



Climate Change Community



Community Update
No. 68: 1st September, 2015
In this Issue

FROM THE RESOURCE PERSON

Dear Members,

We are presenting the 68th Edition of the Monthly Community Update of the Climate Change Community of Practice (CoP), today.

We thank you for your continued cooperation and support to this unique knowledge sharing platform facilitated by UNDP which is now in its 7th year of continuous operation and increasing from strength to strength.

We seek your inputs on the following query by the Centre for Environment Education:

India is maturing with respect to national environmental governance frameworks. India has a strong institutional architecture for environmental management including Multilateral Environmental Agreements implementation: for example, the Environment Ministry has either primary responsibility or plays a central coordinating role with technical functions decentralized to other technical agencies.

In all instances, several ministries and government agencies make up from the framework at the national level, and this tendency towards dispersal of functions creates challenges for coordination, resource mobilization, efficiency, effectiveness and synergy of solutions at the national level.

Further, action plans and programmes to strategically implement and mainstream Multilateral Environmental Agreements across all the agencies involved are often lacking or are inappropriately addressed at the national level. Robust functional systems and processes to support environmental monitoring and reporting are only now being implemented in India.

Strong environmental governance requires valid and relevant data and information for good decision making. Capturing environmental data and analyzing it for development trends to inform policy directions is critical. India has capacity (institutional, systematic and individual) to establish well defined environmental databases.

To this end, I would appreciate receiving your inputs on

- **How are you/your organization contributing to strengthen environmental governance (monitoring and reporting) in India?**
- **How are data generated through climate change projects captured in national reporting and in Multilateral Environmental Agreements reporting?**
- **How the data collected will be used for Multilateral Environmental Agreements**

and the Sustainable Development Goals?

In addition please share Monitoring and Evaluation tools used to strengthen environmental governance.

We seek your inputs on the following query by IRENA:

IRENA seeks to make an impact in the world of renewable energy by maintaining a clear and independent position, providing a range of reliable and well-understood services that complement those already offered by the renewable energy community and gather existing, but scattered, activities around a central hub.

I am currently working for IRENA and am presently scouting for best practices or sustainable projects of hybrid/RE based micro and mini grids, which have been used to power rural health clinics and facilities in India.

It would be good to understand it from the aspect of:

- technology innovations
- cross sector involvement between the Energy & Health Departments' - schemes to support such initiatives
- delivery mechanisms
- financing mechanisms

With the provision of energy access, both thermal & electrical, I urge members to respond to the following:

- **What are the best / good practices in off grid solutions to power rural health clinics & facilities?**
- **How has the quality of service in these facilities improved by using hybrid/RE based micro and mini grids when compared to the off grid systems available earlier?**

The [Indian Council for Research on International Economic Relations \(ICRIER\)](#) focus is to enhance the knowledge content of policy making by undertaking analytical research that is targeted at informing India's policy makers and also at improving the interface with the global economy.

We recently prepared [Working Paper -306 "Reimagining India's Urban Future- A Framework for Securing High Growth, Low Carbon, Climate Resilient Urban Development in India"](#) in August 2015. The working paper was prepared through review of the existing policy literature on Indian urbanization and emission growth.

India is at the point of a major urban transition and its urban population is expected to increase from 377 million today to over 600 million and about 75% of India's GDP is expected from urban areas by 2013. Similarly, about 70% of new jobs is expected to be in urban areas and accommodating a growing urban workforce will require large investments in new urban spaces. Is India prepared for this rapid urban expansion?

The India's current pattern of urbanization are unsustainably high. The existing deficits in basic urban services such as housing, transit, water, sanitation and energy have led to a plethora of urban woes, that lead to unplanned growth, congestion, burgeoning slums and pollution levels that have come to threaten basic public health and poor quality of life.

This paper reviewed the current state of the literature on Indian urbanization, to analyse existing urban development trajectories at the state level to understand the challenges Indian cities face as well as the opportunities available for them to adopt transformative urban processes that can foster inclusive economic growth that is also low carbon. It explores the role of **(urban) energy, multimodal transport, smart infrastructure, green buildings, water and urban finance** from State's ability to balance economic growth, urbanization and carbon emissions.

The paper argues that pathways of urbanization that can help India achieve its carbon commitments without compromising on growth. Please click [here](#) to view the presentation of Dr.Kandeh Yumkella, Special Representative of the UN Secretary General for Sustainable Energy for All, on sustainable energy for all, which is also on similar lines of the paper.

Your feedback to the [working paper -306](#) will enable us develop more institutional version of the paper/ more precisely companion paper as we examine the state of urban local bodies, regulations and financing mechanisms, along with economic impacts. Please click on the link http://icrier.org/pdf/Working_Paper_306.pdf for the working paper.

