chair: Mr Howard Bamsey, Director General, Global Green Growth Institute

Video Message: Dr Jim Yong Kim, President, The World Bank Group

Panelists:

- **Mr Gyan Chandra Acharya**, Under-Secretary-General & High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States
- **Dr Naoko Ishii**, CEO & Chairperson, Global Environment Facility
- **Dr Bindu N Lohani**, Vice President, Knowledge Management and Sustainable Development, Asian Development Bank
- **Ms Anne Paugam**, CEO, Agence Française de Développement (AFD)
- **Mr Alexandre Meira da Rosa**, Manager, Infrastructure and Environment Department, Inter-American Development Bank

The session highlighted that climate change is a threat that will take decades to reverse, especially in Asia. The session began with a video message by the President of The World Bank Group, Dr Jim Yong Kim, who highlighted that a 2 °C change in the global temperature can permanently wipe away many islands/coastal areas off the Asian coastline. He stressed the need for a clean growth alternative, saying that there will be a three-billion strong middle class in Asia by 2050, and the pressure on natural resources for food, drinking water, and energy sources will be tremendous. The Multi-lateral Development Banks (MDBs) have put forth an agenda of operation and suggested ways to incorporate an integrated approach. This includes imparting an understanding of the nexus between development and integrated policies, best practices to be introduced and implanted financing programmes, technology access, adaptation of the proposed solutions, and institution building and stakeholder engagement approach.

Mr Gyan Chandra Acharya pointed out that collaboration is the key to success. Dr Naoko Ishii said that we must focus on natural capital, and that the inter-connectedness of challenges calls for an integrated approach to address them. Dr Bindu N Lohani said that the ‘business-as-usual’ approach will not help, and increasing urbanization will require more resources. He discussed the importance of scalability of energy projects, as well as pricing issues, especially in PPP mode. Ms Anne Paugam said that current science and technology cannot address the global challenges of the food–water–energy nexus. There is a need for innovation in financing, incentives for SMEs to venture into greener

processes, and for MDBs to facilitate the creation of an enabling environment for the realization of innovation and the change process. Mr Alexandre Meira da Rosa observed that stakeholders need to work together in all areas to create an enabling environment to facilitate the deployment of carbon neutral technologies.

There has to be a clear focus towards challenges that restrict participation of the private sector, including cost and risk barriers. While the global funding institutions must coordinate in terms of programmes and policies, an integrated approach is required at all levels, including policy design, policy implementation, national leadership, and community action.

ADB Perspectives: Thinking Differently About Water, Food, and Energy

Dr Bindu N Lohani introduced three ADB publications on Food, Water, and Energy. These included: 'Report on Water: Quantitative and comprehensive analysis of countries for water security'; 'Report on Food: A quantitative analysis that focuses on areas nutrition, climate change and water-food nexus'; and 'Report on energy: Focuses on areas including need for policies, social infrastructure, technology innovation and transfer.

Key factors about the regional energy trend and energy sharing among the countries and fuel subsidies were discussed during the session.

This session was followed by a Reception and Dinner, hosted by the Asian Development Bank (ADB).

DAY 2: FEBRUARY 7, 2014

Dealing with the Energy, Water, and Food Security Challenge in Asia



L–R: Dr David Molden; Mr Ajay Vir Jakhar; Ms Lise Grande; Dr Prodipto Ghosh; Dr Anindya Chatterjee; Prof. Hironori Hamanaka; and Dr Leena Srivastava.

Chair: Dr Prodipto Ghosh, Distinguished Fellow, The Energy and Resources Institute (TERI)

Keynote Address: Prof. Jeffrey D Sachs, Director, Earth Institute & Special Advisor to the United Nations Secretary General (via Video)

Panelists:

- **Dr Anindya Chatterjee**, Asia Regional Director, International Development Research Centre (IDRC)
- **Ms Lise Grande**, UN Resident Coordinator & Resident Representative, United Nations Development Programme India
- **Prof. Hironori Hamanaka**, Chair, Board of Directors, Institute for Global Environmental Strategies (IGES)
- **Mr Ajay Vir Jakhar**, Chairman, Bharat Krishak Samaj (Farmers' Forum, India)
- **Dr David Molden**, Director General, International Centre for Integrated Mountain Development (ICIMOD)
- **Dr Leena Srivastava**, Vice Chancellor, TERI University

The session, chaired by Dr Prodipto Ghosh, saw the launch of the South Asian Regional Hub of the Sustainable Development Solutions Network (SDSN). Prof. Jeffrey Sachs, in his keynote address, insisted that the role of such environment and development think tanks is important. He also said that with an unabated increase in greenhouse gases, especially the 35 billion tonnes of carbon dioxide projected to be emitted solely due to

fossil fuel extraction, and global temperature rise of 2 °C – 4 °C, a call for deep transformation is needed. Prof. Hironori Hamanaka stressed that a nexus approach requires trade, investment, climate policies, and political will, as well as money and technology to meet the surging demand for food, water, and energy. He pointed out that the world needs an integrated qualitative assessment of the link between these issues at the regional, national, and continental levels. Mr Ajay Vir Jakhar introduced himself as a farmer from a developing nation, and thus, his perception of food security differs from that of the world. He also said that developing countries have a hard time dealing with their GDP indicators, and they in turn ape their developed counterparts.

He pointed out that it is the duty of the developed world to act responsibly and demanded that the world spend US \$100 billion on environmental impact mitigation. Dr David Molden raised the problem of air pollution and the challenges faced by mountain communities. Dr Leena Srivastava pointed out the absence of suitable mechanisms for the nexus, the lack of data availability, and the role of public finance. According to Dr Anindya Chatterjee, efforts made during the Green Revolution for wheat, corn, and rice should be extended to other crops. Ms Lise Grande said that as the Millennium Development Goals (MDGs) are going to expire next year, new sustainable development goals should replace them. Food security was the highest priority under the MDGs, and it is time to deepen this by adopting energy security for food as a Sustainable Development Goal (SDG).

The Energy-Water-Food Triangle



L–R: Prof. Petteri Taalas; Dr Georges Valentis; Prof. Nebojsa Nakicenovic; Dr Leena Srivastava; Prof. François Mancebo; Mr Jake Schmidt; and Dr Kazuhiko Takeuchi

Chair: Dr Leena Srivastava, Vice Chancellor, TERI University

Panelists:

- **Prof. François Mancebo**, Full Professor, IRCS (International Research Center on Sustainability) - IATEUR Rheims University
- **Prof. Nebojsa Nakicenovic**, Deputy Director General, International Institute for Applied Systems Analysis (IIASA)
- **Mr Jake Schmidt**, International Climate Policy Director, Natural Resources Defense Council (NRDC)
- **Prof. Petteri Taalas**, Director General, Finnish Meteorological Institute
- **Dr Kazuhiko Takeuchi**, Vice-Rector, United Nations University
- **Dr Georges Valentis**, Managing Director, Veolia Environment Institute

The session was chaired by Dr Leena Srivastava. Speakers emphasized interdisciplinary approaches to deal with the upcoming challenges of energy, food, and water. The panel reiterated that the pace of development and our consumption habits, which will lead to a resource shortage, necessitate finding science-based solutions to these problems.

Prof. Petteri Taalas contextualized the challenge and demanded action on climate change by identifying key trends, including a 5 °C increase in temperature by the end of the decade, 80 cm-rise in sea levels by the end of the century, and significant increases in natural disasters causing heavy losses to agricultural production. He emphasized the

close correlation between these natural trends and human economic trends, such as a projected doubling of the global middle class by 2030. Dr Kazuhiko Takeuchi urged a shift in focus from maximizing energy, water, and food production as individual sectors toward optimization based on a nexus approach. He highlighted the gap between international proposals and local realities, and strengthened the case for localization by noting the impact that current food cultivation demands have on ecosystems. Dr Georges Valentis focused on the problem of water supply to cities, expressing confidence that a 24/7 supply was possible and affordable. Mr Jake Schmidt spoke of the problems occurring due to ignorance towards the maintenance and usage of water, as well as the man-made causes and new challenges of water scarcity. Prof. Nebojsa Nakicenovic pointed out that though the world population has grown seven times over the last two centuries, our water consumption has gone up 20 times and energy use 50 times! Prof. François Mancebo reiterated that integration is the key to dealing with the problems of growing demand for energy, food, and water.

