



Climate Change Community



Community Update
No. 60: 2nd January, 2015
In this Issue

FROM THE RESOURCE PERSON

Dear Members,

Best wishes for a happy and prosperous, 2015!!

We are delighted to present the 60th Edition of the Community Update, today.

We thank you for your continued cooperation and support to this endeavor of knowledge sharing amongst all of you.

The Action Groups that concluded last month are :

- **Easy (not so easy) Solutions to Address Climate Change and Developing tools**
- **Guidelines to assess the Carbon Neutrality and Sustainability of Educational Campuses (CNSEC).**

Your support and cooperation in ensuring the success of the above Action Groups is gratefully acknowledged.

The stakeholders workshop held on 16th December, 2014 to discuss the Compendium of Easy (not so easy) Solutions to Address Climate Change highlighted the following issues:

- Parameters like Usefulness & Cost Effectiveness should be evaluated to finalize any of the technologies/strategy. Both these parameters will provide feasibility of its application in the area.
- Based on the above consideration, it was seen that the Lighting & Water Heating are best suited for Solar Energy and then the decentralized generation of energy.
- It was also highlighted that compendium should have examples w.r.t. execution and its best practices.
- Cook Stoves have been distributed by concerned Ministry / Agencies in India, but different usage pattern in different parts of country makes it non-feasible option for all regions with same design. In the same way, other technologies and strategies should be looked w.r.t locations and community.
- For techniques like Rain Water Harvesting, cost should also be made a part of compendium.
- There is a requirement to showcase in the Compendium the Specification of technique / product with understanding of its working.
- Compendium should also guide the users about the working and adaptability of technology /

strategy / product as per their respective working conditions.

The stakeholders workshop held on 16th December, 2014 to discuss the Guidelines / Toolkit to establish Carbon Neutral & Sustainable Educational Campus highlighted the following issues:

- The whole procedure of Carbon Footprint and Sustainability Index analysis should involve 3rd party audit which will make it a robust system to be followed.
- There is necessity of first 10 pilot projects to be registered. This will provide the required benchmarks for different indicators and could also share best practices among the practitioners.
- It was made clear that Emission Factors to be considered while calculations need to be precise.
- There was suggestion to include education on HIV/AIDS.
- Few group members suggested to have boundary / definition of campus in place .
- It was discussed that few of the indicators will be made mandatory so as to make it more robust.
- Score system should be made more rationale while keeping in mind the execution/operations of any campus and practical approach.
- Though the system is voluntary, it should showcase some business case which can provide understanding in terms of cost and monetary benefits.
- It was suggested that the whole study for a campus can be divided in two parts – Quick Assessment (to give brief understanding and set the priorities for campus) & second one with Detailed Analysis.
- There was a suggestion to add Wood as a fuel in carbon footprint analysis for campus with its respective emission factor.
- It was recommended by one group that the basis of Energy Consumption should be made clear whether it is based on per capita or per sq.m. of campus.

On 16th December, 2014 the Resource Group Meeting & Way Forward for the Climate Change Community was discussed. The major points that emerged from the discussions include:

- Representatives from MSME sector and under graduates needs to be considered for inclusion in the climate change community which would facilitate including young talent in the group.
- It was suggested that there is an immediate need to form 2-3 different core groups with focus on one element (e.g., Energy, Water, Waste) and come out with action plans for the future within a stipulated time frame.
- There is requirement of creating a repository of all best practices in different areas and this could be linked to Solutions Exchange. It could be supported by creating a knowledge bank in which all the resource group members will cooperate to make it more useful for the end users.
- Resource Group should support and cooperate in making the Compendium to tackle climate change more useful, keeping in view their experiences and shared practices.
- There is an urgent need to have an online solution group (online portal/discussion forum) which can provide expert comments/views on various aspects linked to the subject of climate change.
- It was recommended that meeting of this resource group should be organised every 6 months or at least once in a year.

We look forward to hearing from you at the earliest.

Thanks & best regards,
Ramesh Kumar Jalan
Resource Person & Moderator
Climate Change Community,
Solution Exchange-India
United Nations Development Programme
New Delhi

DEVELOPMENT IN THE SECTOR

Sustainability Outlook: The Year that was and the Year Ahead.

2014 for India was defined with Narendra Modi emerging center-stage post a historic election victory in May, and since then, the new government has been actively promoting certain schemes (with synonymous buzz-words like 'Make in India', 'Namami Gange', 'Digital India' and 'Swachh Bharat') which are likely to witness great uptake in 2015 fuelled by government regulations and policies.

Simultaneously, **the international climate change fraternity has been gearing up for the 21st Conference of Parties to be held in Paris in December 2015, where it is expected that legally binding goals for reduction of carbon emissions will be set for all nations for the first time.**

Due to the agreement reached in Lima, every nation has to now come up with plans to reduce the carbon intensity of their economy. With the global spotlight now on India, **the thrust will continue to remain on increasing share of renewable energy generation and improving energy efficiency in industries and facilities.**

Given below are the top sustainability thrust areas for India in 2015:

1. Sustainable energy = Rise of Renewable energy

One of the provisions in the Electricity Amendment Bill that has been introduced in the Lok Sabha this December is that thermal power plants have to compulsorily generate energy from renewable sources. The bill also seeks to raise fines for non-compliance of Renewable Purchase Obligations by electricity distribution companies from Rs. 0.1 million to Rs. 10 million. There have also been talks of a Renewable Energy Bill which would overhaul the transmission and distribution systems as well as encourage indigenous manufacturing of renewable energy equipment with the provision of 100% tax breaks in order to ensure that 15% of the country's power requirement is addressed through renewable energy sources by 2020. Thus, it is quite clear that like in 2014, Renewable Energy Generation will continue to remain the key thrust area of Sustainability for the Indian government.

2. Time for Railways, Refineries and Power distributors to get PAT on the back

Energy Efficiency will continue to remain a priority area in 2015 with the first round of the PAT (Perform- Achieve- Trade) Scheme covering the aluminum, cement, chlor-alkali, fertiliser, iron & steel, paper & pulp, thermal power and textiles sectors coming to an end in March 2015. The year will also see the commencement of the second phase of the PAT scheme which will bring under its ambit three more heavily polluting industries- railways, oil refineries and power distributors. It will also increase its coverage of the existing sectors. Overall, all the plants in the six sectors were to achieve a 4.05 per cent reduction in the average energy consumption by 2014-15. This was

estimated to reduce annual energy consumption by 6.69 million tonnes-of-oil-equivalents (mtoe) at the end of Phase 1. BEE reports show that in 2013-2014 annual energy savings worth 4.12 mtoe were already achieved and 217 of the 478 plants (45%) have already met their targets and another 60 plants are well on their way to do so. BEE expects that there will be overall compliance with the scheme, with some amount of trading of the Energy Savings Certificates to meet targets. The units failing to meet their targets will incur a penalty of Rs. 1 million.

3. Subsidy for Electric Vehicles to revive the slow EV market in India

It is expected that a subsidy scheme of Rs. 10 billion will be approved by the finance ministry early in 2015 to revive the lackluster EV market in India. The National Mission for Electric Mobility 2020 was launched in January, 2013 for fostering adoption and manufacture of electrical vehicles (including hybrid vehicles) and aims to sell 6-7 million units of EVs by 2020. When the subsidy was cancelled, it saw a sharp decline in Electric Vehicle sales in the country, but its re-introduction is expected to boost the market again. Companies like Mahindra & Mahindra, Terra Motors and Tesla are already gearing up to meet the increased demand of Electric Vehicles once the subsidy scheme comes into place. Overall, this is expected to impact both the consumers and the automotive sectors, and might even affect the Oil & Gas sector to some extent in the long run.

4. Water sustainability would become new mantra for Industries

In his first speech after becoming the PM, Narendra Modi spoke of cleaning up the nation's rivers. India is slowly waking up to the fact that water, not coal or oil, may well emerge as the most critical natural resource for the nation's progress. Subsequently, the Clean Ganga Fund and Namami Gange program to clean up the Ganges have been launched. One of the key provisions of this scheme is making Zero Liquid Discharge mandatory for all highly polluting industries releasing effluents into tributaries of the Ganga. Industrial waste- water treatment will emerge as a crucial factor for many industries, with norms getting stricter and adversely affecting units who have not put adequate checks in place till now for ensuring that the waste-water they discharge meets certain minimum criteria.

5. India goes Digital in 2015

The new government is putting unprecedented importance on e-governance and making processes 'smarter'. There is a lot of focus on removing operational hurdles by leveraging the power of the internet and mobile phones to make way for a government and a nation that is truly in the digital age. The Digital India vision is meant to have a nation that is connected through the cloud- no more running around for papers, verifications or submissions. This thrust on connectivity will bring about a radical shift in the way public and municipal services are provided and managed, thereby reducing inefficiencies and saving time, money (in the form of bribes), and fuel. The Digital India campaign is expected to provide a huge boost to the telecommunication and IT industry, while empowering people by according them access to services and information.

We hope that the above advancements together with strong government and corporate leadership will pave the way for making India a more sustainable economy in 2015.

SUMMARY OF THE LIMA CLIMATE CHANGE CONFERENCE : 1-14 DECEMBER 2014

The article is available at: <http://www.iisd.ca/vol12/enb12619e.html> .

The Lima Climate Change Conference brought together over 11,000 participants, including approximately 6,300 government officials, 4,000 representatives from UN

bodies and agencies, intergovernmental organizations and civil society organizations, and 900 members of the media.

Negotiations in Lima focused on outcomes under the ADP necessary to advance towards an agreement in Paris at COP 21 in 2015, including elaboration of the information, and process, required for submission of intended nationally determined contributions (INDCs) as early as possible in 2015 and progress on elements of a draft negotiating text. Following lengthy negotiations on a draft decision for advancing the Durban Platform for Enhanced Action, COP 20 adopted the 'Lima Call for Climate Action,' which sets in motion the negotiations in the coming year towards a 2015 agreement, the process for submitting and reviewing INDCs, and enhancing pre-2020 ambition.

Parties also adopted 19 decisions, 17 under the COP and two under the CMP that, inter alia: help operationalize the Warsaw International Mechanism for Loss and Damage; establish the Lima work programme on gender; and adopt the Lima Declaration on Education and Awareness Raising. The Lima Climate Change Conference was able to lay the groundwork for Paris next year, by capturing progress made in elaborating the elements of a draft negotiating text for the 2015 agreement and adopting a decision on INDCs, including their scope, upfront information, and steps to be taken by the Secretariat after their submission.

WARSAW INTERNATIONAL MECHANISM FOR LOSS AND DAMAGE ASSOCIATED WITH CLIMATE CHANGE IMPACTS: In its decision, the COP, inter alia:

- approves the initial two-year workplan of the Executive Committee of the Warsaw International Mechanism for Loss and Damage;
- notes the useful inputs provided by parties, observers and other organizations as part of the transparent, inclusive and participatory process of developing the initial two-year workplan of the Executive Committee;
- reaffirms the establishment of the Executive Committee of the Warsaw International Mechanism, under the guidance of, and accountable to, the COP, to guide the implementation of the functions of the Warsaw International Mechanism;
- also reaffirms the request to the Executive Committee to report annually to the COP through the SBSTA and SBI and make recommendations, as appropriate;
- decides that the Executive Committee shall be composed of the following, taking into account the goal of gender balance, 10 members from Annex I parties and 10 members from non-Annex I parties, comprising two members each from the African, Asia-Pacific, and the Latin American and Caribbean States, one member from SIDS, one member from LDCs, and two additional non-Annex I members;
- encourages parties to nominate to the Executive Committee experts with a diversity of experience and knowledge relevant to loss and damage associated with climate change impacts;
- decides that the members shall serve for a two-year term and shall be eligible to serve a maximum of two consecutive terms of office, and that half of the members shall be elected initially for a term of three years and half for two years, thereafter the COP shall elect members for a term of two years, and the members shall remain in office until their successors have been elected;
- also decides that the Executive Committee may establish expert groups, subcommittees, panels, thematic advisory groups or task-focused ad hoc working groups, to help execute the work of the Executive Committee in guiding the implementation of the Warsaw International Mechanism, as appropriate, in an advisory role, and that report to the Executive Committee;
- further decides that decisions of the Executive Committee shall be taken by consensus;
- decides that the Executive Committee shall elect annually co-chairs from among its members to serve for a term of one year, with one being from an Annex I party and the other being from a non-Annex I party;

- further decides that the Executive Committee shall meet at least twice per year, while retaining its flexibility to adjust the number of meetings, as appropriate;
- decides the Executive Committee shall convene its first meeting as soon as practical following the election of its members by COP 20, but no later than March 2015, and at its first meeting shall adopt its rules of procedure and begin implementing its workplan;
- also decides that the meetings of the Executive Committee shall be open to attendance by admitted observer organizations, except where otherwise decided by the Executive Committee, with a view to encouraging a balanced regional representation of observers; and
- further decides that the decisions and outputs of the Executive Committee shall be made publicly available on the UNFCCC website unless decided otherwise by the Executive Committee, that English shall be the working language, and that the Secretariat shall support and facilitate the work of the Executive Committee, subject to the availability of resources.

On activities and performance of the TEC in 2014, the COP, inter alia:

- welcomes the rolling work plan of the TEC for 2014-2015 and the progress made in advancing its implementation;
- recognizes the key messages on climate technology financing, technologies for adaptation and technology needs assessments, as contained in the TEC report;
- welcomes the work on technologies for adaptation and looks forward to the Committee's work on technologies for mitigation;
- requests the TEC to continue its work on enabling environments and barriers;
- encourages the TEC to continue to strengthen the linkages with organizations under and outside of the Convention in the implementation of its rolling workplan for 2014-2015; and
- requests the TEC to provide guidance on how the results of the technology needs assessments, in particular the technology action plans, can be developed into projects that can be ultimately implemented, and to provide an interim report on its preliminary findings to the subsidiary bodies at their forty-third sessions.