Thanks & best regards,
Ramesh Kumar Jalan
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Climate Change Community,
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DEVELOPMENT IN THE SECTOR

Zero Energy Buildings: A Critical Look at the Definition

The article is available at: <http://www.nrel.gov/docs/fy06osti/39833.pdf>

A net zero-energy building (ZEB) is a residential or commercial building with greatly reduced energy needs through efficiency gains such that the balance of energy needs can be supplied with renewable technologies.

Despite the excitement over the phrase "zero energy," we lack a common definition, or even a common understanding, of what it means.

In this paper, we use a sample of current generation low-energy buildings to explore the concept of zero energy: what it means, why a clear and measurable definition is needed, and how we have progressed toward the ZEB goal.

The way the zero energy goal is defined affects the choices designers make to achieve this goal and whether they can claim success.

The ZEB definition can emphasize demand-side or supply strategies and whether fuel switching and conversion accounting are appropriate to meet a ZEB goal.

Four definitions of ZEB are given below:

- **Net Zero Site Energy:** A site ZEB produces at least as much energy as it uses in a year, when accounted for at the site.

- *Net Zero Source Energy: **A source ZEB produces at least as much energy as it uses in a year, when accounted for at the source. Source energy refers to the primary energy used to generate and deliver the energy to the site. To calculate a building's total source energy, imported and exported energy is multiplied by the appropriate site-to-source conversion multipliers.***
- *Net Zero Energy Costs: **In a cost ZEB, the amount of money the utility pays the building owner for the energy the building exports to the grid is at least equal to the amount the owner pays the utility for the energy services and energy used over the year.***
- **Net Zero Energy Emissions: A net-zero emissions building produces at least as much emissions-free renewable energy as it uses from emissions-producing energy sources**

These definitions are applied to a set of low-energy buildings for which extensive energy data are available. This study shows the design impacts of the definition used for ZEB and the large difference between definitions. It also looks at sample utility rate structures and their impact on the zero energy scenarios.

Buildings have a significant impact on energy use and the environment. Commercial and residential buildings use almost 40% of the primary energy and approximately 70% of the electricity in the United States . The energy used by the building sector continues to increase, primarily because new buildings are constructed faster than old ones are retired.

Electricity consumption in the commercial building sector doubled between 1980 and 2000, and is expected to increase another 50% by 2025 . Energy consumption in the commercial building sector will continue to increase until buildings can be designed to produce enough energy to offset the growing energy demand of these buildings.

Toward this end, the U.S. Department of Energy (DOE) has established an aggressive goal to create the technology and knowledge base for cost-effective zero-energy commercial buildings (ZEBs) by 2025.

In concept, a net ZEB is a building with greatly reduced energy needs through efficiency gains such that the balance of the energy needs can be supplied by renewable technologies. Using ZEB design goals takes us out of designing low-energy buildings with a percent energy savings goal and into the realm of a sustainable energy endpoint. The goals that are set and how those goals are defined are critical to the design process.

The definition of the goal will influence designers who strive to meet it. Because design goals are so important to achieving high-performance buildings, the way a ZEB goal is defined is crucial to understanding the combination of applicable efficiency measures and renewable energy supply options.

A good ZEB definition should first encourage energy efficiency, and then use renewable energy sources available on site. A building that buys all its energy from a wind farm or other central location has little incentive to reduce building loads, which is why we refer to this as an off-site ZEB.

Efficiency measures or energy conversion devices such as daylighting or combined heat and power devices cannot be considered on-site production in the ZEB context. Fuel cells and microturbines do not generate energy; rather they typically transform purchased fossil fuels into heat and electricity. Passive solar heating and daylighting are demand-side technologies and are considered efficiency measures. Energy efficiency is usually available for the life of the building; however, efficiency measures must have good persistence and should be

"checked" to make sure they continue to save energy. **It is almost always easier to save energy than to produce energy.**

Worth their Salt: How Clean Energy is Powering a Breakthrough Opportunity for Saltpan Farmers in Desert of Gujarat

The article is available at :
http://switchboard.nrdc.org/blogs/ajaiswal/worth_their_salt_how_clean_en.html

In the salt marshes of the Gujarat desert - far from the electric grid - clean energy technologies are providing a breakthrough for saltpan farmers (agarias) who make nearly 70% of India's salt. A new case study analysing two innovative pilot projects by the Self Employed Women's Association (SEWA) have demonstrated that powering water pumps that traditionally use expensive diesel with solar energy can save production costs, increase efficiency and salt harvest outputs, and improve farmers' livelihoods.

NRDC has partnered with SEWA to increase off-grid energy access to clean energy and improve the lives of saltpan farmers working in salt flats. This new case study released by NRDC and SEWA, *Worth Their Salt: Draft Case Study for Clean Energy Access in the Salt Marshes of Gujarat*, measures the potential benefits, including cost savings, in the transition from diesel pumps to more efficient solar pumps, along with the payback period after which the upfront cost of the solar pumps is recouped. The pilots featured in the case study show that the transition from diesel to solar-powered pumps is viable and that clean energy provides many opportunities beyond just major cost savings for the agarias - including social, political, environmental and climate benefits.