TERI and the Royal Norwegian Embassy Initiatives on Climate Change

A special session at the Summit showcased an overview of the Norwegian Framework Agreement between the Norwegian Ministry of Foreign Affairs and TERI. Dr R K Pachauri, Director-General, TERI, described it as a partnership to explore issues of the future. Especially notable was his praise for the progress of Norwegian institutions in the sphere of climate modelling. On the occasion, HE Lars Andreas Lunde, State Secretary (Deputy Minister) of Climate and Environment, Norway thanked Dr Pachauri for the opportunity to showcase Norwegian work at the forum, and congratulated him on addressing climate change issues at the highest level, through his leadership at the IPCC and at the grassroots with TERI. The session concluded with a film showcasing the highlights of the partnership across research areas; the capabilities at TERI; as well as a vision for further collaboration.

The Royal Norwegian Embassy hosted the Lunch on February 7, 2014, in celebration of their joint initiatives on climate change with TERI.

Special Presentation by Mr Jack Andraka, Inventor



"Youth must become more than just an interest group in global climate change."

Jack Andraka, a Maryland high school student and creator of a novel paper sensor which detects pancreatic and ovarian cancer in five minutes at three cents presented his research at the Summit. His invention, a dipstick diagnostic test, is a quick method for testing cancer in pancreas, lungs, and ovaries. Similar to a diabetes test strip, the strip checks for levels of mesothelin in body. According to the young inventor, the test is 168 times faster and 26,000 times cheaper than the present methods used for detecting cancer. He stressed that the internet is for more than just social networking; it is an enabler. The internet enables us to learn, and put forth our views, opinions, and ideas.

Tackling the Energy, Water, and Food Security Challenge in Africa



L–R: HE Prof. Rolph Payet; Hon’ble Mass Axi Gai; HE Dr Raphael Edou; Dr Fatima Denton; Dr Carlos Lopes; HE Mr Henri Djombo; HE Ms Ana Paulo Samo Gudo Chichava; and HE Prof Ephraim Kamuntu.

*Chair: **Dr Fatima Denton**, Officer In-Charge, African Climate Policy Center, Special Initiatives Division, United Nations Economic Commission for Africa (UNECA)*

*Keynote Address: **Dr Carlos Lopes**, Executive Secretary, UNECA & UN Under Secretary General*

Panelists:

- **HE Dr Raphael Edou**, Minister of Environment, Climate Change and Reforestation, Benin
- **HE Mr Henri Djombo**, Minister of Forestry Economy and Sustainable Development, Congo
- **Hon’ble Mass Axi Gai**, Minister of Fisheries and Water Resources, Gambia
- **HE Ms Ana Paulo Samo Gudo Chichava**, Deputy Minister for the Coordination of Environmental Affairs, Mozambique
- **HE Prof. Rolph Payet**, Minister for Environment and Energy, Seychelles
- **HE Prof Ephraim Kamuntu**, Minister of Water and Environment, Uganda

The keynote speaker, Dr Carlos Lopes, pointed to the fact that while Africa causes the least harm to the global climate, it is the most affected. The continent needs to focus on industrialization that will be coherent with efficiency and green development. He also spoke about the need for greater investment and research in climate science and natural disaster warning systems, adding that we must collectively persuade the sceptics of climate change to change their views for a sustainable world.

HE Dr Raphael Edou was of the opinion, that climate change is not biased, it is faced globally; hence there is an urgent need for leadership, sensitization, and mobilization of citizens everywhere. HE Mr Henri Djombo endorsed this view, stating that the water, energy, and agriculture sectors need to be incorporated within a single strategy. Hon'ble Mass Axi Gai opined that Gambia is sustainable in terms of safe drinking water, food security, and energy, but the increase in cost of energy use is leading to poverty in Africa, with the high cost of renewable technology creating a barrier. HE Ms Ana Paulo Samo Gudo Chichava said that energy, water, and food security has to be at the heart of every field in order to achieve sustainability globally, adding that Mozambique's efforts have been recognized in this arena.

HE Prof. Rolph Payet stated that over-production and over-consumption were largely responsible for climate change, and called for all countries to collaborate for the creation of a coherent policy for sustainable development including solutions to climate change-related natural disasters. HE Prof. Ephraim Kamuntu expressed a need to change the current approach to development; such that competitiveness and efficiency increase.

Communicating for Sustainability



L–R: Mr Nitin Sethi; Mr Tim Nuthall; Mr Lance Ignon; Mr Guido Schmidt-Traub; and Mr Ali Tauqeer

Chair: Mr Lance Ignon, Managing Director, Public Relations, Citizen Group

Panelists:

- **Mr Tim Nuthall**, Media Manager, European Climate Foundation

- **Mr Guido Schmidt-Traub**, Executive Director, UN Sustainable Development Solutions Network
- **Mr Nitin Sethi**, Senior Assistant Editor, The Hindu
- **Mr Ali Tauqeer Sheikh**, CEO, LEAD Pakistan & National Program Director and Asia Regional Director, CDKN

The session began with the chair, Mr Lance Ignon making his introductory remarks on how sustainability has become a hot topic globally. However, he was quick to point out that the price and quality of products still take precedence over sustainability in terms of consumer purchasing habits. He stressed that there is a long way to go with regard to better communicating the precise meaning of sustainability and sustainable development. Mr Ali Tauqeer Sheikh stressed on the need to clearly define target audiences when communicating about sustainability, and avoid the trap of experts talking down to people. He said that vast improvements could be made to the process by listening effectively and learning at the community level. Mr Nitin Sethi enumerated the various stakeholders as being the industry, government, and civil society, stating that there is a contentious debate on sustainable development between industry and civil society. He also pointed out that there is an international discourse on how to talk about sustainability which promotes competition and makes achieving sustainable development more difficult, adding that we also need to be aware of the geopolitics of the negotiation process of a sustainability document. Mr Tim Nuthall suggested that effective communication of sustainability hinges on a good communication strategy that is informed and supported by concrete evidence. He observed how the psychology of the entire movement of communicating knowledge about sustainable development is fundamentally flawed as it primarily focuses on overwhelming target audiences with large amounts of data. He emphasized how initiatives such as talking to local mining communities would be more productive than constantly churning out reports. Mr Guido Schmidt-Traub noted that the response measures in terms of sustainable development are not at par with the depth of the challenge that is being faced, and this can be attributed to a fundamental failure in communication. His solutions were to re-brand sustainability in more economic terms and instate good governance. Overall, it was felt that customized communication strategies involving simplification of science and greater clarity on terms such as sustainability and the sustainable development framework should be developed for specific target audiences.

DAY 3: FEBRUARY 8, 2014

Ministerial Session 2: Dealing with the Impacts of Climate Change



L–R: HE Mr Jorge Moreira da Silva; HE Dr Thet Thet Zin; HE Mr Graco Ramírez Garrido Abreu; HE Mr Lyonpo Yeshey Dorji; Rt Hon'ble John Gummer, Lord Deben; HE Dr Oyun Sanjaasuren; HE Mr Lars Andreas Lunde; and Lord John Prescott

Chair: Rt Hon'ble John Gummer, Lord Deben, Former Secretary of State for Environment & Member of Parliament, House of Lords, UK

Panelists:

- **HE Mr Lyonpo Yeshey Dorji**, Minister of Agriculture & Forests, Bhutan
- **HE Mr Graco Ramírez Garrido Abreu**, Governor of Morelos, Mexico
- **HE Dr Oyun Sanjaasuren**, Minister of Environment and Green Development, Mongolia
- **HE Dr Thet Thet Zin**, Deputy Minister, Ministry of Environmental Conservation and Forestry, Myanmar
- **HE Mr Lars Andreas Lunde**, State Secretary (Deputy Minister) of Climate and Environment, Norway
- **HE Mr Jorge Moreira da Silva**, Minister of Environment, Spatial Planning and Energy, Portugal
- **Lord John Prescott**, Former Deputy Prime Minister & Member of Parliament, House of Lords, UK

This session emphasized the need and benefits of actively engaged legislative processes in sustainable development. The panelists agreed that there is a need for a strong, globally binding, legal climate change mitigation framework in addition to the environment-sensitive policies to effectively tackle the problem of climate change.