On activities and performance of the CTCN in 2014, the COP, inter alia:

- welcomes with appreciation the progress made by the CTCN in implementing its programme of work, including by: responding to requests from developing countries; fostering collaboration and access to information; and strengthening networks, partnerships and capacity building;
- welcomes the elaboration and approval by the CTCN's Advisory Board of the CTCN criteria and the CTCN prioritization criteria for national designated entity requests;
- encourages the CTCN to further elaborate its procedures for handling requests, and to inform parties and stakeholders of these activities in the joint annual report of the TEC and the CTCN;
- notes the ongoing consultations between the GEF and the CTCN, and requests the CTCN to report on those consultations in future joint TEC/CTCN annual reports.

COP 20 CLOSING PLENARY: On Friday, 12 December, the COP 20 closing plenary convened in the morning to adopt agreed items. The closing plenary was suspended at 1:18 pm. On Saturday, 13 December, the closing plenary resumed at 5:20 pm to consider the Warsaw International Mechanism for Loss and Damage and matters related to finance. The closing plenary was suspended at 5:50 pm. At 11:37 pm the closing plenary briefly resumed for the introduction of the draft decision on advancing the Durban Platform for Enhanced Action (FCCC/CP/2014/L.14). The session was suspended at 11:53 pm for parties to review the text. On Sunday, 14 December, the closing plenary resumed and adopted the decision on advancing the Durban Platform for Enhanced Action, renamed the 'Lima Call for Climate Action' at 1:23 am.

The complete article is available at: <http://www.iisd.ca/vol12/enb12619e.html>

In its decision, the Lima Call for Climate Action, the COP:

- reiterates that the work of the ADP shall be under the Convention and guided by its principles;
- recalls the objective of the Convention;
- recalls all the relevant decisions of the COP, particularly Decisions 1/CP.17, 2/CP.18 and 1/CP.19;
- affirms its determination to strengthen adaptation action through the protocol, another legal instrument or agreed outcome with legal force under the Convention to be adopted at COP 21;
- recalls Decisions 2/CP.19 and X/CP.20 and welcomes the progress made in Lima, Peru, towards the implementation of the Warsaw International Mechanism for Loss and Damage; and
- notes with grave concern the significant gap between the aggregate effect of parties' mitigation pledges in terms of global annual emissions of GHGs by 2020 and aggregate emission pathways consistent with having a likely chance of holding the increase in global average temperature below 2°C or 1.5°C above pre-industrial levels.
- In paragraphs on advancing the work of the ADP and elaborating a negotiating text for the 2015 agreement, the COP:
- confirms that the ADP shall complete the work referred to in Decision 1/CP.17, paragraph 2, as early as possible in order for COP 21 to adopt a protocol, another legal instrument or an agreed outcome with legal force under the Convention applicable to all parties;
- decides that the protocol, another legal instrument or agreed outcome with legal force under the Convention applicable to all parties shall address in a balanced manner, inter alia, mitigation, adaptation, MOI and transparency of action and support;
- underscores its commitment to reaching an ambitious agreement in 2015 that reflects the principle of CBDRRC, in light of different national circumstances;
- urges developed country parties to provide and mobilize enhanced financial support to developing country parties for ambitious mitigation and adaptation actions, especially to parties that are particularly vulnerable to the adverse effects of climate change, and recognizes complementary support by other parties;
- acknowledges the progress made in Lima in elaborating the elements for a draft negotiating text as contained in the annex to the decision, including a footnote that states: "These elements for a draft negotiating text reflect work in progress. They neither indicate convergence on the proposals presented nor do they preclude new proposals from emerging in the course of the negotiations in 2015;"
- decides that the ADP will intensify its work, with a view to making available a negotiating text for a protocol, other legal instrument or an agreed outcome with legal force under the Convention applicable to all parties before May 2015; and
- requests the Secretariat to communicate the negotiating text, referred to above, to parties in accordance with provisions of the Convention and the applied rules of procedure, while noting that such communication will not prejudice whether the outcome will be a protocol, another legal instrument or an agreed outcome with legal force under the Convention applicable to all parties.
- In paragraphs on INDCs and their communication, the COP:
- notes that the arrangements specified in this decision in relation to INDCs are without prejudice to the legal nature and content of the INDCs of parties or to the content of the protocol, another legal instrument or agreed outcome with legal force under the Convention applicable to all parties;
- reiterates its invitation to each party to communicate to the Secretariat its INDC towards achieving the objective of the Convention;

- agrees that each party's INDC towards achieving the objective of the Convention will represent a progression beyond the current undertaking of that party;
- also agrees that the LDCs and SIDS may communicate information on strategies, plans and actions for low GHG emission development reflecting their special circumstances in the context of INDCs;
- invites all parties to consider communicating their undertakings in adaptation planning or consider including an adaptation component in their INDCs;
- reiterates its invitation to all parties to communicate their INDCs well in advance of COP 21 (by the first quarter of 2015 by those parties ready to do so) in a manner that facilitates the clarity, transparency and understanding of the INDCs;
- agrees that the information to be provided by parties communicating their INDCs, may include, as appropriate, inter alia, quantifiable information on the reference point (including, as appropriate, a base year), time frames and/or periods for implementation, scope and coverage, planning processes, assumptions and methodological approaches including those for estimating and accounting for anthropogenic GHG emissions and, as appropriate, removals, and how the party considers that its INDC is fair and ambitious, in light of its national circumstances, and how it contributes towards achieving the objective of the Convention;
- reiterates its call to developed country parties, the operating entities of the financial mechanism and any other organizations in a position to do so to provide support for the preparation and communication of the INDCs of parties that may need such support; and
- requests the Secretariat to publish the INDCs as communicated on the UNFCCC website and prepare by 1 November 2015 a synthesis report on the aggregate effect of the INDCs communicated by parties by 1 October 2015.
- The COP also decides to continue the technical examination of opportunities with high mitigation potential, including those with adaptation, health and sustainable development co-benefits, in the period 2015-2020, by requesting the Secretariat to organize a series of in-session TEMs that:
 - facilitate parties in the identification of policy options, practices and technologies and in planning for their implementation in accordance with nationally-defined development priorities;
 - build on and utilize the related activities of, and further enhance collaboration and synergies among, the TEC, the CTCN, the Durban Forum on capacity-building, the CDM EB and the operating entities of the financial mechanism;
 - build on previous TEMs in order to hone and focus on actionable policy options;
 - provide meaningful and regular opportunities for the effective engagement of experts from parties, relevant international organizations, civil society, indigenous peoples, women, youth, academic institutions, the private sector, and subnational authorities nominated by their respective countries;
 - support the accelerated implementation of policy options and enhanced mitigation action, including through international cooperation; and
 - facilitate the enhanced engagement of all parties through the announcement of topics to be addressed, agendas and related materials at least two months in advance of TEMs.
- The COP also requests the Secretariat to update, following the TEMs, the technical paper on the mitigation benefits of actions, and on initiatives and options to enhance mitigation ambition, compiling information provided in submissions from parties and observer organizations and the discussions held at the TEMs and drawing on other relevant information on the implementation of policy options at all levels, including through multilateral cooperation, and to disseminate the information, including by publishing a summary for policy makers.

The Ministry of New & Renewable Energy has initiated scheme for setting up

of 25 Solar Parks, each with the capacity of 500 MW and above, to be developed in next 5 years in various States. The Ministry has sent scheme for Development of Solar Park to various States along with MOU to all the state Governments against which 12 states have given consent for setting up of Solar Parks. This was stated by Sh. Piyush Goyal, Minister of state for Power, Coal & New and Renewable Energy (Independent Charge) in a written reply to a question in the Lok Sabha recently.

The Minister further stated that the estimated cost for development of solar park would be around **Rs.0.95 Cr./MW**. Solar Power Plants of various capacities would be set up by Solar Power Developers in the Park. The developers would be selected through bidding process under Central/State Schemes.

As per tariff determined for the year 2014-15 by Central Electricity Regulatory Commission (CERC), the capital cost of Grid connected solar PV project is **Rs. 6.91 Cr./MW**.

Climate Change Science Update: The Challenges for Robust Decision Making.

The complete highlights are available at: <http://www.iisd.ca/climate/cop20/enbots/3dec.html> .

Moderated by Leo Hickman, Met Office Hadley Centre, this event explored the challenges of making climate projections and linking damages from extreme weather events to changing emissions; risk management in the face of uncertainty; and the ethics of loss and damage.

Peter Stott, Met Office Hadley Centre, explained that attribution science that takes into account human activity can be used by decision makers in national planning processes. He described the science, highlighting that scenarios from the “real world” are compared to scenarios from a climate not influenced by human activity.

Elizabeth Kendon, Met Office Hadley Centre, described high resolution spatially-detailed models which help to illustrate climate change events, noting that these will better predict change over time. **She said the results of the models are currently being used in the UK to help provide better information to decision makers on potential future risks.**

Petra Tschakert, PSU, noted that the IPCC Fifth Assessment Report (AR5) considers multidimensional vulnerability, explaining that this is linked to social frameworks where the more vulnerable have less capacity and fewer opportunities to adapt. She highlighted new qualitative modelling based on quantitative data, as well as value judgements, to demonstrate scenarios where adaptation is possible.

Nancy Tuana, PSU, explained that as different countries set standards on dealing with climate risk, they should consider that there are value judgments embedded in both the science and the politics of climate change. She underscored gathering information on what the wider community values, and then engaging with the decision makers to model various scenarios that should be considered when creating strategies to manage risk.

Allen Thompson, Oregon State University, spoke on ethics, loss and damage, and event attribution, calling for loss and damage to be considered as separate from adaptation as, among others, residual loss and damages occur beyond the limits of

adaptation. Speaking on climate justice, he noted that event attribution raises the “specter of liability,” further noting that claims for compensation often rest on “distributional justice.” He said that building institutions will require unprecedented levels of international repair, and that moral repair involves victim identification and making amends.

Claudia Murray, University of Reading, gave examples from Latin America of mitigation measures in natural resources and urban planning and development. She described rural indigenous communities forced to migrate to urban areas where governments provide them with sub-standard housing and living conditions. She attributed the mushrooming of these unsustainable housing blocks to “bad politics” and the construction industry lobby, and **called for better land policies as well as more effective tools to distribute the value of natural and urban resources.**

In the discussion, participants considered:

- The measurement of large-scale changes in relation to local changes in climate;
- Value judgements as part of target-setting; the place for geo-engineering in risk discussions;
- Shifting the discussion from adaptation to survival;
- The importance of user-friendly science for communities; and
- The need to understand the political situation in order to present the most influential science to decision makers.

Wanted from Lima: Moral Courage and a Price on Carbon

The complete article is available at: <http://sustainablecitiescollective.com/david-thorpe/1022551/wanted-lima-moral-courage-and-price-carbon> .

This is the 20th annual “Congress of the Parties” (COP20) held by the UN Framework Convention on Climate Change (UNFCCC). Lima must secure an agreement which ensures that countries commit to reduce their greenhouse gas emissions in ways that are transparent, quantifiable and comparable, and which guarantee a world in which warming does not exceed the dangerous 2°C level. (Studies show that it is still possible, although tough, to meet this target.). Mitigation and adaptation action needs to happen now, as well, not wait until 2020, when any legal agreement would kick in.

Rajendra Pachauri, chair of the IPCC, has already warned that the cost of delaying action to tackle climate change would be “proportionally higher” than dealing with it now. He said: “The world needs a combination of adaptation and mitigation. We will not be able to adapt to the impacts of climate change if we don’t do anything to tackle the root of the problem. The impacts will exceed our capacity to cope with them.” He also said that “power generation from fossil fuels would need to be phased out by the end of this century if we want to limit temperature increases to 2°C”.

Developing nations have yet to meet the \$10 billion minimum goal for financing the Green Climate Fund, whose deadline is over, although it is likely that it will be met soon. Overall investment related to tackling climate change is also well below what is required.

A report published by the Climate Policy Initiative (CPI), a San Francisco-based group funded by grants from government and charitable foundations, called Landscape of Climate Finance, said that the total spending last year amounts to about a third of the estimated \$1 trillion in extra investment needed each year to 2050 just to transition to low-carbon energy production. This \$1 trillion figure comes from the International Energy Agency’s number-crunching, as interpreted by CERES and nicknamed ‘the clean trillion’. This is about 1% of GDP annually. It doesn’t include the

investment needed for adaptation to climate change. During last year, governments in developing and emerging economies spent \$544 billion, supporting fossil fuels through subsidies and tax breaks.

It's to give investors confidence to invest in the appropriate places that many worthwhile organizations, from the Royal Society to the World Bank, have recently been pumping out reports on the necessity for more funding to avoid catastrophic climate change.

But only concerted legislation, agreement and confidence from national leaders worldwide will really force the pace of change.

This is why the Sustainable Innovation Forum 2014 (SIF14) is being held in conjunction with COP20, and why it is so important. It is an annual event organised by the UK based Climate Action in cooperation with the United Nations Environment Programme (UNEP).

It recognises that crucial to raising the necessary finance is putting a price on carbon. This is the most important policy that can deter the continuing high level investment in fossil fuels and switch it to energy conservation and renewable energy, as well as carbon capture.

Most big players tout the line that emission reduction is compatible with economic growth using carbon pricing to stimulate investment in clean technology and market innovation. **Climate Action and the World Bank believe that this can be a strong driver of jobs and economic growth.**

A 10 step process to success is outlined below:

- 1) Accelerate low-carbon transformation by integrating climate into core economic decision-making processes. This is needed at all levels of government and business, through systematic changes to policy and project assessment tools, performance indicators, risk models and reporting requirements.
- 2) Enter into a strong, lasting and equitable international climate agreement, to increase the confidence needed for domestic policy reform, provide the support needed by developing countries, and send a strong market signal to investors.
- 3) Phase out subsidies for fossil fuels and agricultural inputs, and incentives for urban sprawl, to drive more efficient use of resources and release public funds for other uses, including programmes to benefit those on low incomes.
- 4) Introduce strong, predictable carbon prices as part of good fiscal reform and good business practice, sending strong signals across the economy.
- 5) Substantially reduce capital costs for low-carbon infrastructure investments, expanding access to institutional capital and lowering its costs for low-carbon assets.
- 6) Scale up innovation in key low-carbon and climate-resilient technologies, tripling public investment in clean energy R&D and removing barriers to entrepreneurship and creativity.
- 7) Make connected and compact cities the preferred form of urban development, through programmes that encourage denser cities and prioritise investments in efficient and safe mass transit systems.
- 8) Stop deforestation of natural forests by 2030, by strengthening the incentives for long-term investment and forest protection, and increasing international funding to around US\$5 billion per year, progressively linked to performance.
- 9) Restore at least 500 million hectares of lost or degraded forests and agricultural lands by 2030, strengthening rural incomes and food security.
- 10) Accelerate the shift away from polluting coal-fired power generation, phasing out new unabated coal plants in developed economies immediately and in middle-income countries by 2025.