NRDC and SEWA held a roundtable last week in Gujarat with national and state government officials, financiers and equipment providers. As described in Part 2 of this blog series, discussions centred on the financing opportunities to scale the featured pilot programs for a greater number of agarias who harvest salt in the Little Rann of Kutch desert.

The scale of opportunity is enormous. As many as 43,000 agarias bore wells and pump brackish salt water (brine) in remote salt flats located in the Little Rann of Kutch, far from modern grid-connected electricity. The agarias work long days in the desert, depending on diesel fuel to power their water pumps. With volatile diesel prices and little savings, agarias spend up to 40% of their annual revenue procuring diesel for the next salt production season. India's abundant solar energy potential, with nearly 300 sunny days and high solar radiation, coupled with falling prices of solar photovoltaic panels offer a powerful clean energy solution to power pumps in rural off-grid areas, including the desert and villages where the agarias work and live.

Pilot Projects Demonstrate Viability of Clean Energy Access Opportunity

As featured in the case study, pioneering renewable energy pilot projects carried out by SEWA have demonstrated how the saltpan farmers can dramatically increase their annual savings by switching from diesel to solar-powered pumps.

SEWA Solar Pilot Project Phase 1: In 2013, SEWA initiated its first pilot project to support the use of solar-powered pumps to reduce agarias' fuel costs. Being the first program of its kind, SEWA collaborated with Jaypee Solar, a local provider of solar PV systems, to install solar systems designed for brine pumping applications. Fourteen agarias purchased solar pumping systems constituting a 1 kilowatt (kW) solar PV system coupled with a one horsepower AC motor to demonstrate the clean energy technology in action and build awareness of its

socioeconomic benefits.

SEWA Solar Pilot Project Phase 2: Expanding on these previous efforts, SEWA collaborated with SunEdison, a U.S. based renewable energy company, and the World Bank in the second phase of the pilot program. In January 2015, 200 solar-powered water pumps were distributed to agarias in the Little Rann of Kutch through the United Nation's Sustainable Energy For All (SE4ALL) initiative. The second phase of this pilot offers a real-world vendor financing model for scaling similar pilot programs, which is featured in the case study.

NRDC and SEWA partnered to measure the cost savings and financial and technical feasibility of interested agarias' transition from diesel to solar-powered pumps through these SEWA pilot projects. The analysis of the SEWA pilots offers compelling results: a solar PV based system can boost annual savings to Rs. 83,000 (~ \$1,310) - a 161% increase in annual savings as compared to agarias utilizing diesel-powered pumps.

The pilot projects also offered a compelling payback period. Assuming a solar PV system was purchased with a 12% interest rate loan to replace a diesel-powered mechanical pump, a farmer would be able to pay back the loan in 38 months (3 years, 2 months).

By using a hybrid system that utilizes both solar PV and diesel to power the pump, agarias can increase their annual earnings to Rs. 52,800 (~ \$830) per saltpan - a 66% increase in annual savings as compared to agarias using a diesel mechanical pump.

Bhavnaaben is one agaria who has purchased solar panels to power her water pump through the SEWA pilot project and sends one of her children to private school with the extra savings available since she no longer buys as much diesel.

Solar pumps used in the pilot projects also demonstrated higher efficiency and reliability, enabling agarias to increase their harvested salt output, pursue other income-earning activities, and power other household items when the solar pumps are not needed for pumping brine. The results show that utilizing clean and affordable solar pumps can lead to livelihood improvements through enabling increased productivity, economic independence, and better health and educational opportunities for agaria families.

Enabling the switch to solar-powered pumps also aligns with the central government's goals of providing 24/7 energy access to the over 300 million people who still lack access to a reliable electricity source in India. Another government goal, achieving India's goal of 100 gigawatts (GW) of solar energy by 2022 through the National Solar Mission, includes an off-grid solar target. Reducing reliance on imports of foreign fossil fuels and reducing the need for costly diesel subsidies are additional benefits for policymakers to take into account. Moreover, because solar energy does not emit greenhouse gases or other air polluting toxins, replacing diesel with solar power can provide significant climate and health benefits for people's health and the environment. In fact, NRDC and SEWA's analysis estimates that the avoided air pollution from diesel combustion by replacing the existing diesel water pumps with solar and hybrid solar/diesel water pumps can potentially avoid up to 115,000 tonnes of carbon dioxide (CO₂) emissions from the salt marshes of Gujarat.