Lord John Prescott emphasized the need for a framework that indicates common and differential responsibilities for the countries involved. Climate change affects nations across the globe, regardless of their contribution to it. Thus, it can be mitigated only through global cooperation. It was stated that carbon trading with the consensus of EU nations would be a big step on the path towards sustainable development. All representatives unanimously agreed that nations need to actively work towards alleviating the problems faced due to climate change by working on lower carbon emissions and promoting green development, particularly through renewable energy technologies for power generation. Additionally, it was emphasized that forests, which serve as carbon stores, are being depleted due to rampant deforestation and thus need to be protected. It was noted that Bhutan's national development plans intend to preserve its forest cover to the tune of 60 per cent.

A shift to sustainable development is an opportunity for economic growth which can simultaneously result in women's empowerment, employment generation, and poverty reduction. Additionally, it was stated that there is a need for institutional changes that are inclusive and transparent. With an emphasis on immediate action, the panelists spiritedly discussed the importance of green economic growth.

Signing of MoU with Jain Irrigation Systems Ltd



Mr Anil Jain and Dr R K Pachauri signing the MoU

A Memorandum of Understanding (MoU) was signed between TERI and the Jain Irrigation Systems Ltd at DSDS 2014. Mr Anil Jain, Managing Director of Jain Irrigation Ltd, highlighted the role of their irrigation systems in helping the farmers improve their productivity by 3–4 times. Dr Pachauri praised the organization's efforts, stating, "They (Jain Irrigation Systems Ltd) really made deserts bloom."

Mr Jain opined that this collaboration with TERI, would help the organizations to work towards bridging gaps that currently exist between preaching about water conservation and executing water conservation measures.

Centre-Stage India: In Conversation with Indian Officials



L–R: Mr Ajai Malhotra; Mr Surender Kumar; Mr Gireesh Pradhan; Mr Amitabh Kant; Mr Karma Paljor; Mr B K Chaturvedi; Mr Rajeev Kher; Mr Arunendra Kumar; and Dr S K Sarkar.

*Moderator: **Mr Karma Paljor**, Business Editor and Senior Anchor, CNN-IBN*

*Setting the Theme: **Mr B K Chaturvedi**, Member, Planning Commission, Government of India*

Panelists:

- **Mr Amitabh Kant**, CEO and Managing Director, Delhi-Mumbai Industrial Corridor Development Corporation
- **Mr Rajeev Kher**, Secretary, Department of Commerce, Ministry of Commerce and Industry, India

- **Mr Surender Kumar**, Secretary, Department of Science, Technology, and Environment, Government of Tripura, India
- **Mr Arunendra Kumar**, Chairman, Railway Board, Ministry of Railways, India
- **Mr Ajai Malhotra**, Former Ambassador of India to Russia
- **Dr S K Sarkar**, Secretary (Personnel), Department of Personnel and Training, Ministry of Personnel, Public Grievances and Pensions, India
- **Mr Gireesh Pradhan**, Chairperson, Central Electricity Regulatory Commission, India

The session highlighted the need for an increase in energy from renewable sources in the total energy supply mix of the country. It was discussed that cities should have sustainable transport and related use of technology to leapfrog from their current status to become smarter cities. Dedicated Freight Corridors were seen as a good solution for sustainable transportation. Carbon footprint was a subject of debate, and panelists advised that its impact on the growth of developing countries needs to be tracked. Region-specific issues were raised and regional best practice examples such as solar pumps being used in Bihar were enumerated. Additionally, it was pointed out that water is a state subject whilst the role of the central government is that of a facilitator. Therefore, there is a need to incentivize states so that more efficient water schemes and projects can be implemented by their governments. The session concluded that all issues have to be addressed in such a manner that sustainability and security go hand-in-hand. During the question–answer session, the implications of water-intensive crops on soil were discussed, and the panelists opined that the policy of free energy for agriculture has to be scrapped. Agriculturists need to be metered, and investments in water saving technologies must be increased. As a perspective to balance the energy–food–water nexus, abolishing oil subsidies would bring greater energy efficiency and better usage. There is also a need to seek political consensus and meaningful partnerships between states and the centre to take the right efforts forward.

Gender: The Core Issue in Sustainable Development



L–R: Mr Adam Koniuszewski; Mr Muhammad Irfan Elahi; Dr Ligia Noronha; Dr Remi Quirion; Prof Veena Sikri; Sir Jonathon Porritt; and HE Mr Dasho Paljor J Dorji

Chair: Dr Ligia Noronha, Executive Director (Research Coordination), The Energy and Resources Institute (TERI)

Panelists:

- **HE Mr Dasho Paljor J Dorji**, Special Advisor, National Environment Commission, Bhutan
- **Mr Muhammad Irfan Elahi**, Chairman, Planning and Development Board, Government of Punjab, Pakistan
- **Mr Adam Koniuszewski**, Chief Operating Officer, Green Cross International
- **Sir Jonathon Porritt**, Founder-Director, Forum for the Future
- **Dr Remi Quirion**, Chief Scientist, Fonds de Recherche du Quebec
- **Prof Veena Sikri**, Convener, South Asia Women's Network (SWAN) & Vice Chairperson, South Asia Foundation (SAF-India)

The session began with a discussion on gender equality, with Prof. Veena Sikri stating that no nation can achieve sustainable development without gender equality. Gender auditing and budgeting are needed at the policy level to ensure that money is distributed equally. Women should be at the centre of the process for tackling child malnourishment. HE Mr Dasho Paljor Dorji proudly stated that in his country, Bhutan, there is no gender discrimination, and that women are powerful change-makers, participating in all levels of decision making. Women in Bhutan work in almost every sector, and also occupy high administrative posts.

Mr Muhammad Irfan Elahi stressed on the need to focus on social equality, and talked about Pakistan's significant reduction of the gender gap in the last two decades. However, there are still many lacunae in different sectors of the society that need to be plugged. He emphasized the need for primary education, and pointed to this being the key catalyst in reducing the gender gap. He talked about the government policy of giving incentives to school-going children to attract them towards education and in turn become financially able to support their families. Highlighting the global scenario, he said that in 45 developing countries, women outnumber men at the secondary education level. He stressed upon the need to enhance budgets to support women.

Dr Remi Quirion agreed to the fact that gender has to be at the centre of sustainable development. There is a need to use the concept of 4Es — Equality, Environment, Education, and Economy — to ensure sustainable development that can be achieved by all. He said that his country is keen to share knowledge with other parts of the globe.

Mr Adam Koniuszewski highlighted the fact that rich communities are dominated by men, while poor ones are dominated by women. He mentioned that the average working hours for women are 18 hours a day, but for men, the World Bank has mandated eight hours. He added that most climate damage has been caused by men, and we need to collect data on the basis of gender.

Valedictory Session



L–R: Rt Hon'ble John Gummer, Lord Deben; Mr Montek Singh Ahluwalia; and Dr R K Pachauri

Chair: **Rt Hon'ble John Gummer**, Lord Deben, Former Secretary of State for Environment & Member of Parliament, House of Lords, UK

Valedictory Address: **Mr Montek Singh Ahluwalia**, Hon'ble Deputy Chairman, Planning Commission, Government of India

Vote of Thanks: **Dr R K Pachauri**, Director General, The Energy and Resources Institute (TERI)

The Valedictory Session started with the opening remarks by the chairperson, Rt Hon'ble John Gummer, Lord Deben. He congratulated the organizers for the successful completion of DSDS 2014, and highlighted the achievements of the various sessions conducted within the Summit. Mr Montek Singh Ahluwalia then delivered the valedictory address.