Soaring expectations

The article is available at: <http://www.dnaindia.com/analysis/column-soaring-expectations-2045171> .

India stands at a crucial juncture today. For almost seven decades, the country had extraordinarily large governments with little emphasis on quality and effectiveness of governance and excluding a large majority of citizens.

The significance of the State in nurturing participatory governance has been well acknowledged by the Constitution taking into view the positive aspects of governance such as creating effective legal, judicial and regulatory mechanisms, ensuring transparency, evolving market-friendly forms of State interventions. **The concept of regulatory mechanism will pave the way for maximizing governance with minimum government.**

The ethos of 'inclusive governance' has gained prominence in the last two decades owing largely to the emergence of a stronger civil society that has pushed for greater transparency and accountability. The future challenges of the country can only be addressed by taking all dimensions into account, thus promoting the emergence of multiple stakeholders and multi-level governance. So far though the changes have been in an ad hoc manner and not been institutionalized within the public sector.

Amidst this backdrop, the 2014 election result clearly brought out the sentiments and aspirations of the Indian electorate, desiring economic growth and shunning poor governance. The resounding mandate and majority won by the BJP-led NDA government has lifted expectations of all economic stakeholders — the people, corporate and investors alike; to transform the economy and reform government's approach to problem solving.

Managing expectations of a rising civil society will be as onerous a task as delivering on them. The first step in ensuring good governance is to bring consistency in the policies of central and state governments.

Planning Commission, the erstwhile technical advisory body of the central government responsible for policy formulation and coordination between central and state ministries, had little or no control over policy implementation. It is largely due to its powers to coordinate and implement policy based entirely on the assumption that states would cooperate with the central government.

The way forward is to revamp the institutional mechanism based on the concept of cooperative federalism, where the central, state and local governments interact cooperatively and collectively to solve common problems, rather than making policies separately that are redundant and clashing.

This can be achieved by reviving the Inter-State Council and National Development Council and dramatically enhancing the Centre-state relations to provide opportunity for a meaningful dialogue on all pending issues in a time-bound manner, thereby creating a 'Team India' approach to governance, economic growth and development.

Consensus is required in central fund allocations with steps towards decentralized governance and empowerment of local self-governments and also in key sectors like agriculture, mining, housing and construction.

National policy will need to evolve with acceptance from various state governments to break the

current logjam in implementation and provide a kick-start to economic revival.

Another dimension of maximizing governance should be to create a comprehensive legal framework guiding the systems and procedures of inclusive governance by removing a socially disaggregated information system, improving monitoring and evaluation system, greater coordination and harmonisation mechanism. Such new initiatives which espouse principles of trust and transparency will build a stronger culture of accountability between citizens and government. In my opinion, for realising a strong governance structure, a three-step decision-making process should be implemented – Information, Consultation and Dialogue.

In today's society, acquisition of information and new knowledge and their applications have an intense and pervasive impact on governance processes. People who have access to information and understand how to make use of the acquired information for exercising their political, economic and legal rights are more empowered. Democratization of information and knowledge resources are critical for people's empowerment to realize the entitlements as well as to augment opportunities for enhancing the options for improving quality of life. The strengthening of the information regime is therefore sine qua non for promoting participative governance and right to development.

Consultative approach to governance should solicit the viewpoints of a broad cross-section of the society, including those communities and constituencies that have been historically excluded. The process should also involve frequent consultations with intellectuals and civil society, in order to develop a shared vision and greater ownership on key issues of governance.

Effective knowledge dissemination and consultative processes require a strong foundation of ICT-based (information communication technology) platforms that engage various stakeholders of the country.

e-Governance as a tool for bridging governance gap has been adopted with varied levels of success by both the central and state governments in a wide spectrum of activities and involving re-engineering of bureaucratic processes.

'My Gov', the recent initiative of the Prime Minister is an innovative platform for citizen engagement and participation in governance, that has a far reaching impact if extended to every dimension of the decision-making processes.

Such efforts of inclusion and transparency will lead to improved governance which when coupled with simpler processes and deployment of technology will create a strong foundation for maximizing governance processes in India.

Today the promotion and actions on inclusion are coming only from civil society and excluded citizens. A common consensus is required to bring together both the demand and supply side of governance with due involvement of both the central and state governments through institutions such as Inter-State Council and National Development Council.

The people of India are looking forward to a strong federal democracy which leads the subcontinent, in order for it to take its rightful place as a global economic leader. The nation is not looking for doles and rights-based systems anymore; rather economic empowerment is the new political order.

Announcements

Climate Change Deal Agreed At UN Negotiations In Peru.

The article is available at: <http://www.ibtimes.com/climate-change-deal-agreed-un-negotiations-peru-1754742> .

United Nations member states have agreed an agreement on tackling climate change at negotiations in Peru, that ran days longer than scheduled.

The deal will see each country set a target to reduce carbon emissions by next year. **It also significantly departs from one of the core principles of recent international climate change negotiations -- that rich countries should carry the burden of emissions reduction, [according to the Guardian](#).**

Environmental groups criticized the agreement as weak and ineffectual, saying it weakened international climate rules, [according to the BBC](#).

Language on the nature of the emissions reduction pledges in the agreement was watered-down, saying they "may" instead of "shall" include quantifiable information showing how countries intend to meet their emissions targets, according to [the Associated Press](#).

Developed countries had wanted the pledges to focus on greenhouse emissions cuts, while developing nations want to see commitments of financial support to absorb the effects of climate change, which the UN estimates will amount to at least \$200bn annually by 2050, [according to Sky News](#).

The agreement now sets the stage for a what is billed as a global climate agreement, which is to be negotiated in Paris in late 2015.

The U.N. Climate Change Secretariat warned however, that the combined emissions reduction pledges will not be enough to limit global warming to an agreed goal of 3.6 degrees Fahrenheit above pre-industrial times.

Paul Bledsoe, a Clinton administration climate change aide told the [New York Times](#) that the **success or failure of the deal reached in Peru would only become clear in the coming months.**

"The really difficult issues -- financing, adaptation, monitoring and ultimate emissions reductions -- are left to be ironed out over the next 12 months."

Data, Knowledge and Innovation for Climate Action

The complete article is available at: <http://www.iisd.ca/climate/cop20/enbots/4dec.html> .

Pradeep Monga, Director of Energy and Climate Change, UNIDO, highlighted how knowledge partnerships are catalyzing new ways of harnessing climate information to enrich broader sustainability discussions.

Daniel Schensul, UNFPA, said integrating climate models with socio-economic data can enhance local solutions that strengthen resilience.

Responding to a question of how to interpret big data for decision making and action, Ilaria

Firmian, IFAD, highlighted a climate vulnerability study in Mali that examined 10 dimensions of people's livelihoods, noting it helped to inform decision making at the project level.

Koko Warner, UN University, highlighted the need for research to: understand who is affected by climate and how; understand what drives people's behavior and decisions in relation to climate events; and make sure that data "makes sense" in real-life situations. She gave examples of "good" data in this context as providing early-warning information directly to vulnerable communities using mobile apps.

Phillip Williamson, Intergovernmental Oceanographic Commission of the UN Educational, Scientific and Cultural Organization (IOC-UNESCO) provided some insights on why it has taken so long to acquire and use good data on ocean acidification. He noted as one key constraint the issue of national sovereignty over ocean research, saying this calls for a UN-led drive to promote open-data policies on basic environmental data.

Satya Tripathi, UNORCID, discussed the coordination work of UNORCID as an institutional innovation in its own right. He highlighted how a recent study, which showed that forest ecosystems account for 76% of livelihoods, helped convince policy makers of the importance of biodiversity conservation.

Discussing the work of the UNFCCC's Climate Technology Centre and Network (CTCN), Jukka Uosukainen, CTCN, said that in its first year the Centre has received almost 30 requests from countries on issues ranging from how to construct climate-friendly waste systems in cities to developing national indicators for adaptation. He announced the launch of the CTCN portal at COP20, which will facilitate access to climate information from diverse sources.

Kishan Khoday, UN Development Programme (UNDP), noted the **extensive reservoir of data that has been built up from working with national partners and explained that UNDP's support for national capacity building is increasingly focused on integrating development planning with climate change mitigation and adaptation.**

Knowledge partnerships should focus on finding who is "lost" in the data in order to understand their vulnerability and take them part of the solution. The following issues were highlighted:

- The need to focus on concrete problems as this will motivate collaborations among business, research, civil society and governments;
- Ensuring that data collection results in actual projects that are "bankable and implementable";
- The importance of social tagging and knowledge brokering to enhance the searchability of data;
- Incorporating provisions for consumer protection when using crowd-sourced data.

India to amend its Electricity Act : what does that mean for solar? .

The article is written by Bridge to India.

Would amendment in the Electricity Act 2003 bring good news for the Indian solar sector? Apart from the significant rise in the amount of solar power, the measures will also change the landscape for solar project development in the country.

The Indian government is planning to amend the Electricity Act 2003 in a fundamental power sector reform. The goal is to break the monopoly of power distribution companies on the end

consumer and allow for more effective competition in the last-mile delivery and sale of power (refer).

Currently, the company that owns the last-mile distribution network (usually a state discom), is also responsible for the sale of power to the end customer. The amendment is likely to 'unbundle' these two activities. This move could revolutionize the highly politicized and deeply troubled Indian power market, with potentially incisive implications on power pricing (and cross-subsidies) and power quality. It could ultimately move power pricing out of the orbit of political populism and towards a more healthy economy. This in itself would be great news.

Within the context of solar, any changes in the tariff structure would impact first the attractiveness of solar as an alternative power source for end consumers (socket parity) and later the attractiveness of solar to discoms. It will also impact regulatory provisions on grid-connectivity and net-metering. It might still be too early to analyze these impacts in detail without having more clarity on the nature of the proposed changes. However, in the long run, BRIDGE TO INDIA believes that such a fundamental power sector reform would be very beneficial for the solar power business. Based on our conversations with regulators and political decision makers, we get the impression that the different policy and reform initiatives, including the proposed reform of the Electricity Act, are for once synced and part of a larger game plan to create a functioning power market with a significant share of renewables.

However, reforming the Indian power sector will not be easy. There are many and complex existing interests in the power sector that will get hurt by these changes. The industry is also notoriously slow and risk averse. India's complex federal structure, wherein states will have a say in many electricity related matters will make reforms difficult, especially since the current government does not have a majority in the upper house of parliament, the Rajya Sabha. Protests against the proposed amendments are already planned for today (December 8th 2014) (refer link 1 and link 2).

While the proposed amendment of the Electricity Act would have an impact on the viability of solar, the government is simultaneously planning directly targeted measures to quickly grow solar. These include increasing renewable purchase obligations (RPOs) for solar from 3% to 10.5% of India's electricity mix. This will be coupled with a more robust implementation mechanism and stricter penalties for non-compliance (refer). Apart from RPOs, the government will also mandate a 10% renewable generation obligation (RGOs) for new conventional power projects.

Apart from the significant rise in the amount of solar power required to meet these new obligations, the measures will also change the landscape for solar project development in the country. Larger power sector companies such as NTPC, Reliance Power, Tata Power, Adani Power, GVK, Essar Energy and Jindal Steel and Power will be drawn into solar project development and their portfolios will not necessarily be limited to their own RGO requirements. Alternatively, existing, smaller renewable IPPs have new opportunities to offer their products (solar power) and services (project development) to the large power players. International companies and investors with larger power sector ambitions and a solar expertise might finally be induced to enter the Indian market. Given the expected growth in the market, all players will need to quickly evolve fund-raising capabilities to gain from this transition.

Excerpts from the Statement of Shri Prakash Javadekar, Minister for Environment, Forests and Climate Change delivered at the High Level Segment of UNFCCC COP-20 at Lima.

The article is available at: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=112956> .

The new Government in India under Prime Minister Narendra Modi represents the hopes and aspirations of more than a billion Indian people for growth and inclusive development. We are pursuing action-oriented policies to bring rapid development to our people while purposefully addressing climate change.

Among the several measures we have taken to address climate change, I would highlight just a few:

- We have doubled the Clean Energy Cess on coal, which very few countries have, and the Clean Energy Fund already has over US\$ 3 billion to be used for promoting clean technologies
- Our National Solar Mission is being scaled up five-fold from 20,000 megawatts to 100,000 megawatts. This will mean an additional investment of US \$ 100 billion and savings of about 165 million tons of CO₂ emissions per year.
- We are releasing US \$ 6 billion in one go for intensive afforestation which will result in more carbon sinks.
- We have allocated about US \$ 200 million for the 'National Adaptation Fund', setting-up of Ultra Mega Solar Projects, Ultra-Modern Super Critical Coal Based Thermal Power Technology, and the development of Solar Parks on canals.
- Yet another initiative of the Indian Prime Minister is "100 Smart Cities" with integrated policies for adaptation and mitigation to reduce the vulnerability and exposure of urban areas to climate change and also to improve their energy efficiency for which US \$ 1.2 billion have been allocated.
- We have put in place stringent norms for cement industry. Our Action Plan for cleaning one of the longest rivers in the world, River Ganga will bring multiple benefits of pollution reduction and climate adaptation. We have also taken initiatives for protecting coastal, Himalayan, and forest areas.
- We have initiated preparations to develop a National Air Quality Index and have launched a National Air Quality Scheme.

While there is often a talk about changed reality, 1 in every 7 persons in the world today still lives in abject poverty. The number of poor people in the world is more than twice the combined population of Europe. All of them are in developing countries. We are determined to ensure development to all these people and provide them with basic services of energy, water, sanitation, healthcare, education and employment.

The success of India's endeavors in all these issues will also be critical for the success of the global efforts for the achievement of the Sustainable Development Goals (SDGs).