The two innovative pilot projects reveal the remarkable economic, social, and environmental opportunities created by switching from diesel to solar-powered pumps. With targeted financial solutions, these pilot projects could be scaled up, providing clean energy access for a greater number of the 43,000 agarias harvesting the majority of India's salt. As the case study makes clear, with greater savings from using solar energy, these farmers can improve their economic status and the technology they use. Access to clean and affordable sources of

energy can lead to critical improvements in livelihoods across communities in Little Rann of Kutch and the environment while tackling the global issue of climate change.

SunEdison Inks Largest Open Access Solar PPA with India's Biggest Utility, Tata Power Delhi Distribution Limited, to Deliver 180 Megawatts of Solar

The article is available at : <http://www.prnewswire.com/news-releases/sunedison-inks-largest-open-access-solar-ppa-with-indias-biggest-utility-tata-power-delhi-distribution-limited-to-deliver-180-megawatts-of-solar-300117379.html>

SunEdison, Inc., the world's largest renewable energy development company, today announced that it has signed a long-term power purchase agreement with Tata Power Delhi Distribution Limited (TPDDL) to provide 180 megawatts (MW) AC of utility-scale solar power for the people of New Delhi.

TPDDL is the largest electricity distribution utility in Delhi, and provides power to over 6 million people in India's capital city. This is the largest agreement that SunEdison has signed under the open access solar framework, which allows renewable energy providers to sell energy directly through the national grid to end customers.

"This 180 MW of solar power demonstrates that good things happen when you bring two of India's largest energy brands together," said Pashupathy Gopalan, SunEdison president of Asia-Pacific and Sub-Saharan Africa. **"The people of New Delhi will benefit from clean, reliable and affordable energy as a result of this project. This project makes a direct and powerful contribution towards India's goal of generating 100 gigawatts of solar power by 2022."**

"Renewable energy is a big focus for TPDDL, and signing this power purchase agreement with SunEdison highlights our commitment," said Praveer Sinha, Tata Power Delhi Distribution's CEO and managing director. "SunEdison is a globally renowned company and we are sure that our partnership will pave the way for a new wave of projects to support India's renewable energy mission."

The solar power plants for this project will be built in Madhya Pradesh and are expected to supply TPDDL with electricity over the next 20 years. The plants are projected to generate 375,000 megawatt-hours a year, and eliminate the emission of approximately 300,000 metric tons of carbon dioxide per year, equivalent to taking more than 54,000 cars off the road.

The operation and maintenance of the solar power plants will be performed by SunEdison Services, which provides 24/7 asset management, monitoring and reporting services.

Potential risks and uncertainties include changes in applicable regulatory requirements and incentives for production of solar power; and general business and economic conditions, including seasonality of the industry.



Why You Should Take Rising Air Pollution Seriously

The article is available at: <http://food.ndtv.com/health/why-you-should-take-rising-air-pollution-seriously-1204087>.

Research is also now giving very clear indications that exposure to high levels of PM2.5 are the cause of stroke, cardiac issues and cancer. We are already in a state of "air pollution EMERGENCY". We MUST act NOW and do the right things urgently, or else we will be in a state of "air pollution EPIDEMIC".

Of the world's most polluted cities, 13 of them are in India. This level of air pollution **slashes life expectancy by 3.2 years for the 660 million Indians who live in these cities, including Delhi.**

What else can it do? Besides shortness of breath, cough and wheezing, it can trigger asthma and other respiratory problems. According to a study that was published in the Journal of Alzheimer's Disease, **pollution can also cause harm to children's brain, making them susceptible to Alzheimer's or Parkinson's disease.**

Air Pollution May Harm Your Child's Brain : Now, Swedish researchers have uncovered another dangerous side effect of extensive air pollution. The study published in the journal Environmental Health Perspectives suggests that people who live in homes exposed more heavily to **pollution run a 40 percent greater risk of developing Alzheimer's disease and vascular dementia than those who live in areas with cleaner air.**

"In total, about 16 percent of all the cases of dementia in the study might have been caused by exposure to pollution," researcher Bertil Forsberg said describing the results as "sensational."

Researchers at the Umea University studied nearly 2,000 people over a 15-year span while simultaneously tracking traffic patterns in the northern Swedish city of Umea. All participants were 55 or older and free of any disease symptoms when the study began.

The researchers established the elevated risk having controlled for factors such as age, education level, lifestyle and body fat. While previous research linked air pollution to cancer, asthma and respiratory diseases, academics have in **recent years begun to probe how air quality affects the brain.**

"We know that very small particles can enter the brain through the olfactory nerve and cause direct damage," Forsberg said.

SUNNY FUTURE?



Grid connected solar power target as per Jawaharlal Nehru National Solar Mission by UPA	20,000 Mw by 2022
Revised national solar target approved by NDA government in 2015	100,000 Mw by 2022, including 40,000 Mw of grid connected rooftop solar power
Grid connected solar power projects commissioned under Mission and by states up to March 31, 2015	4,098 Mw
Total projects commissioned between July 2013–March 2015 by Centre and states	1,985 Mw
Total projects under development by Centre and states as of May 2015	3,083 Mw

Sources: India Solar Handbook 2015, Bridge to India Draft Biennial Update Report of environment ministry, 2015

Announcements

Regional priorities identified for post-2015 sustainable development agenda

The article is available at :

<http://us4.campaign-archive1.com/?u=f92bd04dfd5b02aa97599ad0d&id=2387e53ca2&e=%5bUNIQID> .