Congratulating TERI on the success of the Summit, Mr Ahluwalia highlighted its contribution to awareness generation on issues of sustainability. Addressing the thematic focus of the Summit, he stated that the difficulty of handling scarce resources lies at the heart of sustainability. In his opinion, from the sustainability point of view, food security is not as big a problem as water and energy security. Therefore, he moved to address both energy and water as challenges to sustainability. He opined that most people now recognize energy as a problem. Linking the issue of energy production with energy supply and energy efficiency, he stressed the issue of effective energy pricing. Turning to water, he highlighted the criticality of this highly scarce domestic resource, reminding delegates that they need to be more concerned about water, considering there is no scope for importing it. He said that in spite of not having a global externality like carbon emissions, the domestic externalities of water are huge. However, the most important aspect before us is the need for change in the present mind-set, where there is little public acceptability to pay for water.

The Valedictory Session came to an end with a vote of thanks by Dr R K Pachauri. He thanked the Summit Partners for their generous support and the speakers and guests for their profound thoughts and active participation in the deliberations.

AWARDS

10th Sustainable Development Leadership Award



Presentation of the 10th Sustainable Development Leadership Award

L–R: Mr Anand Mahindra, Chairman and Managing Director, Mahindra & Mahindra; Dr R K Pachauri, Director-General, TERI; Mr Salman Khurshid, Hon'ble Minister of External Affairs of India; HE Mr Danny Faure, Vice President, Seychelles

The 10th Sustainable Development Leadership Award was presented to Mr Anand Mahindra, Chairman and Managing Director, Mahindra & Mahindra. The Award was in recognition of his leadership, under which the Mahindra Group has moved forward on the path of sustainability and environmental awareness. His commitment to the cause of environmental activism has woven together sustainability and profits in the Mahindra Group, making it a role model for other Indian corporates. In the area of Corporate Social Responsibility (CSR), he has also made seminal contributions in several fields, particularly for the education of the girl child.

The Mahindra Group has worked incessantly to reduce its dependency on fossil fuels and enhance the quality of the environment. E2O, India's first electric car manufactured in the first-ever national platinum certified green factory, is a testimony to their meritorious cause. Their foray into solar technology, eco-tourism, and green real estate, among others, is a further step in this regard. Actively dedicated to the green cause, their Mahindra Hariyali Project planted a total of 1.74 million trees in the year 2013 and

the Group's Zaheerabad factory converted a semi-arid region into a 343-acre lush green belt, setting the Mahindra Group apart from others on the corporate spectrum.

Presentation of the 2nd Georgescu-Roegen Awards



The 2nd Georgescu-Roegen Awards at DSDS 2014 were presented by Lord John Prescott. The Award in the category of 'Unconventional Thinking' was presented to Prof. Inge Ropke, for her services in advancing the environmental pool of thoughts. The 'Bio-economic Practices' Award category was bestowed on the Western Ghats Ecology Expert Panel, chaired by Prof. Madhav Gadgil, for their outstanding contribution to the defense of natural ecosystems and human rights.

Lord John Prescott presenting the 2nd Georgescu-Roegen Award to Prof. Inge Ropke

THEMATIC TRACKS

Date	Thematic Track	Partner(s)
7 th Feb 1145 – 1345	Water and Food Security	UNDP
	Promoting Energy Efficiency in MSMEs	SDC
	Special Interactive Session: How Can Legislators Help Tackle Climate Change?	GLOBE International
	How to Steer the Indian Innovation System towards Sustainability?	AFD
7 th Feb 1700 – 1900	Food, Water, Energy Nexus: Approaches to Securing Nutrition for Vulnerable Populations	ADB
	Role of Renewable Energy in Enhancing Energy Security in Developing Countries	The UK Government
	Extreme Risks, Vulnerabilities, and Community-Based Adaptation in India (EVA): A Pilot Study	Norwegian Embassy
	Roundtable on Mining within the Sustainable Development Framework	
8 th Feb 1130 – 1330	Adaptive Development for the Sustainability of Asia: Research and Practice	Keio University, IGES and TERI University
	Key Lessons from CDKN-START Research on Disaster Risk Reduction and Climate Change Adaptation in South Asia	CDKN and START
	First TERI-ICCT Lecture: Transportation Should Never Be Addressed in Isolation!	ICCT
	High Level Dialogue for Energy, Water, and Food Security	Jain Irrigation

Promoting Energy Efficiency in Micro, Small and Medium Enterprises (MSMEs)

An SDC and TERI Co-Presentation



L–R: Mr Girish Sethi; Mr Hideaki Domichi; Dr Veena Joshi; Dr Ajay Mathur; Prof. Hironori Hamanaka; Dr Pradeep Monga; and Mr Jean-Yves Grosclaude.

Welcome Remarks: Mr Daniel Ziegerer, Director of Cooperation, Swiss Agency for Development and Cooperation

Chair: Dr Ajay Mathur, Director General, Bureau of Energy Efficiency, India

Panelists:

- **Mr Hideaki Domichi**, Senior Vice President, Japan International Cooperation Agency (JICA)
- **Mr Jean-Yves Grosclaude**, Executive Director (Strategy), Agence Française de Développement (AFD)
- **Prof. Hironori Hamanaka**, Institute for Global Environmental Strategies (IGES)
- **Dr Veena Joshi**, Senior Advisor, Swiss Agency for Development and Cooperation (SDC)
- **Dr Pradeep Monga**, Director of the Energy & Climate Change Branch at the United Nations Industrial Development Organization (UNIDO)
- **Mr Girish Sethi**, Director - Industrial Energy Efficiency, The Energy and Resources Institute (TERI)

Vote of Thanks: Dr Shirish Sinha, Senior Advisor, Swiss Agency for Development and Cooperation

The session began with a presentation by Ernst & Young (E&Y) highlighting the current situation of energy efficiency in the MSMEs sector. The speakers emphasized the highly competitive environment that Indian MSMEs operate in, adding that adopting Energy Efficient Technologies (EETs) is more of a challenge than an opportunity. The MSMEs sector occupies a special place for innovation, employment, and export and adequate service mechanisms should be established around every demonstration project so that it can result in mass replication.

It was suggested that information failures and the lack of a BEE energy conservation code for the MSMEs sector should be addressed, and a cluster-based bottom-up approach should be adopted. Examples of technology transfer programmes and lines of credit were also cited to demonstrate that an improvement is possible. It was also noted that energy efficiency potential is massive in the old/traditional sector of MSMEs, and local technology must be incentivized to create EETs as per the needs of each cluster.

How to Steer the Indian Innovation System towards Sustainability?

An AFD, IDDRI, & TERI Co-Presentation



L–R: Mr Anand V Tanikella; Ms Surabhi Rajagopal; Mr Keerthi Laal Kala; Ms Urmi Goswami; Mr Sunil Mani; Mr Navi Radjou; and Mr Mustapha Kleiche.