India is also at the frontlines of facing the impacts of climate change. Shifting rainfall patterns, recurring floods, stronger cyclones and droughts or soil erosion are exacerbating the challenge of poverty eradication and necessitate the allocation of scarce national resources for preventing loss of human life.

Despite our serious resource constraints, we are undertaking ambitious actions to undertake adaptation and mitigation actions, including through lowering of the energy intensity of our economic growth, increasing energy efficiency across sectors and making greater use of renewables.

There are practical examples of how in the past we have managed to secure successful global

cooperation to solve global problems. Why can't this spirit of joint collaboration be summoned to address climate change? Why do we want to profit from disasters?

We hope to put in place in Lima, the stepping stones towards a post-2020 agreement under the Convention that is comprehensive, balanced, equitable and pragmatic.

It should be able to address the genuine requirements of the developing countries by providing them equitable carbon space to achieve sustainable development and eradicate poverty.

The new agreement is under the Convention. Let us be clear, it is the 2nd commitment period of the Kyoto Protocol that is ending in 2020, not the Convention. Adherence to the principles and provisions of the Convention is the key.

As India's Prime Minister Narendra Modi said in the UN General Assembly in September this year, we should be honest in shouldering our responsibilities in meeting the challenges. The beautiful balance of collective action – the principles of equity and common but differentiated responsibilities - should form the basis of continued action.

It is equally evident that developing countries could do more if finance, technology support and capacity building is ensured. This must be a key focus of the new agreement.

Our ambition in the post-2020 period is directly linked with ambitious actions in the pre-2020 period by the developed countries, otherwise the poor people in developing countries will not get the carbon space to achieve sustainable development.

If we believe that the global warming threat is real, then we must deliver on the agreed commitments as a matter of priority.

It is important therefore for developed country parties to urgently fulfill their legal obligations in the pre-2020 period. They must scale up their mitigation ambition now and urgently fulfill their promises for providing financial and technological support to developing countries.

Some announcements have been made by some countries to contribute to the Green Climate Fund. However, the scale of these announcements remains far from what has been pledged.

We firmly believe that the INDCs are to be 'nationally determined'. We do not see any role for any ex-ante review in this process. The INDCs should include all elements including mitigation, adaptation, finance, technology and capacity building.

Adaptation is a central and critical priority for developing countries to address Climate Change. The new post-2020 agreement should ensure a balance between mitigation and adaptation. The urgent need for adaptation must be fully reflected in the new agreement.

India is committed and ready to play its part in the global fight against climate change. We look forward to successful conclusion to the Lima COP.

Fossil-Fuel Subsidy Reform: Maximizing Contributions to Emissions Mitigation.

The article is available at: <http://www.iisd.ca/climate/cop20/enbots/10dec.html> .

The following points were highlighted:

- Support available to countries undergoing subsidy reform;
- Opportunities to strengthen the process and direct savings towards investment in sustainable energy systems;
- How countries can utilize mitigation of emissions from subsidy reform within the UNFCCC process, including through post-2020 national contributions.

The Friends of Fossil Fuel Subsidy Reform then launched a GSI publication on the Impact of Fossil Fuel Subsidies on Renewable Electricity Generation.

On the link between subsidy reform and the shift towards a low-carbon future, Simon Buckle, Environment Directorate, OECD, stressed the price distortions caused by fossil fuel subsidies on market prices of energy, noting that market prices of fossil fuels fail to take into account negative social externalities, and prevent the shift to a low-carbon future. He underscored transparency and availability of data as key measures to promote subsidy reform, drawing attention to the OECD's Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels.

Jeremy Leggett, Founder and Chairman, Solarcentury, noted that as renewable energy (RE) costs decrease, there is an increasing "pushback from the energy incumbency," explaining that the RE subsidy regime is threatened by pressures from oil and gas lobby groups. He noted that change to the energy sector will depend on how subsidies are regarded in the US shale gas discussion. He highlighted opportunities for scaling up RE, including a recent announcement by the Bank of England of a probe into whether fossil fuel companies pose a threat to overall financial stability.

Leonardo Martinez-Diaz, Treasury Department, US, described fossil-fuel subsidies as unfair and regressive, noting that lower income households end up paying more for fuel under this regime. Noting the importance of preparedness for countries considering fossil-fuel subsidy reform, he highlighted the need to incentivise the RE sector including through establishing the requisite regulatory and legislative frameworks to support long-term investments in the sector. He noted the importance of transparency through peer review in the subsidies reform arena, highlighting the US and China's announcement to participate in a G-20 peer review process addressing fossil-fuel reform.

James Close, Director, Climate Change Group, World Bank, underlined reinvesting the savings from subsidy reform into social development programmes including education, highlighting the example of Indonesia. On measures to promote reform, he highlighted the Bank's Energy Sector Management Assistance Program, which provided information on the rate and pace of reform. He said the Program would also assist governments in understanding measures that can be put in place to cushion populations from rising energy prices during the shift towards a low-carbon future.

Laura Merrill, Global Subsidies Initiative, IISD, stressed that with decreasing oil prices, the time for fossil-fuel subsidy reform is now. Illustrating the effects of removing subsidies to fossil fuels by highlighting a reduction in smoking when the cost of cigarettes increases, she noted that an increase in the price of fuel can drive innovation and energy efficiency. She called for levelling the playing field so that RE can compete with fossil fuels and emphasized potential profits by introducing value-added taxes on fossil fuels. She stressed that in order to succeed in subsidy reform, countries need to: get the prices right; communicate with the population and build multi-stakeholder support; and mitigate fuel prices.

Rachel Kyte, Vice President and Special Envoy, Climate Change Group, World Bank Group, noted that in order to send a clear signal in Paris on a low-carbon pathway, it is important to get rid of threats to the poor and to decarbonization, calling fossil fuel subsidy reform the "poster child" for this effort. She called on participants to celebrate elected leaders who can publicly describe the

need for policy reform, describing them as "the heroes we need to celebrate."

Doris Leuthard, Federal Councillor, Head of the Federal Department of the Environment, Transport, Energy and Communications, Switzerland, urged solutions for phasing out fossil-fuel subsidies, finding sustainable alternatives, and creating a better market price for energy. She called on leaders to create a world that encourages economic growth without an annual increase on energy consumption.

In Conclusion, the following issues were emphasized:

- **Why nothing is happening in fossil-fuel reform despite international support for it;**
- **Potential actions that could spur fossil-fuel subsidy reform;**
- **Production subsidies in oil and gas exploration;**
- **The need to increase transport taxes as a means to reduce emissions.**

269,000 Tons of Plastic Choke World's Oceans

The article is available at: <http://www.maritime-executive.com/article/269000-Tons-of-Plastic-Choke-Worlds-Oceans-2014-12-10> .

There are plastic shopping bags, bottles, toys, action figures, bottle caps, pacifiers, tooth brushes, boots, buckets, deodorant roller balls, umbrella handles, fishing gear, toilet seats and so much more. Plastic pollution is pervasive in Earth's oceans.

Researchers unveiled on Wednesday what they called the most scientifically rigorous estimate to date of the amount of plastic litter in the oceans - about 269,000 tons - based on data from 24 ship expeditions around the globe over six years.

"There's much more plastic pollution out there than recent estimates suggest," said Marcus Eriksen, research director for the Los Angeles-based 5 Gyres Institute, which studies this kind of pollution.

"It's everything you can imagine made of plastic," added Eriksen, who led the study published in the scientific journal PLOS ONE. "It's like Walmart or Target set afloat."

Ninety-two percent of the plastic comes in the form of "microplastic" - particles from larger items made brittle by sunlight and pounded to pieces by waves, bitten by sharks and other fish or otherwise torn apart, Eriksen said.

Experts have sounded the alarm in recent years over how plastic pollution is killing huge numbers of seabirds, marine mammals and other creatures while sullyng ocean ecosystems.

Some plastic objects like discarded fishing nets kill by entangling dolphins, sea turtles and other animals. Plastic fragments also lodge in the throats and digestive tracts of marine animals.

The researchers said plastic litter enters the oceans from rivers and heavily populated coastal regions as well as from vessels navigating shipping lanes.

Larger plastic objects, abundant near coastlines, often float into the world's five subtropical gyres - big regions of spinning currents in the North and South Pacific, North and South Atlantic and Indian Ocean.

In the middle of these gyres, plastic trash has accumulated into huge "garbage patches" that act as "giant blenders - shredders that eviscerate plastic from large pieces to microplastics," Eriksen said.

The study, based on data from expeditions to all five subtropical gyres, coastal Australia, the Bay of Bengal and the Mediterranean Sea, estimated that there are 5.25 trillion particles of plastic litter. Tiny plastic particles, down to the size of a sand grain, have fanned out through the oceans and reach even remote polar regions.

The researchers said the particles readily absorb chemical pollutants like PCBs, DDT and others, and these toxins enter marine food webs when ingested by fish and other sea creatures.

Achieving Universal Energy Access: A Development Imperative in Addressing Climate Change

The article is available at: <http://www.iisd.ca/climate/cop20/enbots/12dec.html> .

One billion people have no access to electricity and almost 3 billion are without access to clean cooking solutions. UNF initiatives contribute to the UN Secretary General's Sustainable Energy for All (SE4ALL) goal, through the Global Alliance for Clean Cookstoves and the Energy Access Practitioner Network.

Discussing what is needed to "make universal energy access happen," Simon Trace, CEO, Practical Action, cautioned against replicating traditional grid-based energy planning policies in the renewables sector, characterizing them as "anti-poor." He advocated a transformative, "whole ecosystem" perspective that: recognizes energy needs across home, work and community; measures energy services and not merely energy supply; prioritizes and adequately finances decentralized solutions; and acknowledges the roles of government, private sector and civil society in achieving "total energy access."

Arthur Laurent, CEO, Microsol, discussed how the social enterprise is leveraging climate finance for sustainable universal access in Peru and the Central American region. Describing some results of the gold standard-certified Qori Q'Oncha programme in Peru, he said 106,000 households were equipped with certified improved cookstoves and almost 500,000 tonnes of CO₂ were avoided between 2008 and 2013.

Highlighting the impact of the national ban on kerosene on poor households in Peru, Paul Winkel, General Manager, PowerMundo, discussed how the company sources, imports, distributes and raises community awareness on clean energy technologies. He identified finance, rather than technology, as the main barrier to scaling up access, stressing the importance of facilitating access to credit along the entire distribution chain through "Pay As You Go" mechanisms.

Priscilla Achakpa, WEP Nigeria, highlighted the Rural Women Energy Security Initiative (RUWES) which aims to reduce the estimated 100,000 deaths a year caused by smoke inhalation and address forest depletion due to high demand for fuelwood by 90 million households.

Asserting that "climate change is not just about CO₂," Bahijjahtu Abubakar, National Coordinator, Renewable Energy Programme, Nigerian Federal Ministry of Environment, described the RUWES initiative as a practical response that has introduced a sustainable, rural business enterprise model to provide cooking, lighting and energy solutions.

She highlighted the main goals as:

- Empowering five million rural women for energy enterprises through training, finance and technical support;
- Disseminating two million cookstoves annually;
- Gaining policy support for clean energy initiatives;
- Improving delivery and secure funding streams.

Discussing the kinds of policies needed to enhance energy access, it was highlighted :

- Promoting market-based solutions such as feed-in tariffs and tax breaks for clean technologies are important, but public funding is necessary to achieve universal access;
- Policy needs to move from output to outcome indicators to enable results-based financing;
- Tapping emissions from the agricultural sector offers important added value;
- Policies must be translated into real implementation.

Regarding the links between energy access and the climate negotiations, participants highlighted:

- The need to think from the ground up by focusing on constraints faced at household level;
- Seizing opportunities to leapfrog the limits of fixed energy infrastructure by building a flexible and resilient clean energy networks;
- Tackling the role of trade policies in disincentivizing renewable energy solutions;
- Viewing climate change through a “climate justice” lens.

UN chief positive after Lima climate conference.

The article is available at:

http://www.climateactionprogramme.org/news/un_chief_positive_after_lima_climate_conference

Ban Ki-moon, Secretary-General of the United Nations, has hailed the outcome of the Lima climate conference that concluded on the weekend in Peru and praised officials for setting the groundwork for a binding agreement to be reached in Paris next year 2015, according to a UN statement.

The annual UN Climate Change Conference, also known as the Conference of the Parties (COP), concluded its two week meeting on Saturday having brought together the 196 Parties together in an attempt to finalise out a new global deal which would enter force by 2020.

The statement said: “The decisions adopted in Lima, including the Lima Call for Climate Action, pave the way for the adoption of a universal and meaningful agreement in 2015. The Secretary-General urges all Parties, at their first meeting in February next year, to enter into substantive negotiations on the draft text of the 2015 agreement coming from the Conference.”

Mr. Ban applauded delegates for having made “important advances” in clarifying their needs for preparing and presenting their so-called Intended Nationally Determined Contributions (INDCs) to the new agreement and in “finalizing the institutional architecture for a mechanism on loss and damage.”

INDCs are the commitments countries are expected to make in order to keep average global temperature rise below 2°C – the internationally-agreed limit aimed at averting off irreversible climate change.

The US\$10 billion goal for the initial capitalization of the Green Climate Fund was also reached in

Lima.

The fund is designed to direct investment from developed countries to the developing nations most vulnerable to climate change.

The Secretary-General has long spotlighted the urgency of delivering a draft text providing a clear and solid foundation for the upcoming Paris negotiations, warning delegates during the Lima conference that "the more we delay, the more we will pay."

During the final hours of the meeting, negotiations reportedly "stumbled" over certain issues including how to differentiate the obligations and responsibilities of developing and developed countries.

Christiana Figueres, UNFCCC Executive Secretary, said the conference had proven to be "very, very challenging" but praised the outcome as it had left "a range of key decisions agreed and action-agendas launched, including how to better scale up and finance adaptation, alongside actions on forests and education. With this COP and moving on to Paris, we cement the fact that we will address climate change."

Mr. Ban's spokesperson said the Secretary-General called on all parties to submit their "ambitious national commitments well in advance of Paris" and added that the UN chief looked forward to working with both the Governments of Peru and France on a new Lima-Paris Action Agenda to "catalyze action on climate change to further increase ambition before 2020 and to support the 2015 agreement."