A people-centred and human rights based approach, inclusive and green economic development strategies, and concerted regional cooperation were highlighted as key to delivering on an ambitious and transformative post-2015 development agenda, including the SDGs at the closing of the Asia-Pacific Forum on Sustainable Development.

The Forum served to shape the regional input into the global High-level Political Forum, the preeminent United Nations global body providing political leadership and guidance on sustainable development, as well as enrich negotiations for the General Assembly summit in September 2015, where the United Nations Post-2015 Development Agenda will be adopted.

During the two-day meeting, which was attended by over 400 participants, regional priorities and perspectives on the post-2015 agenda and pathways towards operationalization of a

balanced, integrated sustainable development were shared by ministers and high-level representatives from across the region, along with civil society, United Nations and private sector organizations.

At the closing of the Forum, Dr. Shamshad Akhtar, ESCAP Executive Secretary stated: “We agreed on the need to focus on a **more inclusive, balanced and sustained growth path, while respecting planetary boundaries and social needs, and called for region-wide acceptance of social justice and ecological sustainability, as fundamental policy objectives.**”

“Recognizing that the sustainable development agenda must be firmly embedded in national policy frameworks, and requires national and local ownership, we also called for enhanced political commitment and leadership to realize sustainable development aspirations,” she added.

From countries in South and South-West Asia, H.E. Dr. Masoumeh Ebtekar, Vice President and Head of Department of Environment of the Islamic Republic of Iran was actively engaged in the Forum and elected as Co-Chair.

H.E. Mr. Ahsan Iqbal, Minister of Planning, Pakistan also participated as resource person, along with other senior officials from various countries in South and South-West Asia.

Ms. Rita Dhital, Director of Poverty Alleviation Division in the South Asian Association for Regional Cooperation (SAARC) Secretariat, Kathmandu also took part in the Forum, in particular the special session on Asia-Pacific models of sustainable development that was chaired by H.E. Mr. Kesang Wangdi, Ambassador of Bhutan to Thailand.

The special session showcased unique models and approached adopted across the region. From South and South-West Asia, the guiding philosophy of the Gross National Happiness model of Bhutan was introduced, with a reminder **that the pursuit of happiness and well-being are the premise for achieving sustainable development, which should focus on meeting needs without compromising those of future generations.**

During the session, Ms. Dhital also shared the outcomes of the South Asia Consultation on the Post-2015 Development Agenda, which had been organized in collaboration with ESCAP South and South-West Asia office.

The Pros and Cons of Hybrid and Electric Cars

The article is available at: <http://www.goinggreen.com/>

Although initial sales may have been off to a slow start, demand for hybrids is now on the rise. Despite hard times overall for the automotive industry, new hybrid registrations climbed 34% in the United States between 2010 and 2012.

The jump in Australia is even more noticeable, with hybrid sales jumping by 160% in 2012 alone. Despite weak sales over the past ten years, consumers seem to be ready and willing to make the leap to more environmentally friendly options.

It seems that a number of factors could be contributing to this new interest in hybrids, including rising fuel prices and improved technology. If you're on the fence about making this transition into driving an eco-car, you'll want to look more closely at the advantages and

disadvantages of going electric.

Pros of Driving a Hybrid

Naturally, one of the major benefits of purchasing and driving a hybrid car is that you will have access to a cleaner, more efficient vehicle. Hybrids offer more miles to the gallon, while emitting less carbon dioxide. These green-friendly cars help drivers conserve energy, despite having all the power of more traditional petrol engines.

Hybrid technology has come a long way over the past few years. If you take a look at a motoring car comparison tool today, you'll see that hybrid and fully electric cars provide many of the same amenities and levels of performance as more traditional vehicles. They are better equipped to handle a wider driving range thanks to features such as regenerative braking, which helps recharge the battery each time the driver brakes.

Further incentives to driving a hybrid car include potential tax benefits, government rebates, or employer perks. For instance, some businesses give free parking spaces to employees who drive environmentally-friendly cars, and insurance rates may be lowered as well. Finally, as the demand for cleaner, greener cars continues to grow, the resale values for these vehicles are high. If you compare depreciation rates of electric or hybrid cars to more traditional cars, you'll see that today's green models are coming out ahead.

Cons of Driving a Hybrid

Despite these numerous incentives, hybrid cars may not be right for everyone. If you're looking for raw power behind the wheel, a hybrid may not compare to a sportier conventional car. Although they're swiftly catching up in terms of performance, most hybrids have lower power outputs than sports cars. They're built to boost economy rather than speed, and as such tend to have smaller engines and a lighter weight. This is more in line with what you would expect in a Ford Fiesta review rather than a Lamborghini.