Introductory Addresses:

- **Dr R K Pachauri**, Director–General, The Energy and Resources Institute (TERI)
- **Ms Anne Paugam**, CEO, Agence Française de Développement (AFD)

Chair: **Mr Keerthi Laal Kala**, Program Lead, Industry Innovation Cluster Initiative, National Innovation Council, Government of India

Moderator: **Ms Urmi Goswami**, Special Correspondent, Political Bureau, The Economic Times

Panelists:

- **Mr Sunil Mani**, Planning Commission Chair; Professor in Development Economics, Centre for Development Studies
- **Mr Navi Radjou**, Innovation and Leadership Strategist & Fellow, Judge Business School, University of Cambridge
- **Mr Mustapha Kleiche**, Senior investment Officer and leading Expert in green finance, Agence Française de Développement
- **Mr Anand V Tanikella**, Director, Saint Gobain Research India
- **Ms Surabhi Rajagopal**, Principal Analyst, SELCO Foundation

The session highlighted the importance of innovation as a means to benefit the poorest of the poor. The AFD's mandate in India, it was discussed, is to provide financial and technical assistance to contribute towards a green economy. The National Innovation Council, it was pointed out, takes the top-down as well as a bottom-up approach. Four policy challenges were discussed: identifying the core of the innovation system, i.e., production; increasing share of multinational enterprises in R&D; extreme geographic and sectoral concentration in innovation and R&D; and the low amount of investment in green technology. The panel agreed that the concept of frugal innovation, or *jugaad*, is prominent in India and the mind-set of needing cheaper innovations or innovations making things cheaper is gaining importance. The development of banks was possibly a catalyst in bringing about a change in green innovation, with India being the first to create a special agency for renewable energy – IREDA.

Special Interactive Session: How Can Legislators Help Tackle Climate Change?

Under the aegis of GLOBE International



The session began with the launch of the '*GLOBE Climate Legislation Study*' book reviewing the parliamentary framework for climate policies in 46 countries. A discussion ensued among participants from 15 countries on whether every country would accept a global legal climate policy framework. Every country present accepted that climate change is a scientific reality, having experienced unforeseen natural disasters in the recent past. GLOBE India, involving all levels of governance to heed various voices, was brought up, as was the Mexican policy of opening its energy sector to the public to avoid state monopoly. Norway was noted as the country with the largest number of electric cars owing to incentives for citizens, and being the first to successfully start implementing measures to reduce ozone depletion, reduce the usage of asbestos, and promote recycling and consumption of lead-free gasoline. It was emphasized that each country must contribute to whatever extent possible.

Water and Food Security

A UNDP and TERI Co-Presentation



L–R: Mr Surinder Makhija; Dr B C Barah; Mr Srinivasan Iyer; Mr S Vijay Kumar; Mr Animesh Shrivastava; and Mr Anshuman

*Welcome Note: **Mr Anshuman**, Associate Director-Water Resources, TERI*

*Chair: **Mr Srinivasan Iyer**, Assistant Country Director and Head, Environment and Energy Unit, UNDP India*

Panelists:

Dr B C Barah, NABARD Chair Professor, Division of Agricultural Economics, Indian Agricultural Research Institute (PUSA)

Dr Himanshu Kulkarni, Executive Director & Secretary, Advanced Center for Water Resources Development and Management (Acwadam) Pune

Mr S Vijay Kumar, Distinguished Fellow, Water Resources Division, TERI

Mr Surinder Makhija, Strategic Advisor, Jain Irrigation Systems Ltd

Mr Animesh Shrivastava, Country Sector Coordinator for Agriculture and Rural Development, The World Bank

*Vote of Thanks: **Dr Girija Bharat**, Fellow, Water Resources Division, TERI*

This session highlighted the need to enhance water-use efficiency in all the sectors throughout the country. The panelists felt there is a need to blend technology appropriately in order to ensure food security. Steps towards ending hunger while ensuring food security were also discussed. How to frame issues, what are the options available, and probable future solutions for water and food security, these were some of the points discussed by the panelists. Aquaculture, being a low-cost solution, was stated to be the best of all to solve water and food security related problems. Various important questions were put up during the session on issues such as farmers committing suicide, interlinking of rivers, prospects of growing pulses, millets and cash crops, sustainable use of chemical fertilizers, System of Rice Intensification (SRI), etc. The role of conservation agriculture in the near future was also discussed. The panel answered a range of multifaceted questions, keeping in view ground realities and in the purview of current policies and planning.

Role of Renewable Energy in Enhancing Energy Security in Developing Countries

A UK Government and TERI Co-Presentation



L–R: Mr Munehiko Tsuchiya; Mr Prabhat Kumar; Mr Heherson T Alvarez; Mr Gyan Chandra Acharya; HE Mr Jorge Moreira da Silva; Dr Benard Muok; and Dr Ritu Mathur

Chair: **Mr Gyan Chandra Acharya**, Under-Secretary-General & High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States

Special Remarks:

- **Dr R K Pachauri**, Director General, TERI
- **HE Mr Jorge Moreira da Silva**, Minister for the Environment, Spatial Planning and Energy, Portugal

Presentations from TERI:

- **Mr Ashish John George**, Research Associate, TERI
- **Dr Ritu Mathur**, Associate Director, Modelling and Scenario Building, TERI

Panelists:

- **Mr Prabhat Kumar**, Joint Secretary, Energy Security & ITP (Investment, Technology, Promotion) Division, Ministry of External Affairs, Government of India
- **Dr Benard Muok**, Executive Director and Director of Programmes, African Centre for Technology Studies (ACTS), Kenya
- **Mr Munehiko Tsuchiya**, Executive Director, New Energy and Industrial Technology Development Organization, (NEDO)
- **Mr Heherson T Alvarez**, Commissioner, Climate Change Commission, Philippines
- **Dr Ritu Mathur**, Associate Director, Modelling and Scenario Building, TERI

The session began with special remarks by Dr R K Pachauri, who said that renewable energy (RE) will help marginalized people of developing countries increase economic growth and reduce imports. The panel outlined the importance of understanding the concept of energy security with specific reference to developing countries, and to expand traditional definitions of energy security to include RE. The speakers agreed that developing countries have sufficient RE resources but need better technologies to realize this potential, which requires political commitment and international cooperation to scale up efforts. They noted that there is a trade-off between energy and food security, especially when it concerns biofuels, and though efforts towards RE are being made, conventional fuels would retain their importance. There was a call for a framework to enhance deployment of RE to achieve targets, particularly among the marginalized sections of society.

Food, Water, Energy Nexus: Approaches to Securing Nutrition for Vulnerable Populations

An ADB and TERI Co-Presentation



L–R: Mr Gil-Hong Kim; Mr Robert Meaney; Prof. Peter Rogers; Dr Bindu N Lohani; Mr Samuel Daines; Mr Peter Kenmore; and Dr Pramod K Joshi

Chair: Dr Bindu N Lohani, Vice President, Knowledge Management and Sustainable Development, Asian Development Bank (ADB)

Panelists:

- **Mr Samuel Daines**, President, SRD Research Group
- **Dr Pramod K Joshi**, Director for South Asia, International Food Policy Research Institute (IFPRI)
- **Mr Peter Kenmore**, Representative in India, Food and Agriculture Organisation of the United Nations (FAO)
- **Mr Gil-Hong Kim**, Director, Sustainable Infrastructure Division, Regional and Sustainable Development Department, ADB
- **Mr Robert Meaney**, Distinguished Fellow, Robert B Daugherty Water for Food Institute, University of Nebraska
- **Prof. Peter Rogers**, Gordon McKay Research Professor, Harvard School of Engineering and Applied Sciences

Despite a growing population, urbanization, and land fragmentation, India has succeeded in achieving food security. However, people are consuming more calories and fats than protein and iron, leading to malnutrition. We now need efforts towards

nutrition security. The panel felt that a behavioural change through education is needed to change people's food habits. Farmers need adequate technological support and their produce needs to be linked to a business model that helps produce nutrient-rich food and generates high revenue. This has been achieved through production of poultry, fish, milk, and horticulture, but these commodities are highly perishable and prone to diseases. Regional cooperation for high yield crops at low prices was seen as a possible solution, in addition to integrating SAARC and ASEAN to strengthen production and reduce prices. Middle income nutrition on a lower income budget is possible with adequate government support and building trust among farmers with appropriate infrastructure, along with a transition in planning and management approaches to protect farmers' interests.