Parking lot shade generating power in Surat

The article is available at: <http://deshgujarat.com/2014/12/17/parking-lot-shade-generating-power-in-this-diamond-unit-in-surat/> .



Surat based Sevantibhai Shah led Venus Jewel has installed the biggest solar plant of its kind in Surat.

This is undoubtedly the biggest solar plant in diamond industry and in south Gujarat which has installed capacity of 300 KW powered by 1197 solar panels spread over 30,000 sqft area.

According to Shrenikbhai of Venus Jewels, this solar plant has 25-year life. He said solar panels are washable. **They not only generate power but work like a shade under which vehicle are parked.**

The project according to him has been set up at a cost of Rs. 3 crore in one and half months' time.

25-30% of company's total power consumption will be contributed by this solar plant which may be able to generate 1,000-2,500 unit power per day.

The system in this solar plant is such that energy is consumed directly once it is generated.

Venus Jewels according to Shrenikbhai will install another solar plant functional by March in next year. The second unit will have capacity to generate 75 KW power.

iNaturewatch Mobile Apps now available.

The mobile apps is available at: <https://play.google.com/store/search?q=LadybirdEnvironmentalConsulting&hl=en>

Every year, the United States Department of International Alumni Exchange announces Alumni Innovation Engagement Fund which is a global funding competition to aid their exchange alumni to implement innovative projects in their countries. This year more than 1000 proposals were submitted world wide, of which 53 proposals were selected as finalist and Dr. V.Shubhalaxmi, Founder & Director at Ladybird Consulting LLP was the sole winner from India. She and her 5-member team won 25000 USD grant support for their year long project- Mobile Apps 4 Climate Change.

The project involves development of three mobile apps on urban birds, butterflies and trees of four metros; Mumbai, New Delhi, Kolkatta and Hyderabad. These apps include information about 50 common species that are mostly found in these metros. The idea is to bring urban biodiversity information on the fingertips of the users. These apps will be FREELY available on Android platform.

Besides, the development of mobile apps, the project includes a School Citizen Science Programme titled as Urban iNaturewatch Challenge wherein 40 city schools would take up local biodiversity studies as part of their project work. These apps will be helpful in identifying local trees, birds and butterflies which the students need to report back to the project website www.inaturewatch.com.

The project is expected to develop 3000 student citizen scientists across the cities. The project partners include Greenline of Don Bosco Development Society in Mumbai and WWF-India for other three metros. The mobile apps are developed by LycodonFX Pvt. Ltd.

The idea of mobile apps has been inspired from U.S. based Audubon Society eguides. The apps are aptly named as iNaturewatch which is the environmental citizen science initiative of the Navi Mumbai-based social enterprise- Ladybird Environmental Consulting.

The Budget 2015-16 : Our solar wish-list for India`s 100 GW target” by BRIDGE TO INDIA.

If the Indian government is serious about making India a 100 GW solar market, it needs to help create a dynamic market. All eyes are on the budget 2015-16. Will it deliver the framework solar needs? Here is our wish list.

Earlier, we discussed the proposed changes in the Electricity Act 2003 and, in particular, the proposed 10.5% solar RPO target (refer link 1 and link 2). To give the market further impetus, in the past few days, the government has announced fund allocation for solar parks infrastructure, viability gap funding for public sector led projects and new funds for canal-top solar (refer). However, growing the market from 1 GW a year to 15 GW a year requires a deeper, sustained, market-level effort making the economic fundamentals irresistible.

India cannot afford the luxury of a publicly funded energy transition like in Germany, where

consumers spend upwards of € 20 bn a year to subsidize renewables through higher power prices. The good news is that with the solar technology becoming increasingly efficient, subsidies are no longer required and the government can tinker with other parameters to make solar competitive with conventional power. BRIDGE TO INDIA estimates that if cost of debt financing can be reduced to 8%, tariffs can come down to INR 5.4/kWh with an annual escalation of 2% per annum. Solar Energy Corporation of India (SECI) is already planning a 750 MW project in Madhya Pradesh along similar lines in collaboration with the World Bank.

To make the 100 GW target realistic, the government needs to improve access to and reduce cost of international debt. One way of doing so may be to provide comfort to the international lending community on currency and discom insolvency risks. In addition to this, there are other complementary measures that would support the desired uptake of solar. If solar is cheaper than other sources of new power generation capacities, the difference will induce discoms and consumers to switch.

There are other tools in the government kitty to make solar more attractive. India currently allows an accelerated depreciation benefit (the value ranging between INR 0.5-1/ kWh) for profitable corporate entities to invest into solar. In addition, the finance ministry already has a proposal on its desk to allow similar income tax benefits to tax-paying individuals. However, both these provisions are restrictive in that they address only companies or individuals who have a tax burden and also want to invest into solar. There is no reason, however, why these elements should be bound together.

It also discourages professional, project-based equity investment in the sector, which is much needed for achieving the ambitious new targets. We suggest to decouple the tax benefits from the solar investment and instead make it a tradable benefit. This has been done in the US, where the tradable tax credits attract large amounts of institutional and international capital to the sector.

A third potential measure could be a waiver of the Minimum Alternate Tax (MAT) of 19.8% for solar projects. Here, a case can be made that new (and clean) energy infrastructure would create much more additional tax revenues through growth in production, employment and consumption, than the loss of MAT revenues from solar projects.

If these structural changes can be incorporated in the upcoming budget, along with procedural changes such as ensuring intended use of the clean energy fund and more allocations to the MNRE, we see India on track to achieve its ambitious solar goal of 100 GW by 2022.

An important further point of consideration is political : The center needs a buy-in from the states for a 10.5% solar RPO target. This buy-in should be much easier, if solar is a winner and not a cost of financially weak state discoms.

Pledge to protect the GANGA and Our Environment!

- We will protect our trees. Save them from cutting down. We will promote trees plantation, to keep the environment clean & green.
- To spread the spirit of water conservation, we will avoid wastage of water and also ask others to conserve water.
- We will change our behavior to solve the problem of waste disposal, it will help to reduce the waste formation, sorting at source and ensuring its fast disposal to the nearest and specified dustbin.

- We will utilize dry flowers, fruits, leaves and trash for making compost which we will use in our agricultural fields and gardens.
- We will create awareness amongst the common people and safai karamcharis, so that they should not pollute the environment by burning garbage because it spreads diseases.
- We will stop the use of polythene bags. We will not allow anyone to throw them everywhere. It blocks the drain pipes and water flow which becomes the source of breeding of mosquitoes as well as other infectious diseases.
- On the auspicious festival of light, Deepawali, we will not use crackers and also dissuade others from doing so as these crackers are made by exploitation of child labor. We will not cooperate in this act of exploitation.
- To spread awareness regarding clean and green environment, we will organize various kinds of events such as painting competition, quizzes, essay writing etc. which will focus on different aspects of the environment.
- We will try and utilize the waste as a resource in the best possible manner and also educate others about it.
- We will say no to bad habit of spitting in public places, it makes the place untidy and spreads diseases.

NASA CO2 map reveals impact of forest clearance: Springtime burning of savannah and forest in the southern hemisphere shows up in latest satellite images

The article is available at: <http://www.rtcc.org/2014/12/19/nasa-co2-map-reveals-impact-of-forest-clearance/>

Early data has come in from the first satellite dedicated to monitoring levels of carbon dioxide in the air – with some surprising results.

The patch of dense carbon dioxide above China was to be expected, as factories churn out emissions.

But the biggest swathes of red – signifying a high concentration of the greenhouse gas – appeared over the southern hemisphere.

“Preliminary analysis shows these signals are largely driven by the seasonal burning of savannas and forests,” explained NASA scientist Annmarie Eldering.

Farmers in Brazil and southern Africa are known to clear land in springtime. The images suggest this might have a bigger impact on the atmosphere than previously thought.

NASA’s Orbiting Carbon Observatory-2 (OCO-2), launched in July, measures the concentrations of carbon dioxide around the globe.

On its own, it cannot identify individual sources or sinks of carbon dioxide.

Put together with data from the ground, it can help climate modelers understand better the influences human activity and natural processes have on the atmosphere.

Agreement between OCO-2 and existing climate models is “remarkably good,” said assistant professor Christopher O’Dell.

“Some of the differences may be due to systematic errors in our measurements, and we are currently in the process of nailing these down.

“But some of the differences are likely due to gaps in our current knowledge of carbon sources in certain regions – gaps that OCO-2 will help fill in.”

Rationalizing Subsidies, Reaching the Underserved Improving Effectiveness of Domestic LPG Subsidy and Distribution in India by CEEW.

The report is available at: <http://ceew.in/pdf/CEEW-Rationalising-LPG-Subsidies-Reaching-the-Underserved-5Dec14.pdf> .

India has witnessed a considerable increase in domestic consumption of Liquefied Petroleum Gas (LPG) over the years and the phenomenal rise in the number of LPG connections in the country is testimony to it. However, only 28.5% of households reported LPG as their primary fuel for cooking, during Census 2010-11. This study, based on analysis of National Sample Survey (NSS) data, indicates that the excessive dependence on traditional fuel continues and much needs to be done to provide clean cooking energy to the people of the country at an adequate level of affordability. LPG consumption and the subsidies linked to it are heavily skewed in the favor of higher income groups and the urban areas of country. The prevailing LPG subsidy mechanism has only partially achieved its objectives, while inflating the fiscal burden to significant proportions.

The primary objective of this study is to analyze the efficacy of LPG subsidy in making clean cooking fuel affordable for households across the economic strata; and to suggest appropriate reforms to rationalize the subsidy mechanism to meet the energy needs of underserved population. It is based on a systemic investigation of contemporary issues, review of recent literature, and utilizes the data on consumption patterns and the associated expenditures of the Indian population (based on the data of 68th Round of the NSS).

The key findings that emerge from our analysis are:

1. On account of rising consumption of subsidized domestic LPG, the fiscal impact and import dependence has risen to significant proportions. The subsidy bill for FY 2013-14 stood at INR 48,362 crore, constituting (~) 4 per cent of the non-plan expenditure of the recent budget, while import dependency for LPG has risen to a staggering 89%.
2. Number of domestic connections does not necessarily imply an equivalent number of households using LPG as their primary cooking fuel. Despite more than 110 million connections in 2011, only 70 million households indicated LPG as their primary cooking fuel.
3. The consumption of LPG, and concomitantly the share of subsidy received by various income groups, is highly skewed. More than 50% of the LPG subsidy is received by the richest 30% of Indian population, whereas the poorest 30% receive a meagre 15% of the total subsidy disbursed. Urban areas have more than 70% of distributors, as well as LPG connections, against 32% of the Indian population living in these areas. As a result of poor penetration of distributors in rural areas, even the richest rural households derive only (~) 50 per cent of their total cooking energy from LPG.
4. Traditional cooking fuels, such as biomass and kerosene, are still used in abundance. Less than half of urban households and only 6% of rural households use LPG, exclusively, for cooking. The remaining 80% Indian households continue to use traditional fuels for cooking due to affordability, access and awareness limitations.
5. The universal (and uniform) subsidy on LPG has resulted in low income households spending

a disproportionately high share of their income on cooking energy. The lowest income group spends as high as 8 per cent of their monthly expenditure on cooking energy as against a mere 2 per cent and 3.3 per cent by the highest income group in urban and rural areas respectively. Even in absolute terms, urban households consuming traditional cooking fuels, end up spending more than those using LPG.

6. Based on past studies and literature, the analysis suggest that the affordability limit for cooking energy expenditure, below which it can be termed as affordable, is ~ 6 per cent of overall household expenditure. Against this empirically observed limit, the lowest income groups (both rural and urban) spend almost 33% more (8% vs. 6%). Clearly, the LPG subsidy under the present regime has not been effective in delivering affordable cooking energy to the poorest and the low-income households.
7. Availability of LPG in rural areas is a major hindrance to its adoption. The Rajiv Gandhi Gramin LPG Vitaran Yojana (RGGLVY) has increased the LPG penetration in rural areas through low cost distribution model. In the first three years of the scheme (2009-2012), a little over 1.5 million new connections were awarded. However, sparsely populated or remote settlements are still underserved due to high cost of delivery and financial unviability of conventional distributor models.
8. Awareness of the benefits of using LPG vis-vis traditional fuels also influences the fuel choices for cooking energy. Past interventions by oil marketing companies (OMCs) on awareness, user training and first hand exposure to the benefits of LPG have resulted in a successful shift away from traditional fuels.

Based on these findings, it is recommended that the elements of affordability, availability and awareness (the three As) should be focused on simultaneously, to effectively achieve the objectives of LPG subsidy in the country. **The key recommendations to this effect are three fold:**

1. Rationalize LPG subsidies: a. Reduce the limit on subsidized LPG to 9 cylinders per annum per connection, to enable efficient usage while allowing fiscal space to increase LPG user base. A cap of 9 cylinders per annum would be sufficient to cater at least 70 per cent cooking energy needs of up to 90 per cent households which reported positive consumption of LPG.
2. Introduce differentiated subsidy for domestic LPG, to align the prices with affordability. Households with LPG connection can be classified into three categories, viz. Below poverty line (BPL), Middle income, and Well-to-do. Each category would receive a differentiated level of subsidy support, through a mechanism such as direct benefit transfer, against their actual consumption, up to the capped limit of 9 cylinders per annum. An indicative level of the proposed prices¹ for each category is as follows:
 - ☐ For Below poverty line: INR 308 /cylinder of 14.2 kg
 - ☐ For Middle income: INR 509 /cylinder of 14.2 kg
 - ☐ For Well-to-do: INR 947 /cylinder of 14.2 kg
3. Exclude the Well-to-do category (top 15 per cent population by income) from LPG subsidy net. Even at unsubsidized LPG prices, their cooking expenditure would be well within the affordability limit i.e. 6 per cent of their monthly household expenditure. There are a range of options discussed in the report, which could serve as identification criteria for both inclusion and exclusion of households from the subsidy range. The criteria are based on the income tax and asset ownership data .
4. Improve LPG availability in rural areas by leveraging existing institutions such as Self Help Groups (SHGs) and rural supply chains to deliver LPG in far flung areas. This would help address the accessibility issues with minimum investment and fiscal outlay, in a short timeframe. For instance, SHGs could operate remote extension counters or mini-distribution agencies. With a loan of INR 1.25 Lakh (for capital and operational expenditure) at 7% interest rate, an SHG can supply LPG to about 200 households in a financially viable manner. It is also imperative to establish uniform delivery charges per cylinder by pooling the transportation costs at national level to reduce the price incidence on rural customers and

OMCs.