At the same time, the upfront costs for a hybrid will be higher. Even with rebates and tax breaks, a hybrid car will still cost more than that conventional Ford Fiesta.

Within the same brand and model, you could expect to pay as much as \$10,000 more for the hybrid. Yet if you plan on driving the car for a long term period, you can expect to get this money back in the savings on fuel. Those looking for a short term car may find that the benefits do not balance out the cost.

Generally, hybrids stand out for their safety, reliability, and low running costs. They can be a great choice as a commuter or family car.

Voice For Change: Agrarian Communities: Action Plan on Climate Change and reports specific to the states of Bihar, Uttarakhand and Uttar Pradesh

The Main Report is available at:

http://www.praxisindia.org/user_praxis/file/Uploads%20Studies/Ground%20Level%20Panel%20on%20Climate%20Change.pdf .

Agriculture and climate change are both highly debated and publicised in the media, policy space and academics, but do we as a society really care about what agrarian communities feel about these issues?

To address this question, Praxis Institute for Participatory Practices (www.praxisindia.org) and

Oxfam India (www.oxfamindia.org) brought together a panel of 13 farmers and agricultural workers from Bihar, Uttar Pradesh and Uttarakhand to share their experience of climate change.

The importance of the Panel was its membership. The panellists derived their expertise from their day-to-day lived experience and not as researchers, policy makers or academicians. Based on these experiences, the panel reviewed the State-Level Action Plans on Agriculture and Climate Change of their respective states and the United Nations' Sustainable Development Goals relating to agriculture and climate change at a three-day process between May 29th and May 31st, 2015. On June 1st, these inputs were shared with a wider forum of civil society experts, media persons and others.

On behalf of the Ground-Level Panel on Climate Change, we would like to share with you the **panel's report – Voice For Change: Agrarian Communities' Action Plan on Climate Change and reports specific to the states of Bihar, Uttarakhand and Uttar Pradesh.**

The state reports are available at:

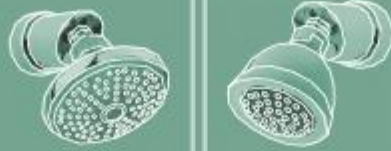
- http://www.praxisindia.org/user_praxis/file/Uploads%20Studies/Bihar%20state%20report.pdf
- http://www.praxisindia.org/user_praxis/file/Uploads%20Studies/Uttar%20Pradesh%20GLP%20report%20Final%20July%2028%202015.pdf
- http://www.praxisindia.org/user_praxis/file/Uttarakhand%20state%20report%20Final%20July%2028%202015.pdf

ACTING GREEN vs BUYING GREEN

comparing green products with their outdated counterparts

SHOWER

Stick with your normal shower head and learn to suds up in 9 minutes instead of 15.



Buy a low-flow shower head and enjoy your normal 15 minute routine.

LIGHTS

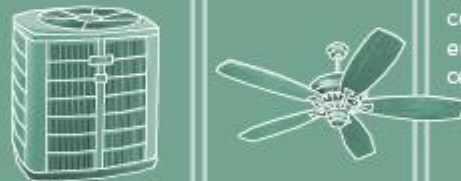
Turn on your incandescents at 5pm and do your chores quickly...the lights go off at 5:49pm sharp!



Turn your LEDs on at 5pm, and keep them on until you go to bed at 11pm.

COOLING

Be nice and cool when you crank up the A/C. But you only get 2 hours, so choose your time wisely.



Enjoy the relative comfort of your energy-efficient ceiling fan for 24 hours a day.

TOILET

Explain to your dinner guests that they'll have to keep to your strict two use per flush policy.



Spring for an water-efficient toilet and flush to your heart's content.

LAUNDRY

Your old washer is pretty thirsty. Better wear today's outfit at least two times before throwing it in the wash.



Your new Energy Star washer sips on water so you can clean your duds after each and every use.

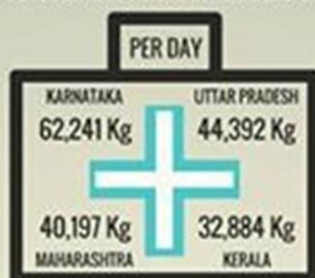
**FACTS ABOUT BIOMEDICAL WASTE
EVERY INDIAN NEEDS TO KNOW**

**'BIO-MEDICAL WASTE' MEANS ANY
WASTE GENERATED DURING
DIAGNOSIS, TREATMENT OR
IMMUNIZATION OF HUMAN BEINGS
OR ANIMALS**

OF THE 4,05,702 KG OF BIOMEDICAL
WASTE GENERATED EVERY DAY IN
INDIA, 28% IS LEFT UNATTENDED
WHICH RE-ENTERS THE SYSTEM

28%

TOP 4 BIOMEDICAL WASTE GENERATING STATES:



**TOP 3 STATES AS PER THE NUMBER
OF VIOLATING MEDICAL FACILITIES:**



THE BIOMEDICAL WASTE GENERATION RATE RANGES
BETWEEN 0.5 AND 2.0 KG/BED/DAY

85% OF HOSPITAL WASTE
NON-HAZARDOUS
10% INFECTIOUS
5% NON-INFECTIOUS
BUT HAZARDOUS



Infections and diseases spread through
bio-medical waste:

- Tuberculosis
- Pneumonia
- Diarrhoea
- Tetanus

Source:
Ministry of Health and Family Welfare, Government of India
Ministry of Health and Family Welfare, Government of Karnataka
Ministry of Health and Family Welfare, Government of Kerala
Ministry of Health and Family Welfare, Government of Bihar

Kachra
PROJECT

Pro-Poor Resource Governance under Changing Climate

The report is available at : http://www.ifad.org/climate/story/iass/IASS_web.pdf .

Natural resources and livelihoods of poor rural people are under increasing pressure from growing demand and continuing climatic changes, and it is becoming increasingly necessary to pursue innovative adaptation strategies. As a result, resource governance, and particularly pro-poor resource governance, has moved to the top of the development agenda.

From 2012 to 2013, the International Fund for Agricultural Development (IFAD) and the Institute for Advanced Sustainability Studies (IASS) began the combined research initiative: "Pro-Poor Resource Governance under Changing Climates" (ProPoorGov).

This study had two main objectives:

- To better understand the relationship between vulnerability and long-standing interrelated social and environmental factors.
- To strengthen the link between local and higher levels of policymaking.

IFAD and IASS collaborated with local civil society organizations (CSOs) in six countries: Bangladesh, Bolivia, Brazil, Burkina Faso, Ecuador and India. Seven case studies were used to document, analyse and communicate aspects of pro-poor resource governance. These studies address how resource governance can determine some factors that generate livelihood vulnerability, and how institutional changes can make livelihoods vulnerable to external changes resulting from both climatic and non-climatic processes.

ProPoorGov reached four core conclusions:

- Climate change vulnerability is influenced by environmental and social factors, and by how resources are governed.
- Although technological solutions for smallholder farming can improve the livelihoods of poor rural people, significant social and political barriers within local governance also hinder such improvement.
- Recognition of community rights, including common property, is useful in reducing the vulnerability of poor rural populations. However, such measures must be supported with appropriate policy if they are to be an instrument of comprehensive development that ends poverty.
- Pro-poor adaptation can involve redefining rights to resources, which is a manifestly political process. If they are to reduce vulnerability, resource governance reforms must consider how poor rural groups are represented and involved in decision-making within the political process.

These four core conclusions suggest a number of solutions to improve resource governance through collaboration with local CSOs:

- Bargaining power of the poor can be reinforced by promoting collective action, which facilitates effective reaction to economic and environmental pressures.
- Problematic resource governance can be improved through including multiple actors in a participatory and inclusive decision-making process.
- Traditional, tried and tested adaptation measures in communities can be supplemented with such things as technological innovations.
- Structural transformations of the type climate change adaptation requires ideally employ a long-term approach and are planned more in terms of generations rather than in short-

term project cycles. Such long-term perspectives usually involve continuous political and financial commitments, and might use public funds.

- Vulnerability has many dimensions and thus requires a comprehensive and integrated approach that builds on favourable existing structures. It can be particularly effective to work with pro-poor CSOs that know the local context and are equipped to remedy hindrances to pro-poor development.
-

SUSTAINABLE PACKAGING INFORMATION

The impact of sustainable packaging development



SUSTAINABLE PACKAGING PRINCIPLES

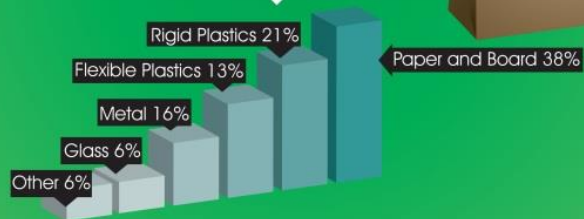
4 sustainability principles need to be met by packaging

- 1  EFFECTIVE - PROVIDE SOCIAL AND ECONOMIC BENEFITS
- 2  EFFICIENT - PROVIDE BENEFITS BY USING MATERIALS, ENERGY, AND WATER
- 3  CYCLIC - RECOVERABLE THROUGH INDUSTRIAL OR NATURAL SYSTEMS
- 4  SAFE - NON POLLUTING AND NON TOXIC