Extreme Risks, Vulnerabilities, and Community-Based Adaptation in India (EVA): A Pilot Study

A Norwegian Embassy and TERI Co-Presentation



L–R: Dr Prodipto Ghosh; Dr Trond Vedeld; Dr R K Pachauri; HE Mr Lars Andreas Lunde; HE Mr Eivind Homme; and Shri R A Rajeev

Opening remarks: Dr R K Pachauri, Director General, TERI

Chair: Dr Prodipto Ghosh, Distinguished Fellow and Director, Earth Science and Climate Change Division, TERI

Panelists:

- **Dr Trond Vedeld**, Senior Development Researcher, Norwegian Institute for Urban and Regional Research (NIBR)
- **Shri R A Rajeev**, Principal Secretary, Environment Department, Government of Maharashtra

- **Dr Trude Rauken**, Research Fellow, Center for International Climate and Environmental Research – Oslo (CICERO)
- **Dr Seleshi Bekele Awulachew**, Senior Water and Climate Specialist, African Climate Policy Center (ACPC)

Special remarks:

- **HE Mr Lars Andreas Lunde**, Deputy Minister of Climate and Environment, Norway

Concluding remarks: **Dr Prodipto Ghosh**, Distinguished Fellow and Director, Earth Science and Climate Change Division, TERI

In his opening remarks, Dr R K Pachauri thanked the Royal Norwegian Embassy for their collaboration on the EVA Project, a remarkable example of science and knowledge that can be used for the benefit of the people. The session began with an overview on the EVA Project, with a discussion of its objectives and research activities, including the methodology, impacts, and policy recommendations in the context of the 2013 drought in Jalna District, Maharashtra. The main goal of the project is to assess the enabling conditions for effective community-based adaptation to the impact of extreme events at the community level. It was suggested that Panchayats should be given more power and financial support so that they have greater autonomy to make their own decisions, but for this a proper information system for weather forecasting and agriculture at the village level needs to be implemented. There was also a discussion on the climate change adaptation plans and policies for dry land areas in Africa. The EVA booklet was launched in this session.

Roundtable on Mining within the Sustainable Development Framework



Welcome Address: **Dr R K Pachauri**, Director General, TERI

Chair: **Sir Jonathon Porritt**, Founder Director, Forum for the Future

Participants:

- **Mr P K Mukherjee**, Executive Director, Sesa Sterlite Limited, Vedanta Resources plc
- **Mr Tuhin Mukherjee**, Managing Director, Essel Mining Industries Limited and Chairman, Mining Committee, FICCI
- **Mr R K Bansal**, CEO, Sustainable Mining Initiative, FIMI
- **Mr Hem Pande**, Additional Secretary, Ministry of Environment and Forests, Government of India
- **Mr P Balakrishnan**, CEO, Anglo American plc India & Head of Mining Committee, CII
- **Mr Neil Marshman**, Chief Consultant, Rio Tinto
- **Mr D S Mishra**, Joint Secretary, Ministry of Mines
- **Dr N R Ramesh**, Additional Director General, Geological Survey of India
- **Mr Amit Kumar Ray**, Director, Geological Survey of India
- **Mr Ranjan Sahai**, Chief Controller, Indian Bureau of Mines
- **Ms Neena Singh**, Partner, Environmental Resources Management

- **Dr P K Anand**, Senior Advisor, Mines, Planning Commission
- **Mr S Vijay Kumar**, Distinguished Fellow, TERI
- **Dr Ajay Dua**, Former Secretary, Ministry of Commerce and Industry
- **Mr Martin Wright**, Editor in Chief, Green Futures, Forum for the Future

The session began with a discussion on wealth generation in the mining sector in a manner where ecosystems are respected and the sustainable development framework is incorporated. There was a consensus that this utopian scenario is irrelevant as there is no alternative framework available for mining.

A key challenge posed was the interpretation of inter-generational equity, specifically where raw material extraction is from a finite source. Other challenges lay in the areas of governance and democratic processes.

In the context of recent judicial interventions in the mining sector, it was stated that there are adequate laws and regulations but their implementation has failed, and therefore, robust governance is required. It was also suggested that the legislative framework be trimmed and the laws be simplified; however, this was argued to be non-negotiable on sustainability measures. At the same time, the contribution of mining to the economy was recognized as a necessity for economic survival.

Social licenses or approval for mining entities was emphasized, and a case was made for adding the concept of mineral security to the theme of the discussion. It was also observed that only a very small percentage of ore is extracted legally, thus indicating issues with demand-side management. It was also noted that there was no regional impact assessment, nor any integrated model of appraisal or governance. A key problem area identified was the significant gap between the state and the federal governments with respect to regulating mining.

Two key bottlenecks identified in the Indian mining sector in the context of implementation of a sustainable development framework were the small scale of mine operations on the whole and the distribution of pocket licenses in specific areas. Some good international practices, such as recycling of water, constant reporting on sustainability issues by mining companies, and the engagement of multiple stakeholders in meaningful dialogue were suggested. With respect to recent and current initiatives by Indian players, the Geological Survey of India highlighted geotechnical innovations in the form of mineral belt surveys, coal bed methane gasification, etc.

The historical regulatory framework was stated to lay down the context for the best way forward for India to develop mining practices within the sustainable development framework. Total number of leases granted was around 11,000, out of which only 1,000 were found to be large-scale mining operational leases. A future direction was envisioned, focusing on cumulative impacts of mining clusters and a concentration on the quality of information collected for reporting, possibly by having better processes in place. It was noted that in some instances, good work was being done with respect to mine closure activities, but these were weakly documented. Limitations in terms of meagre endowment of mineral resources of the country and complicated procedures for mergers and acquisitions were mentioned as challenges.

Key Lessons from CDKN-START Research on Disaster Risk Reduction and Climate Change Adaptation in South Asia

A CDKN, START and TERI Co-Presentation



The Research on Disaster Risk Reduction and Climate Change Adaptation in South Asia thematic track in progress.

Welcome and Introduction: **Mr Ali Tauqueer Sheikh**, CDKN Asia Director

Opening Remarks: **Sri T Nandakumar**, Member, National Disaster Management Authority (NDMA)

Panelists:

- **Mr Anshu Sharma**, SEEDS India
- **Ms Laxmi Devkota**, Nepal Development Research Institute
- **Ms Sarala Khaling**, ATREE India
- **Mr Mihir Bhatt**, Director of All India Disaster Mitigation Institute (AIDMI)

- **Mr Shiraz Wajih**, Gorakhpur Environmental Action Group
- **Mr Rab Nawaz**, WWF-Pakistan
- **Ms Sumana Bhattacharya**, Inter Cooperation India
- **Ms Ulka Kelkar**, Fellow, Centre for Global Environment Research, The Energy and Resources Institute (TERI)
- **Mr Hassan Virji**, Executive Director, START

This session had speakers talking about the research programme on ‘Ability of Local Multi-stakeholder Action to Catalyze Shifts in Program and Policy Environment to Mainstream Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA)’, implemented in the arid regions of Leh and Barmer. They discussed measures to deal with the problems of disaster management, including utilizing traditional knowledge and using innovative solutions such as artificial glaciers to counter water woes, and organizing community climate schools to monitor local climate variability.

The case study of integration of DRR and CCA in Gorakhpur was taken up, where a study was conducted to identify systemic factors contributing to vulnerability and resilience, as well as DRR policies. It helped the administration develop a District Disaster Reduction Plan integrating CCA, and promote a Shared Learning Dialogue between local communities and the scientific community. The project on linking DRR and CCA in the Eastern Himalayas, with a focus on Sikkim, Darjeeling, and Eastern Nepal, was also discussed. The discussion on the Kosi Basin study outlined the vulnerability assessment and measures required for incorporating DRR considerations in the region. The study on mainstreaming DRR and CCA in the Indus eco-region involved as an assessment of the comparison of the total assets of the communities before and after flooding. Various approaches for CCA and DRR were also highlighted. They discussed the key measures that can be taken up by SAARC to deal with DRR at the regional level, including data sharing, transfer of technologies, and safety nets.