5. Raise the awareness of the benefits of LPG consumption. A combination of different strategies and actors could be used to highlight health and associated benefits of LPG consumption over inefficient burning of traditional solid fuels. This will create the demand for LPG from sections which currently rely on alternatives, and would facilitate its higher adoption and usage in the long-run.

WMO: 2014 on Track to be Europe's Warmest Year on Record

The article is available at: <http://climate-l.iisd.org/news/wmo-2014-on-track-to-be-europes-warmest-year-on-record/> .

The World Meteorological Organization (WMO) has reported that analysis of European temperature data from January through November 2014 confirms that 2014 will almost certainly be Europe's warmest year on record. A new analysis of European temperature records dating back to the 1500s estimates the January-December annual mean temperature to be .3°C above the previous record set in 2007.

WMO reports that, according to research undertaken by three independent climate science teams from the UK, the Netherlands and Australia to assess the potential link between the likely record-breaking hottest year and global warming, climate change has played a significant role in this warming.

According to WMO, for 2014, 19 European countries are very likely to experience the hottest year on record: Austria, Belgium, Croatia, the Czech Republic, Denmark, France, Germany, Hungary, Iceland, Italy, Luxembourg, the Netherlands, Norway, Poland, Serbia, Slovakia, Slovenia, Sweden and the UK.

In addition, nine of the 10 hottest years ever recorded have occurred since 2000, with climate change leading to hotter and more common hot years.

WMO indicates that scientists simulated possible European weather based on observed global ocean temperatures, as well as a 2014 without human-influenced climate change. It explains that comparing those two 'worlds,' scientists showed that the 2014 European temperatures were much more likely in the world with climate change than the one without.

The analysis was conducted through the European Climate Assessment and Dataset project by national weather services and research institutes, was coordinated by the Royal Netherlands Meteorological Institute, and is an output of the WMO Regional Climate Center (RCC) - Network for Europe, which engages the region's 50 National Meteorological and Hydrological Services.

A new analysis of European temperature data from January through November 2014 confirms that 2014 will almost certainly be the region's warmest year on record. Initial estimates forecast the January-December annual mean temperature for Europe to be 0.3°C above the previous record set in 2007. The top-10 of warmest years includes all the years from the year 2000 onward, with 1989 as the only exception, at sixth place.

A European perspective on this hot year is provided via the Climate Indicator Bulletin. It includes a statement on the attribution of this warmth, which is the focus of a separate press release from Climate Central. The analysis was conducted through the European Climate Assessment & Dataset project by a consortium of national weather services, the IEG EUMETNET, and leading research institutes. It was coordinated by the Royal Netherlands Meteorological Institute (KNMI)

and constitutes an output of the WMO Regional Climate Center - Network for Europe.

WMO is establishing a growing number of Regional Climate Centers (RCCs) and RCC-Networks to generate and deliver more regionally-focused, high-resolution data and products as well as training and capacity building. The European RCC-Network engages the region's 50 National Meteorological and Hydrological Services (NMHSs) and is currently coordinated by the German National Meteorological Service (DWD). The European Climate Assessment & Dataset project is implemented through the RCC-Network's "node" on climate data services, which is coordinated by the Royal Netherlands Meteorological Institute (KNMI).

Recognizing that Europe's warming climate has important implications for the region's day-to-day weather, Climate Central, a US-based education and research non-profit, will deliver the findings to weather presenters in formats that can be incorporated into regular weather reports. WMO partners with Climate Central as well as the Government of Denmark, the WMO/UNEP Intergovernmental Panel on Climate Change, the French Meteorological Society (SMF – Météo et Climat), the UN Foundation and others to support weather presenters in communicating about climate change. In addition to workshops and information support, this effort has included the dissemination of 20 "weather reports" from the year 2050, including eight from Europe.

Lessons from the Past Help to Prepare for the Future

The article is available at: <http://www.asia-pacific.undp.org/content/rbap/en/home/blog/2014/12/17/Lessons-from-the-Past-Help-to-Prepare-for-the-Future/>.

We have seen that involving communities in the recovery process brings special commitment and speeds up recovery. In China there is an old proverb that goes: "If you are planning for a year, sow rice; if you are planning for a decade, plant trees; if you are planning for a lifetime, educate people."

As we look at how things have changed since the 2004 Indian Ocean tsunami we can see how UNDP has worked with partners to help communities recover in the aftermath of disasters, and following through to educate people across the spectrum, to ensure that fewer lives are lost when disaster strikes.

For years, we have been working to support governments in reducing risks from disaster, in helping communities build resilience, and in assisting to set up early warning systems.

Recently, we supported the initiative of the government of the Philippines in creating the Office of the Presidential Assistant for Rehabilitation and Recovery following Typhoon Haiyan (Yolanda). We helped set up its offices, provided equipment, and assisted with drafting the post-Haiyan "Comprehensive Rehabilitation and Recovery Plan" based on a bottom up needs assessment and under strong government leadership.

Helping countries better deal with disasters has long been part of our mandate. But that objective took on new urgency following the 2004 Indian Ocean tsunami. Since then we have worked closely with governments in Asia and the Pacific to try to better protect communities, and provide those at risk with early warnings about approaching disasters. We have drawn on our experience and encouraged South-South cooperation, for example, by facilitating a visit of experts from the Indonesian government – who managed the Banda Aceh reconstruction – to the Philippines so they could share expertise and ideas.

These types of exchanges, support, training, and education have had an impact. Most recently, in

the case of Typhoon Hagupit (Ruby) - while not as strong as Haiyan – preparedness and planning was reported to have played a vital role in saving lives, when the typhoon made multiple landfalls on the East coast of the Philippines.

In recent years we have witnessed, when cyclones and storm surges have hit- fewer lives have been lost in regions where the death tolls used to be in the thousands, or tens of thousands. Our stories in this special section on the 10th anniversary of the Indian Ocean Tsunami, highlight the dramatic differences in the impact of natural disasters past and present. They are also evidence of what can be achieved through innovation and cooperation.

Yet much more needs to be done, and we cannot afford to be complacent. We must heed warnings from scientists about the growing risks due to climate change, and the challenges from natural disasters.

So we continue to work with local and national governments in reviewing early warning systems, contingency planning, creating better evacuation plans, and providing up-to-date training for response teams, particularly that involves communities.

Typhoon Haiyan allowed us to sharpen our recovery and risk reduction efforts. Our cash-for-work programme provided a much needed income for villagers to quickly stitch back together their lives.

While debris removal sounds modest its effects have had wide impact:

- More than 1,700 kilometers (more than 1,000 miles) of roads were cleared, which allowed easier access for humanitarian aid to reach isolated communities;
- More than 2,000 public buildings, including hospitals, schools, daycare centers, and government offices were cleared of debris;
- More than 40,000 people were provided temporary employment, almost half of them women.

Our experience in places such as Tacloban have taught us much. We have seen that involving communities in the recovery process brings special commitment and speeds up recovery. We've also learned how critical it is to have coordination between government, donor agencies, NGOs, and multilateral organizations such as UNDP. This coordination provides not only fast, effective relief, but it also helps communities build back stronger than before.

Energy Storage Improves Electricity Access in Asia

The article is available at: <http://energy-l.iisd.org/news/energy-storage-improves-electricity-access-in-asia/> .

The Secretary General of the Alliance for Rural Electrification (ARE), Marcus Wiemann, has published an article on how energy storage is increasing access to electricity in Asia. The article explains that energy storage is becoming a "hot topic" in discussions on how to improve efficiency, reliability and price-competitiveness of electricity services, and achieve deeper integration of intermittent renewable energy.

Wiemann, with co-authors Paul Bertheau, Reiner Lemoine Institut, and Massimo Bergadano, PHPower, notes that while batteries cannot provide access to electricity, they can play an important role in achieving universal access to clean, reliable and affordable electricity services. The authors argue that grid backup batteries can help those living in rural and peri-urban areas that remain under-electrified due to poor grid quality, as batteries are able to use power from the

grid or an autonomous renewable or oil-powered generator to recharge and deliver stored energy whenever blackouts or brownouts occur.

The authors explain that off-grid solutions are key to achieving universal electricity access, citing the Energy Access Practitioner Network's estimate that 40% of the additional generation required to achieve universal electricity access by 2030 will be off-grid. Developing and emerging countries, in particular, represent a big potential niche for the battery market.

Oil-powered generators are commonly used for off-grid systems, but price shocks, high-operating costs and fuel scarcity undermines their contribution to energy security. Thus, the article suggests, the installation of batteries in diesel off-grid systems can improve reliability and increase efficiency, especially when combined with renewables, which have lower operating costs and more predictable prices than does oil.

The article describes a study comparing two energy systems on small islands in the Philippines, with and without the use of batteries. The study demonstrates that batteries can increase the share of renewable energy and that the implementation of batteries in combination with renewable energy can reduce power generation costs and help alleviate energy poverty.

The article also describes an example of integrating sodium-nickel technology in rural villages in Sarawak, Malaysia, where storage systems are well-suited to compensate for absent or faulty grids. Despite high upfront costs, if properly designed and maintained, batteries can improve the system's performance and lead to economic savings over its lifetime.

Are we heading towards ecological and social suicide? Development at the cost of the environment and ecosystem-dependent communities can be an easy recipe for ecological and social disaster.

The article is available at: <http://www.indiawaterportal.org/articles/are-we-heading-towards-ecological-and-social-suicide> .

In the article titled 'A hundred days closer to ecological and social suicide' published in the Economic and Political Weekly, the author argues that the recent changes in the government do not seem to have helped in changing the environmental policies of the country.

The paper informs that a committee has been set up to review five environmental laws (Environment (Protection) Act, Wildlife (Protection) Act, Forest (Conservation) Act, and Water and Air Pollution Prevention and Control Acts), and it has been given two months to review the implementation of these Acts.

However, there appears to be no clear mandate on the reason for the amendments, no civil society members have been appointed on the committee, and no known environmental law experts included in the committee.

The report and interview with TSR Subramaniam has been released following this paper, which indeed at first glance reveals that the report seems to place emphasis on a kind of top-down centralized, authoritarian and bureaucratic sort of implementation of environmental laws.

This seems to discourage or at times appear to be abrasive about considering alternative points of views, rights of people, grievances of the local people involved and seemingly tries aggressively to push its own agenda forward.

The author argues this kind of an ambitious growth-at-all-costs agenda not only brings about so called development with the environment and ecosystem-dependent communities as its casualties, but also affects democratic governance.

Those resisting or opposing displacement, dispossession, and ecological damage are gradually silenced once they start hurting the interests of industry and the state.

The author says that the only hope that now remains is initiatives from the civil society.

Civil society's greatest contribution in these times should be to understand, document, spread, support, and help network these resistance and reconstruction movements.

The 5 most important developments in climate change in 2014

The article is available at: <http://theweek.com/article/index/273529/the-5-most-important-developments-in-climate-change-in-2014> .

This year may go down as one of the more consequential years for action to prevent the worst effects of climate change. An end-of-the-year reflection on what we are getting right might make for a refreshing change.

The good news is that while global emissions continue to grow, 2014 saw a great deal of progress toward putting in place the policies and infrastructure necessary to eventually reverse that trend. Mankind has only just begun to change its damaging course, and much more work needs to be done, but here are five reasons to be cautiously optimistic:

1. China has set a goal for peak emissions

China, the largest emitter in absolute terms, surprised many in the international community when it announced in November its plan to put a ceiling on greenhouse gas emissions in 2030. The agreement came in tandem with a U.S. promise to further cut its own emissions by 26 to 28 percent by 2025. Both countries also inked deals to continue cooperation on clean energy development, and China said it would double the amount of electricity it generates from non-fossil fuel sources (nuclear, hydroelectric, and solar/wind).

China's willingness to commit to a promise (albeit one that is not legally binding) breathed new optimism into the U.N. Framework Convention on Climate Change (UNFCCC) negotiations that concluded in Lima in December. The Chinese action removes a common refrain from those in the United States who do not want to move forward quickly on climate action: that what we do matters little if emerging economies are not on board.

2. The EPA's Clean Power Plan

It is unlikely that China would have been willing to promise so much without a serious commitment by the U.S., the largest per capita emitter of greenhouse gases, to reduce its own significant contribution to climate change. Thus, the biggest and most consequential domestic development in 2014 was the announcement of the EPA's rules for existing power plants, known as the Clean Power Plan (CPP). The CPP is a pledge that the U.S. will cut emissions by 17 percent below its 2005 levels by 2020.

The CPP faces significant challenges from Republicans in Congress, as well as from individual states, which may result in legal challenges to the EPA's authority. Beyond that, it is a complex set of rules, ultimately subject to the decisions taken by each of the 50 states, the net effect of which is difficult to forecast with certainty. Still, the CPP is likely the most practical method for

mandating the kinds of transformations necessary to gradually decarbonize the U.S. economy.

3. The Green Climate Fund is working (sort of)

The Green Climate Fund was an innovation of the 2009 climate talks in Copenhagen, designed to provide developing nations with the financial resources for mitigation projects. It had received almost no pledges in its first five years. Emerging economies have long used the lack of funding as a reason for not putting forward climate pledges of their own, arguing, not without merit, that they need significant financial assistance from those countries that have a historical responsibility for global emissions growth.

This year, however, finally saw a mobilization by some of the richest nations to fulfill what is an important, even if mostly symbolic, role. As of the end of the Lima climate conference, the \$10 billion benchmark had been met. (Of course, U.S. domestic politics have left its pledge blocked in Congress, but it is worth noting the fact it was made at all.) Even Australia, led by Prime Minister Tony Abbott, who is notoriously averse to climate action, eventually relented with a meager but still more-than-zero contribution.

4. Price of renewables continues to plunge

It is generally understood that robust climate change mitigation rests on making four advances: increases in energy efficiency, carbon capture and storage/sequestration (CCS) technology, nuclear power, and deployment of renewable energy. Of the last three, the reduced cost of solar and wind power have been among the best trends of the last several years.