Adaptive Development for the Sustainability of Asia: Research and Practice

A Keio University, IGES & TERI University Co-Presentation



L–R: Prof. Dr. Gürkan Kumbaroglu; Dr Brendan Barrett; Prof. Arabinda Mishra; Prof. Hironori Hamanaka; Prof. Kimio Uno; Prof. P K Joshi; Mr Kenta Usui; Prof. Prateek Sharma; and Prof. Mario Tabucanon

Chair: Prof. Kimio Uno, Executive Supervisor, LEAD Japan Asia Pacific Initiative; Dean, Faculty of Policy Management, Keio University, Japan & Visiting Faculty, TERI University

Co-Chair: Prof. P K Joshi, Head, Department of Natural Resources, TERI University

Keynote Address: Importance of Adaptive Development for Achieving Sustainability

- **Prof. Hironori Hamanaka**, Chair of the Board of Directors, Institute for Global Environmental Strategies (IGES)

Panelists:

- **Prof. Dr. Gürkan Kumbaroglu**, Bogaziçi University
- **Mr Kenta Usui**, Policy Researcher in Climate and Energy, Institute for Global Environmental Strategies (IGES)
- **Prof. Arabinda Mishra**, Dean, Faculty of Policy Studies, TERI University
- **Prof. Mario Tabucanon**, Visiting Professor, United Nations University Institute for the Advanced Study of Sustainability & Emeritus Professor, Asian Institute of Technology
- **Dr Brendan Barrett**, Academic Programme Officer, Head of Communications, United Nations University Office of Communications
- **Prof. Prateek Sharma**, Dean Faculty of Applied Sciences, TERI University

This track was divided into two parts: Science and Policy Interface, and Field-based/Project-based Learning, and Action Research. Prof. Hironori Hamanaka spoke about the UN Conference on Sustainable Development (2012) and how its outcomes are leading to a global agenda around Sustainable Development Goals (SDGs). Dr Gurukan Kumbaroglu presented the pioneering research and multi-layered collaboration model that his university is working on to reduce carbon dioxide emissions and encourage sustainable development. There were discussions on some policy perspectives on climate change and adaptive development measures, as well as on how science interacts with policy-making. The idea of leadership for sustainability was explained, which can help design the desired future and communicate messages in a way that everybody understands. There was deliberation on innovative approaches for communicating complex scientific issues, with speakers stating that scientists need to engage with the public and share knowledge. The need for project-based learning and action research was also discussed, along with examples to tackle environmental and social problems.

High Level Dialogue for Energy, Water, and Food Security

A Jain Irrigation Systems Limited and TERI Co-Presentation



L–R: Mr Anil Jain; Mr Onno Ruhl; HE Dr Sanjaasuren Oyun; Mr D K Manavalan; and Mr Gajendra Haldea.

Welcome address: Dr R K Pachauri, Director–General, TERI

Keynote Address by the Guest of Honour:

- **HE Dr Sanjaasuren Oyun**, Minister of Environment and Green Development, Mongolia

Thematic Addresses:

- **Mr Gajendra Haldea**, Adviser to DCH (Infrastructure), Planning Commission, India

- **Mr Onno Rühl**, India Country Director, The World Bank
- **Mr D K Manavalan**, Executive Director, AFPRO, New Delhi

Presentations:

- **Mr Anil Jain**, Managing Director, Jain Irrigation Systems Ltd
Presentation on Resource Centre on Water Use Efficiency of TERI-JISL
- **Mr Anshuman**, Associate Director, Water Resources Division, TERI

Vote of Thanks: **Dr Girija Bharat**, Fellow, Water Resources Policy & Management, TERI

Addressing issues stemming from the intrinsic link between water, food, and energy security, this track provided some innovative and interesting solutions. Speakers pointed out that as countries are moving further up the economic growth scale, there is going to be a shift in consumption patterns leading to a high demand for energy and water. Emphasis was laid on using water economically, with gains in water resource efficiency coming from better pricing. The session featured a presentation highlighting innovative micro irrigation systems developed by Jain Irrigation Systems Ltd, such as drip irrigation systems, promising ‘more crop per drop’. The vulnerabilities of the Ganga river basin were discussed, along with issues of groundwater management and problems relating to canal irrigation, with the recommendation that participatory approaches must be used for the transfer of water-saving devices and knowledge to the grassroots. Utilizing Geographic Information Systems (GIS) efficiently to account for different geo-thermo regimes, and scaling up maps to increase accuracy at the planning stage were also suggested. TERI gave a presentation talking about the vision, framework of operation, and multi-stakeholder engagement emanating from the TERI-JISL MoU.

First TERI-ICCT Lecture: *Transportation Should Never Be Addressed in Isolation!*

An International Council on Clean Transportation (ICCT) and TERI Co-Presentation



L–R: Dr R K Pachauri; Prof. S Sundar; Sir Jonathon Porritt; and Mr Sumit Sharma

- *Welcome address: **Dr R K Pachauri**, Director General, TERI*

Address on the TERI-ICCT partnership:

- **Prof. S Sundar**, Distinguished Fellow, TERI

Lecture on “Transportation Should Never Be Addressed in Isolation!”

- **Sir Jonathon Porritt**, Founder Director, Forum for the Future

*Vote of thanks: **Mr Sumit Sharma**, Fellow, Centre for Environmental Studies*

Prof. S Sundar chaired and moderated this session, pointing out the simple fact that transport holds the nation together. Transport should be used as a means of access to education, tourism, agriculture, industry, etc. It supports economic development and is the second largest energy consuming sector in India. It is also an emitter of particulate matter, black carbon, and oxides of nitrogen, among other gases, that usually have a detrimental impact on human health. Recognizing the enormity of the problem, TERI and ICCT have entered into an MoU to work towards creating awareness on improved fuel quality and air quality, and cleaner vehicular emissions among the general population. They have already organized civic forums in Bengaluru, Ahmedabad, Delhi, and Kolkata and there are further plans to organize more of

these forums in various other cities. Sir Jonathon delivered the first TERI-ICCT Lecture titled, 'Transportation Should Never be Addressed in Isolation'. He discussed the importance of sustainable transportation and stressed that this sector was being neglected throughout the world. He quoted Amory B Lovins' book, *Reinventing Fire: Bold Business Solutions for the New Energy Era*.

He also quoted from his book, *The World We Made: Alex McKay's Story from 2050*. He stated that although innovation is rapidly taking place in the field of aviation, it is moving at a snail's pace in road transportation. He also stressed that biofuels are playing a significant role in decarbonizing the transport sector. Sir Jonathon Porritt highlighted the three main problems in the transportation sector, namely infrastructural locking; mindset locking; and lack of capacity within policy-makers today. The TERI-ICCT Lecture Series envisages organizing one annual lecture by an eminent personality to inform civic society about cleaner air quality and better fuel options.

SOCIAL EVENTS

Cultural Evening: February 7, 2014

DSDS not only presents the Summit delegates with the opportunity to apprise themselves of the very latest on aspects of sustainability but also an opportunity to taste the very best of Indian culture. The design theme for the Summit literature, website, and stage were inspired by the art of the Warli tribe from the Indian state of Maharashtra. The cultural evening hosted on the second day of the Summit, witnessed performances of a diverse range of Indian folk dances. The performances provided the audience a glimpse of the cultural diversity that constitutes India.

The dances included the famous Phag dance of the state of Haryana. Performed to the sounds of Tasha, Nagara, and Dhol this is common during the month of Phagun, coinciding with the Gregorian months of February–March. The next performance was Kalbelia, a Rajasthani folk dance, performed by a tribe of the same name. The Kalbelia dance is a hallmark of all joyous celebrations of the Kalbelia community.

The ever popular Bhangra, a form of dance well-known around the globe, not only drew the evening to a close but also had many from among the audience dancing and jiving on-stage with the performers. Bhangra, native to Punjab, is traditionally performed to mark a good harvest. Bhangra involves people singing Boliyaan and dancing to the tune of Dhol.