In 2014, we saw this trend continue. While use of renewables is highly dependent on local circumstances, for states with abundant sun and wind, the cost of power generated from these sources is equivalent to or less than the cost of power from fossil fuels. The recent EPA power plant rules will only accelerate this trend. If fully implemented, the rules will create a stable market for technologies that eventually can transition the U.S. energy mix completely away from coal. Individual states may strengthen existing renewable standards, or adopt regional carbon markets (as California has done), which will provide incentives for utilities to expand their usage.

5. Soaring demand for green-focused financing

Energy transitions are expensive. Setting aside this current period of low crude prices, future global energy demand will cost about \$48 trillion between now and 2035, according to the International Energy Agency (IEA). Not all of that spending will come from individual governments. Private investments, either through equity stakes in companies or debt financing for individual projects, are an essential feature of our global energy economy.

Thankfully, 2014 has continued the trend toward "green" bonds, which typically spur investment in things such as solar and wind technology. According to Bloomberg New Energy Finance's projections, this year's volume of green bond issuances will outpace last year's three times over, with a record \$7 billion in issuances from international development banks (such as the World Bank and Asian Development Bank). While this is admittedly a small fraction of the total bond market, it does send a strong signal that more investors and institutions are interested in financing that has environmental impact, especially as government-issued debt maintains record low yields.

All these trends coming together cannot help but boost confidence that there will be momentum as we head into the Paris climate change talks in 2015, in which the global community will try to hammer out a successor to the Kyoto Protocol.

The UNFCCC process still promises to be contentious, and domestic opposition to what the Obama administration is trying to do will remain strong. But 2014 will likely go down as an

important benchmark year for the future.

TURN YOUR ROOFTOP INTO A POWER PLANT

Energy is the important ingredient for present industrial, commercial operations, education institutes. Invariably we ignore the energy cost in our costing.

The growing prices for grid electricity and diesel fuel to power diesel generators are a major concern for companies in India. Solar PV rooftop systems for captive consumption can be integrated with the existing electricity infrastructure to offset a major part of your energy needs. The Net metering policy guidelines introduced by many of the state is encouraging all category consumers to think on the Solar PV rooftop power generation.

Another encouraging factor is Accelerated depreciation 80% is available under the Income tax act for Solar power generation and investments in India. This can provide significant savings to a solar plant developer who is a taxable assess and has sufficient profits against which the depreciation can be charged.

The recent Karnataka Rooftop policy has proposed a wonderful net metering tariff to encourage installations from 1 KW to 1000 KW of solar Photovoltaic. The tariff for the net metered export is Rs 9.53 for non subsidized installations and Rs 7.20 for the subsidized installation. All the released power purchase agreement draft for 25 years contract with payment will be transferred every month RTGS.

Rooftop solar PV systems are of 3 types:

Grid-tied – These rooftop systems are primarily designed to supply the generated power to the grid and also power the load. These systems will NOT generate power during a power failure as the inverter shuts down the system to stop sending power into the grid and avoids the risk of electrocuting utility personnel who are working to repair the grid

Grid-interactive – This system works in conjunction with either a battery backup or diesel generator to support the load even during a power failure.

Off-grid – This system does not work with the grid and is designed to work only with a battery backup or diesel generator in off-grid applications

The difference between the systems lies in the kind of inverter used, and the inclusion of batteries. As various vendors use different terminology for these systems.

Component cost of Grid connected rooftop PV systems:

A rooftop solar PV system costs approximately **Rs. 1,00,000 per kWp (kilowatt peak)** including installation charges but without batteries and without considering incentives .

The cost breakup for a 1 kWp system is given below:

- Solar PV modules crystalline Rs. 50000
- Inverter Rs. 22000
- Balance of system(BOS) Rs. 18000
- Installation Rs. 10000
- Total Rs. 1,00,000

Microorganisms: Food for Future? " . There is a company that develops new types of food using an aqueous alga as an ingredient. The company is Euglena Co. in Japan, named after the scientific name of the alga, Euglena.

The article is available at: http://miracle-kids.net/en/report/2014/rpt_id000176.html .

Euglena is a microorganism with the size of about 0.1 millimeter. The common name for Euglena in Japan is "Midori mushi" (meaning "Green bugs" in Japanese). They are not really bugs, however. They are algae living in ponds and rivers across the world. They have prosperities of both animal and plant. They can move and grow by generating nutrition from water, light and carbon dioxide. This small organism is now gathering attention with a possibility of becoming a food for our future.

Mr. Mitsuru Izumo, the President of the company, said, "Euglena has as many as 59 kinds of nutrients that are necessary for humans." Learning about people who are suffering from lack of food due to poverty in the world, Mr. Izumo established the company with his friends to make use of nutrient-rich euglena he studied at university.

To use euglena as a food ingredient, the company cultivates a large volume of euglena, followed by thorough washing, drying with a huge dryer type equipment powdering. One gram of powder euglena contains irons equivalent to about 50 grams of spinach, vitamin B1 equivalent to about 50 grams of pork liver, and so on. This powder is used as an ingredient for cookies and dressings. The company's original cookie contains about 0.2 billion euglena per piece.

Making cookies from microorganisms may sound startling to some people. But the cookie looks completely the same as ordinary cookies, and it tastes good with subtle sweetness. In the future, we may be able to eat euglena food not only in Japan but all over the world.

Advent of the knowledge society

The article is available at: <http://www.thehindu.com/books/books-reviews/advent-of-the-knowledge-society/article6584267.ece> .

A "Knowledge Society" is identified by its recognition of knowledge as the main source of economic progress. This new model of development is bringing about a fundamental reshaping of the global economy. All over the world, the mind is replacing the muscle as the key driver of growth.

The pervasive influence of modern Information and Communication Technologies goes well beyond the hyping of the World Wide Web. What is underway is a metamorphosis of the prevailing present economy and society at large.

The ability to gather, store, disseminate, and retrieve large quantities of data and information has leaptfrogged only in the knowledge society. One of the critical dimensions of the knowledge society is the shift in the stress and emphasis on the application of knowledge. The digitisation of information and the influence of the World Wide Web are facilitating a new intensity in the application of knowledge to economic activity.

Writing about this, Peter Drucker declares in his celebrated book The Age of Discontinuity that knowledge not only heralds an epoch-making changeover, but also denotes and signifies a

landmark and milestone – a historical discontinuity with the past – in the journey of human civilization. Drucker further states that “....as long as it is in the book, it is only information....when a man applies the information to do something (only then) it does become knowledge.”

Thanks to the progress in the Information and Communication Technologies, the knowledge about working with competition and eventually winning this running battle, is available to the entrepreneur in the palm of his hand. ‘Intellectual Property’, and not physical property, is the crucial component in this context. The rider, however, is that the knowledge worker needs to be a learner lifelong; he must adapt continuously to the changing opportunities, the ever-evolving business formats and demanding work practices.

A political vision conducive to the creation of a knowledge society mandates the involvement of a free press, a vibrant legislature, an independent judiciary, and a transparent government. While the concept and consequence of the knowledge society in India has made its mark on the lives of the urban elite, it has not yet had any impact on the lives of the people below the poverty line.

While the rest of the world is marching and migrating towards a knowledge-driven society, even after six decades of independence, when a plethora of welfare schemes focused on the uplift and empowerment of the poor are in place, it is a paradox that a vast majority of the population in the country still remains impoverished.

Further, the knowledge society in India has not been able to totally divorce itself from the traditional past, on account of which the progress in this regard has been rather tardy and sporadic. The economic system has been confronting as many challenges as opportunities.

Nevertheless, these drawbacks have not been able to prevent India from rising and ranking to be a premium knowledge society, wherein Information and Communication Technology function as the kingpin in generating wealth and employment.

MILLENNIUM ALLIANCE: An Innovation Partnership for Global Development. The new round of applications for the Millennium Alliance is out.

You can see it at : <http://millenniumalliance.in/applyNow.aspx>. The brochure is available at: <http://millenniumalliance.in/images/BrochureMA.pdf> .

The last date of submission of your application is 15 Jan 2015.

MILLENNIUM ALLIANCE: An Innovation Partnership for Global Development

ABOUT THE PROGRAM: The MA is an inclusive platform to leverage Indian creativity, expertise and resources to identify, support and scale innovative solutions being developed and tested in India to address development challenges that will benefit base of the pyramid (BoP) populations across India and developing countries.

OBJECTIVES:

- Identify game changing innovations: The Alliance intends to identify breakthrough innovations that achieve development outcomes for BoP populations more effectively, more cheaply, more broadly (that reach more beneficiaries) and in a shorter period of time
- Rigorously test, share and appropriately adapt promising solutions: The Alliance encourages innovators to rigorously test and evaluate their innovative solutions to confirm that they are

achieving a concrete development outcome in the most effective manner. The Alliance will support solutions that are based on effective and sustainable business models.

- Scale innovations that work: The Alliance aims to support innovations that exhibit the potential to be replicated or scaled broadly to maximize their impact.

FOCUS SECTORS:

- Basic Education (with priority on innovations in early grade reading/early literacy)
- Water and Sanitation
- Health (with a priority on innovations in service delivery and commodities technology in Family Planning,
- Reproductive Health, Maternal and Child Health and Communicable diseases sub-sectors)
- Agriculture/Food Security (with focus on production, access and uptake, storage and processing services and innovative agri-technologies)
- Clean Energy/Climate Change (Pro-poor mitigation and adaptation projects, access to markets and finance)

Note: For innovations from a sector not included in the above list, to be considered under the MA, it must either benefit BoP populations directly or indirectly by creating or improving the environment that supports improvements in the lives of BoP populations

The MA solicits applications that fall under any of the below-mentioned development stages:

Stage 1: To further develop an established proof of concept for real world viability through small pilots At the Stage 1 level, MA funding will typically support 1-3 years of activities. The projects should be beyond the idea stage and should have already established a proof of concept. Stage 1 funding is typically expected to be in the range of \$10,000 to \$100,000.

Stage 2: Tests innovations through demonstration projects and impact evaluation. At the Stage 2 level, MA funding will typically support 2-3 year pilot or demonstration projects to test innovations at scale, along with evaluations to assess the development impact of the innovations. Stage 2 funding is typically expected to be in the range of \$100,000 to \$500,000.

Stage 3: Transitions successful (based on rigorous evaluation through evidence of impact by an external agency) innovations to widespread adoption.

FOCUS GEOGRAPHY:

The MA shall provide support to innovators who wish to take their projects to the “Developing Countries”, either on country-specific basis or in a hybrid of India and developing countries.

The last date of submission of your application is 15 Jan 2015.

Executive Summary : Understanding Innovation : Indian National Innovation Survey.

The complete report is available at: <http://nationalinnovationsurvey.nstmis-dst.org/download/indian-national-innovation-survey-report.pdf> .

About the survey

Over the last few years NSTMIS, DST had involved various stakeholders in evolving an appropriate framework to measure the innovation and knowledge creation capabilities in Indian

context. The survey is about understanding the process that makes innovation happen or constraints innovation from happening. The understanding is through developing and examining a set of indicators that would help promoting and monitoring innovation in Indian production system.

'Innovation' - as it has been used in the survey

As it is broadly defined, innovation is 'application of new knowledge in the production system, and realization of the benefit of the new application from the market'. This is the standard internationally accepted definition for the researchers in this field. Two important aspects are to be noted. First, 'production units' as innovators - as it is to be applied and taken to the market. This makes the distinction between innovations and other discoveries or inventions. The other aspect is the 'newness' or Novelty. An innovation is new to the world has the highest novelty factor compared to the one that is new only in the domestic market or in the local market. Innovation that is new only to the innovator firm has novelty value only for the firm. Changes need to be 'new to the firm', 'new to the market', 'new in India' and 'new to the world'.

Innovations and innovators

- Most of the innovations are in the form of introducing new machines, followed by improvement of the quality of the existing products, process and product innovations.
- In terms of the percentage share in the total sample most of the innovative firms have less than 100 workforces, are privately owned, and equally divided among pre 1990, 1990-2000 and after 2000 as year of establishment.
- Innovative firms consider themselves either at par or ahead of their competitors.
- Increased range of products, improved quality and standards, increased production capacity and reduced environmental impact are the gains from innovations.
- Most of the innovations are 'new to firm' types.
- Domestic financial institutions are the main external Sources for finance.
- About 53% innovative firms do not employ any scientist or engineers.
- Access to knowledge/information has been found most important barrier in addition to cost factor and availability of skilled manpower.

Types of innovation

- About 70% of innovative firms have innovations in the form of introducing new machines, followed by quality and standard related activities by 40% of the firms. About 32% and 34% firms claimed Product and process innovations respectively. Small firms are more in numbers in all types of innovations. Private, partnership and proprietary business, which account for about 80% of innovative firms are mainly engaged in introduction of new machines. Around 45% of the innovative firms are generally affirmative about competitive positions being at par with the peers.
- Predominant types of innovation are 'new to the firm' category. Use of alternative material, however, has about 20% innovative firms claiming 'new to the Indian market' and about 10% claiming innovations 'new to the world market'.
- Extra mural R&D has some presence in innovations related to alternative materials but overall non- R&D based innovation has predominance among innovative firms.
- Percentage share of scientist and engineer in the total employees is about 8% for 'new product' type innovation. The share is highest for 'alternative material' at 11.11%. High skilled manpower is not much in use among innovative firms for augmenting innovation.
- R&D and technology management are the areas where ICT is used by about on average 20%

firms in all types. ICT for ERP is strong among the firms engaged in new process and new product technology. About 40% firms among those engaged in 'alternative material' type of innovations do use external source for information. It is interesting to note that market source has preference over institutional sources for access to information by innovative firms.

R&D and innovation

- Out of the total innovative firms 36.90% have formal R&D setup. 35.05% of the total innovative firms have intramural R&D setup whereas 11.43% of them have opted for extramural R&D.
- Firms with formal R&D setup are ahead in product innovation and process innovation whereas firms, which do not have formal R&D setup, (i.e. Non-R&D firms) have more focus on New Machines.
- In terms of novelty aspect of innovations, R&D firms have higher percentage of firms claiming their innovations to be 'new to market' than Non-R&D firms.
- R&D firms have done more of both organizational and marketing innovations than Non-R&D firms.
- R&D firms have more number of firms with higher number of 'scientist & engineers' as compare to Non-R&D firms.