LAUNCHES

India-California Air-Pollution Mitigation Program (ICAMP) Statement for DSIDS



L–R: Dr R K Pachauri; Dr Pradeep Khosla; Mr Ken Alex; Mr Achim Steiner; Prof. V Ramanathan; Mr Phil Marker; and Mr I H Rehman

This session marked the launch of an initiative that will help transform the lives of millions of people. India's two major sources of air pollution are vehicular pollution in urban areas and indoor smoke from stoves in rural areas. TERI had been involved in the successful research and development of a smoke-free firewood stove. However, the cost of it is staggeringly high at \$70. In order to help replace the existing stoves in rural Indian households, carbon credit shares of upto \$30 per stove will be offered by collaborating with the University of California. The collaboration will help attract funds and manpower to increase the span of usage of this stove to millions of rural households in India.

Launch of Planet for Life Series — Innovation for Sustainable Development



L–R: Mr Jean-Yves Grosclaude; Dr R K Pachauri; Dr Damien Demailly.

The fifth edition of *A Planet for Life Series*, '*Innovation for Sustainable Development*' was launched by Mr Jean-Yves Grosclaude, Executive Director (Strategy), Agence Française de Développement; Dr Damien Demailly, Coordinateur du programme Nouvelle Prospérité, IDDRI; and Dr R K Pachauri, Director-General, TERI. Forty authors have contributed to the chapters of this book, which explains how innovations help shape and speed up sustainable development.

Innovation has become the new buzzword across the globe. International organizations, governments, corporates, academia, and civil society see it as the answer to the major economic, social, and environmental transformations challenging the models of the 20th century.

What is the real potential of emerging technologies and alternative models? Does the rapid deployment of innovations lead towards a more sustainable and inclusive society? Can innovations and the emerging alternatives replace conventional models? Beyond technologies, what institutional innovations are required to support sustainable development?

The 2014 edition of *A Planet for Life Series* aims to answer these questions and explore innovation in all its aspects, through a series of texts written by international experts.

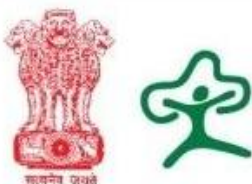
SPECIAL EVENTS

The following table lists the special events held alongside and in the run-up to the 2013 Summit:

Event	Partners	Date
YUVA Meet – ‘ <i>Innovations for a Sustainable Future – Transforming Learning into Action</i> ’	Ministry of Youth Affairs and Sports, Government of India	3–4 February
EU-India Brokerage Event on Bioeconomy and SAHYOG Stakeholder Conference	European Commission and Department of Biotechnology, Government of India	3–4 February
Policy Conclave on Reducing Vehicular Emissions to Improve Air Quality	World Bank	4–5 February
Accelerated dissemination of thermal biomass gasifiers in MSME’s: Essential market conditions and policy requirements	Swiss Agency for Development and Cooperation (SDC)	4 February
International Brainstorming Session on “Barriers to, and Capacity Building Needs for, Achieving Sustainable Energy for All”	Sustainable Energy for All (SE4All)	5 February
Stakeholder Engagement to Fast Track Grid Connected Projects under JNNSN	DFID and REEEP	5 February
Sustainable Consumption and Production: An overarching objective of sustainable development	DFID	5 February
Forest-based Carbon-financing	Ministry of Environment and Forests (MoEF) and IORA	5 February
Towards Realizing Potential of REDD Plus in South Asia	Ministry of Environment and Forests (MoEF) and ICIMOD	6 February
Managing Water Security for Himalayan Communities	ICIMOD	7 February
Nexus of biodiversity with food, nutritional and livelihood security	Louis Dreyfus Foundation	7 February

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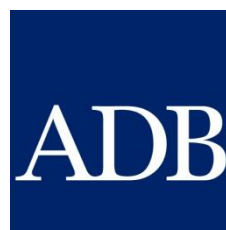


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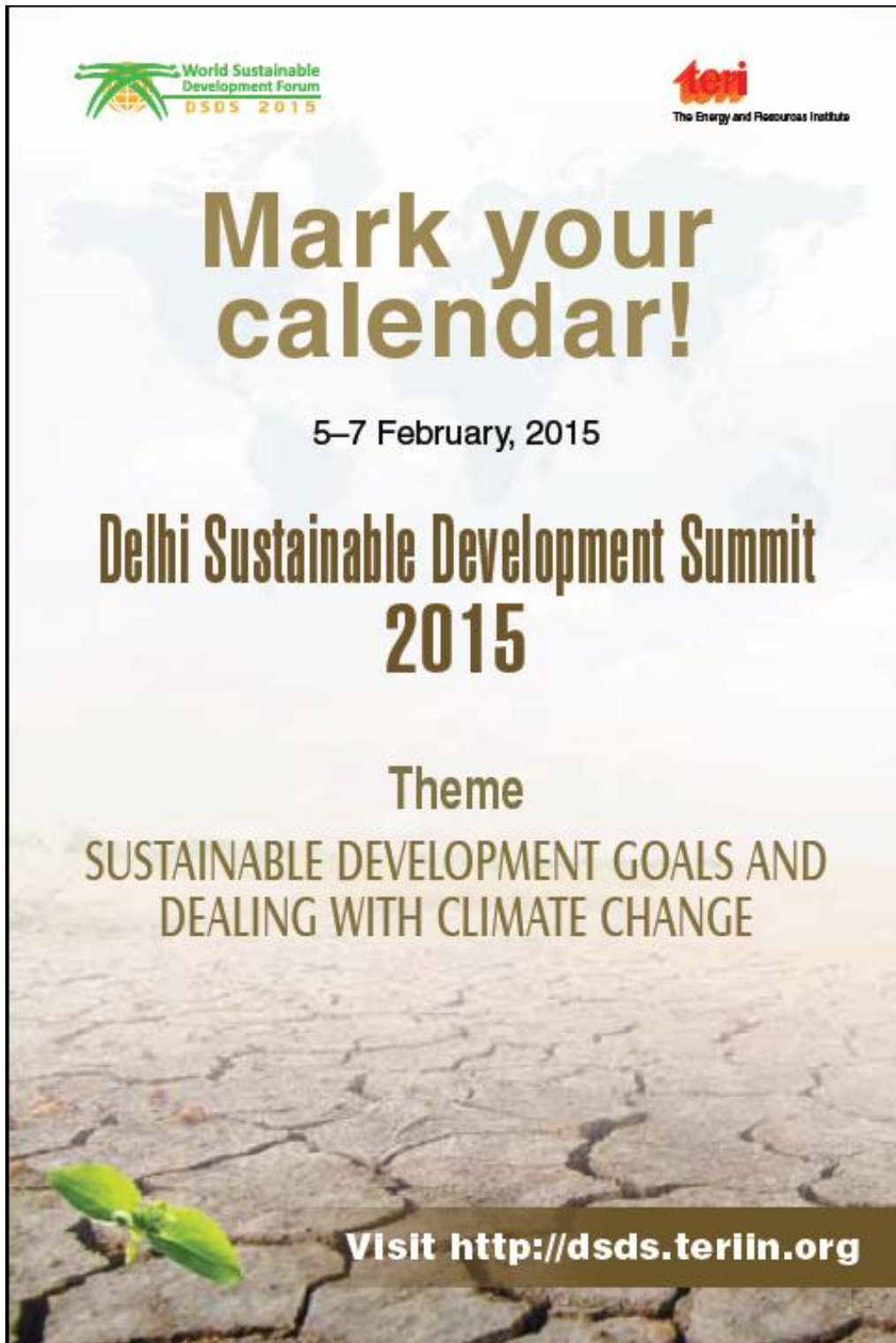



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DELHI SUSTAINABLE DEVELOPMENT SUMMIT 2015



 World Sustainable Development Forum
DSDS 2015

 **teri**
The Energy and Resources Institute

Mark your calendar!

5–7 February, 2015

Delhi Sustainable Development Summit 2015

Theme

SUSTAINABLE DEVELOPMENT GOALS AND
DEALING WITH CLIMATE CHANGE

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