Non-technological innovations

- 59.89% of innovative firms are involved with non-technological innovations, out of which 46.48% of the innovative firms are into marketing innovation and 43.09% are into organizational innovation.
- There are no clear cut relationship between size, age and ownership of the firm with the occurrence of non-technological innovations. Types of innovation also do not seem to vary over firms doing or not doing non-technological innovations.
- Innovative firms that are inclined towards non-technological innovations are slightly ahead of their peers (in their opinion), in gains from innovations in comparison to the innovative firms, which are not into non-technological innovations.

Barrier to Innovation

- Access to knowledge/information has been found most important barrier by about 40% of the innovative firms. This is followed by cost factor associated with innovation.
- Availability of skilled manpower is the most important problem for 88% of the innovators. Problem with access to market information and availability of information technology follow closely. Infrastructure as barrier has been expressed by much less percentage of innovative firms.
- Govt. regulatory requirements have scored highest as market barrier, followed by established players in the market.
- Internal resources remain strong barrier for all types of innovations. Innovation cost for 'product', 'process' and 'alternative material' is a barrier as expressed by more than 70%% of the innovators. Firms engaged in innovation on alternative material and efficient use of inputs are more prone to availability of lab facilities.

International Comparison

- In terms of percentage of innovative firms, India is close to the eastern European countries such as Slovakia, Lithuania and Hungary.
- In innovation related activities India is far behind the developed countries in intra-mural R&D,

but compares well with countries like Poland, but at the same time compares poorly for extra-mural R&D and acquisition of external knowledge.

- Acquisition of machinery, equipment and software has been observed as one of the most important innovation activity accessed by many countries including BRICS countries.
- For non-technological innovations India figures at the top along with those in Cyprus.

Overall observations in brief

- The survey represents mainly the small firms in low-tech manufacturing sectors (as per OECD). Advanced R&D led innovation activities are not expected from the samples.
- Overall a dichotomous innovation system is decipherable from the observations of the survey. Small firms have largest share of the total innovative firms, as they have largest share in the sample. Their
- innovations are restricted to 'new to firm' category' and corresponding innovation activities are acquiring new machines using internal resources.
- As far as possible these firms avoid external dealings, be it financial resources acquiring new knowledge/technology, financial support or human resource development. Most of them do not access the available wide network of innovation support system offered by various govt. agencies.
- The scenario indicates weak and uncertain market potential of the cost associated with innovations.
- This is reflected in their views on barrier to innovations wherein cost of innovation, availability of skilled manpower and market figure most prominently.
- R&D as the source of innovation remain prerogative of the large firms. Some of these firms do access the support system and also do acquire new technology/knowledge etc. from the market.
- IPR related issues are not found to be of any concern for the innovation activities of the firms.
- Acquisition of machinery, equipment and software emerged as the most important innovation related activity not only in India even in other countries including BRIC countries.

Policy implications

- The STI policy 2013 document envisages an innovation eco-system that emphasizes the R&D led dynamism to push the production frontier to an internationally competitive higher economic value. The survey identifies the areas that require support to elevate the innovation activities of the
- Indian enterprises to attain global height.
- When seen from the perspective of NIS, RIS and SIS, a macro level scenario emerges where the innovations systems require to be rejigged to be more inclusive to accommodate small firms.
- At the NIS level the disconnect between the innovation support system and innovators (particularly small firms) require to be addressed more effectively.
- One way is to introduce the outcome audit of the fund allocated and spent for various programmes related to innovation support. The purpose would be to assess the return on the money spent for such purposes. The return may be enumerated as the number of firms accessed the support and the gains accrued to the firm through the support.
- At the RIS level the survey reveals the same textbook wisdom. The infrastructure, physical, educational and health related, has the ultimate role on innovation dynamics of a state.

- The SIS can provide a short-cut route to trigger innovation by initiating high-tech high-innovation led industries at the states.
- RIS and SIS together indicate the areas of interventions to be guided through State Innovation Councils activated through National Innovation Council.

Areas for Further investigations

Innovation is human capital dependent. Skilled manpower and access to knowledge are seen as important barriers to innovations. Innovation surveys have hitherto neglected the working conditions of the human resources, their training opportunities for skill development, and approach to overall human resource development planning. In the context of developing economies like India aspiring to be at the helm of technology leadership, an assessment of the state of human resources in the enterprises and ways and means to elevate the overall standard requires to be examined. Such studies can be undertaken for the firms with and without R&D activities, for sectors that have high innovation potentialities, states that require attention for elevation of their innovation potentialities and for the rural industries and technologies used in rural production system.

3rd Inclusive, Integrated Solid Waste Management Exhibition : 26 to 28 February, 2015; Pragati Maidan, New Delhi, India

It gives us immense pleasure to inform you that Confederation of India Industry (CII) is organizing the 3rd edition of IISWM 2015 scheduled from 26-28 February, 2015 at Pragati Maidan, New Delhi with the support of Ministry of Urban Development, Government of India along with the support of relevant bodies like Andhra Pradesh Technology Development & Promotion Center (APTDC), National Solid Waste Association of India (NSWAI) & Indian Biogas Association (IBA)

Waste management in India is in the state of development taking into consideration both urban and industrial waste, which in the next years is positioned to develop significantly, 3rd IISWM 2015 shall focus on varied aspects related to solid waste management with a special focus on Municipal Waste, Industrial Waste, Bio-Medical Waste, Electronic Waste, Water Waste, Hazardous Waste, Composting, Material recycling, Innovative Products & Technologies, Effective waste management strategies for Allied Industries, Public & Private Partnerships, Government Policies, Financing, Planning & Regulation.

OBJECTIVE:

The objective of CII along with the Government of India and our supporters is to enhance the quality of life and protect the public interest by establishing sound environmental policies; enforcing codes; and constructing, operating, and maintaining the countries infrastructure

Government Initiative “Swachh Bharat”

Urban India generates about 47 million tons of solid waste (garbage) every year or about 1.3 lakh tons every day, according to a study by the Central Pollution Control Board (CPCB). But this is only in cities and towns with a municipal body reporting. Another 30% of urban India lives outside these cities. If you add their garbage, the total would amount to about 68 million tons. (Source: TOI)

Key features of 3rd IISWM 2015:

3 Day Exhibition | B2B Meetings | Buyers Sellers Meet | Conference & Seminars | More exhibitors
| More education | More solutions | More connections

CII has taken the initiative to organize the 3rd IISWM 2015 and provide a platform to Decision Makers, Government, Manufacturers of Technology, Municipalities, NGOs, Consultants, Industry etc to meet, interact and exchange ideas to implement policies, joint ventures and partnerships to provide effective solutions

Here is an opportunity for your esteemed organization / company to be a part of the largest exhibition 3rd IISWM 2015. We will be delighted to assist you in finalizing your participation in this event - in consultation either with you/or your nominations.

International Conference on Development, Biodiversity and Climate Change: Issues and Challenges from 3rd-5th of October, 2014

As a result of more than four billion years of evolution, millions of distinct biological species have been evolved, which can be named as biodiversity. Biodiversity is providing us food, fuel, medicines, raw material for our industries and meeting other essentialities of life which are imperative for the survival. Specifically speaking, with natural resources based industrial revolution environmental problems starts emerging. Impacts of industrial revolution led to sustainable development in 1960 and in 1970 international organization adopted the concept of "The Earth is One" and in 1980s one more factor poverty has been added. In 1990s after Rio Conference the concept of sustainable society merged which in 21 century new concept of Ecological Modernization has emerged which largely emphasis on both internal and external capacity building and on the basis of which the concept of green economy has emerged.

By keeping all these facts into consideration, 3-days intellectual endeavor was organized for the first time in this historic Himalayan city, Chamba, popularly known as Chamba Climate Meet-2014. This endeavor was divided in 18 technical sessions with different thematic sub-topics and broadly divided in two categories i.e. oral and poster presentation. 104 technical papers and 13 poster have been presented by the scholars coming from different countries.

Following technical recommendations have been drawn out of the presentation and papers:

1. Development-induced displacement' is to tackle with utmost care as it affects Tribal, Dalits and OBCs mostly. Rehabilitation Policy of the country needs to be fine-tuned as they do not have any supplementary occupational skills other than their traditional knowledge.
2. It is recommended that modern techniques should be used to reduce greenhouse gases.
3. There is a dire need of Intensive research, analysis and documentation of the medicinal properties of plants and herbs found in the Himalayas which are being used as traditional knowledge since ages.
4. The impact of climate change in the Himalayas is a reality. The Himalayan glaciers are the water towers of Asia, and the source of many world's great rivers. Billions of people are dependent of Himalayas, it is recommended on the basis of findings the issues of development should be planned in proper way and should meet the requirement of nature as well as of man in harmonize manner.
5. It is recommended that NGOs and enlightened citizens should be vigilant and promptly bring cases of willful degradation of the environment to the notice of the tribunal as well as to the local administration thereby balance between environmental conservation and economic development can be encouraged.
6. It is recommended that People Centric and Benefit Sharing Participatory model must be adopted in place of existing Lobbyist Pressurized Model of development and it should be the norm in future and should adopt at least partially in existing power projects in Himalayan region specifically and in all developmental projects in general.
7. There should be assessment of any development plan before it's execution (as it is being

executed in developed countries) and services of experts working in universities and college or research institutions should be utilized and it is also recommended that as per international guidelines of respective project, independent assessment should be followed so that damage can be minimized.

8. Adaptation implies being better prepared for handling the current level of global warming and erratic climate behavior as well as designing and delivering effective responses to natural calamities like earthquakes, droughts, forest fires and floods. It is recommended to build capacity of the all stakeholders and people should make aware and mitigation oriented at local level by learning lessons from international interventions.

9. There is a critical need to develop high quality capacity building at both the Internal and external levels. Internal Capacity Building refers to training of multiple role players at the country/local level. External Capacity Building refers to training of different stakeholders with reference to Mitigation, Assessment, Management and Adaptation policies, protocols and programs at the regional, continental and global levels.

10. It is also recommended that available traditional knowledge/craft/community based responsible tourism should be promoted as alternative sources of livelihood.

Outcome of the Conference: Future Plans

1. Better understanding of local issues in global perspective

2. MoUs for academic and research collaboration on climate change issues for next three year with Asia Climate Education Centre, Jeju, South Korea and with University of Toronto, Canada for conservation of traditional knowledge and traditional conservational practices.

3. Publication of outcome of the conference in form of series named "Advances in Environmental Sociology and Conservation Sciences" by Springer International. Six volumes on different titles have been accepted.

4. Networking for academic excellence in future with national as well as international scholars in particular and with universities and research institutes in general.

5. Promotion of Chamba culture and tourism at large.

6. Formation of research plans for future collaboration and going to start on developmental issues in next academic session

7. Boost to local business and exposure to the students as well as to the teachers and also was an opportunity to people of Chamba to interact with conference delegates coming from different parts of the country as well as world.

Links of the latest issues of monthly newsletters released by ThinktoSustain.com.

Climate Change Newsletter; December 2014 Issue:

<http://news.thinktosustain.com/newsletter/climate-change-newsletter-52.html>

Corporate Sustainability Newsletter; November 2014 Issue:

<http://news.thinktosustain.com/newsletter/corporate-sustainability-newsletter-46.html>

Climate Reality Leadership Corps, New Delhi, India Training

In 2006, Climate Reality Project Chairman and former U.S. Vice President Al Gore sparked an international conversation on climate change with his Academy Award-winning documentary, An Inconvenient Truth. By speaking directly to audiences as one concerned citizen to another about

the reality of climate disruption and how we can solve it, Mr. Gore inspired people everywhere to stand up and help build a healthy and sustainable future for us all. It was the start of a global movement on climate, and later that year he launched the Climate Reality Leadership Corps.

Today, the Climate Reality Leadership Corps builds on this legacy by taking great leaders and making them exceptional through our training program, which provides top quality instruction in climate science, communications, and organizing.

In advance of the climate negotiations in Paris next December, this three-day training will bring together accomplished individuals from a diversity of sectors to ensure wide participation from business, government, and civil society. During the training, participants will develop the skills, relationships, and connections to shape the conversation within their communities in the context of a global solution to the climate crisis. As of today, the result of this program is a network of nearly 7,000 world-changers in 125 nations in every time zone.

From February 22—24, Climate Reality will welcome hundreds more leaders to this network as we hold our 27th Climate Reality Leadership Corps training in partnership with the Climate Reality Leadership Corps' India Branch. We've chosen India's capital of New Delhi as our host city for the training to convene a group of leaders to address the local impacts of devastating drought and flood cycles, India's energy mix, efficiency, and the potential of renewables to address energy poverty.

AT THE TRAINING, PARTICIPANTS WILL:

- Spend a day with former U.S. Vice President Gore exploring the implications of climate change for the region and the solutions we have today;
- Learn skills and strategies for dynamic storytelling, public speaking, and media engagement in the 21st century;
- Hear from local, regional, and international experts on strategies for implementing solutions; and
- Meet in small-group sessions facilitated by veteran Climate Reality Leaders and subject experts who will help connect them to the Climate Reality organization and our global network.

APPLY TODAY TO JOIN US IN INDIA FROM FEBRUARY 22—24, 2015! through : www.ClimateRealityTraining.org/india

Many thanks to all who contributed to this issue of Update!

If you have items to feature in the Updates, please send it to Solution Exchange for the Climate Change Community at : se-clmt@solutionexchange-un.net.in

Disclaimer: In posting messages or incorporating these messages into synthesized responses, the UN accepts no responsibility for their veracity or authenticity. Members intending to use or transmit the information contained in these messages should be aware that they are relying on their own judgment.



Copyrighted under Creative Commons License "[Attribution-NonCommercial-ShareAlike 3.0](https://creativecommons.org/licenses/by-nc-sa/3.0/)". Re-users of this material must cite as their source Solution Exchange as well as the item's recommender, if relevant, and must share any derivative work with the Solution Exchange Community.

Solution Exchange is a UN initiative for development practitioners in India. For



more information please visit www.solutionexchange.net.in