TOP FIVE NATIONAL PACKAGING MARKETS



WORLD PACKAGING CONSUMPTION



KEY DRIVERS THAT INFLUENCE PACKAGING DEMANDS

-  Population growth
-  Rising health awareness from consumers
-  The increasing requirement for convenience among consumers
-  New packaging material development
-  The trend towards "On-The-Go" lifestyles
-  The Trend towards smaller households
-  Increasing awareness of environmental issues, and the adoption of new regulatory requirements on packaging recycling



Sources: wepackitaly.com, worldpackaging.org

www.wildfrogstudio.com



Parliament's Monsoon Session and what it meant for the Solar Sector

The blog is available at : <http://www.bridgetoindia.com/blog/parliaments-monsoon-session-and-what-it-meant-for-the-solar-sector/>

The Indian Parliament recently concluded a literally washed out monsoon session. The key Amendments for Electricity Act 2003, which the Parliamentary Standing Committee had already recommended was ready but not tabled. Another important proposal to amend the National Tariff Policy 2005 has been severely watered down.

Details are given below:

- Amendments to the Electricity Act are ready but could not be introduced in the parliament.
- Dropping of the compulsory adherence clause in the amendment to the National Tariff Policy will undermine the impact of the reform.
- Written replies to questions raised by parliamentarians revealed several aspects of various government initiatives.

Amendments to the Electricity Act are the cornerstone – the legislation will reorder the regulatory landscape for the entire power sector in the country. This includes an enhancement of Renewable Purchase Obligation (RPO) targets, introduction of Renewable Generation Obligation (RGO) targets, penalties on RPO and RGO non-compliance, ease of doing business for renewable micro-grids for rural electrification and other, broader power sector reforms such as separation of content and carriage.

Amendments proposed for the National Tariff Policy 2005 originally had provisions to allow for cost-free interstate transmission of renewable power, procurement of bundled solar power by DISCOMs from conventional power generators on a cost plus basis, easy pass-through of RPO compliance cost and several other, larger tariff structure related reforms for the power sector. State regulatory commissions, however, claimed that several amendments were infringing upon the state rights. Subsequently, the government has dropped the compulsory adherence clause of the amendments, making it more of a guideline. BRIDGE TO INDIA believes that as a result, the impact of the reform will be undermined.

Interestingly, the written replies by the Ministry of New and Renewable Energy (MNRE) to questions asked by parliamentarians revealed a lot about the government's thinking on solar. The government provided the latest breakup and timeline of the 100 GW target and announced several plans to reduce the cost of financing for renewable projects. It also provided clarity on various initiatives for achieving the 40 GW rooftop target solar plan and incentives and financial status of the National Clean Energy Fund.

The central government is keen to drive change but it is dependent on state governments to come on-board.

The issues of high transmission, distribution and commercial losses, including theft, and insolvent DISCOMs remain the weakest links in the sector.

Advancing Comparative Climate Change Politics: Theory and Method

The paper is available for free as a PDF file through the link below:
http://www.mitpressjournals.org/doi/pdf/10.1162/GLEP_e_00309 .

The methods and conceptual tools of comparative politics can improve our understanding of global climate change politics.

Building on recent advancements in the field of comparative environmental politics, a more comprehensive treatment of climate change politics in developed countries, emerging economies and least developed countries is highlighted.

Three groups of political factors—institutions, interests and ideas—that hold considerable promise in explaining climate change politics at the domestic level are crucial .

Ahead of (and beyond) the UN climate change summit in Paris later in 2015, a different perspective on climate change politics is much needed. Recent UN climate change negotiations themselves point to the weakness of international institutions and the need for a bottom-up approach.

As one observer succinctly described the outcome of the 2014 UN climate change conference: The freshly struck agreement, the Lima Accord, sends the obligation of devising a plan to cut carbon emissions back to the nations' capitals — and its success or failure rests on how seriously and ambitiously the parliaments, congresses and energy, environment and economic ministries of the world take the mandate to create a new policy.

We need to rapidly develop capabilities to explain and understand “how seriously and ambitiously” political actors at the low rungs of Sartori’s ladder of abstraction take climate change. Yeats reaches a similar conclusion in the poem that opens this introduction: “Now that my ladder’s gone, I must lie down where all the ladders start in the foul rag and bone shop of the heart.”

A triply engaged climate politics research program that integrates the theory and methods of comparative politics into existing research efforts in environmental policy and international relations will challenge researchers to build and verify theory that links domestic and international climate change politics in order to provide realistic policy recommendations.

At its best, such research will bring positivist and non-positivist research traditions into dialogue with one another. As a point of departure, international and domestic level institutions will remain important for climate change politics, there is value in moving beyond institutional analysis to include interests and ideas as well.

Centre for Agriculture and Rural Development (CARD) www.card.org.in in collaboration with Agriculture Today (www.agricultuertoday.in) is organizing the 8th Agriculture Leadership Summit, 2015 on 18th September at Hotel Taj Palace, New Delhi.

CARD is a national-level NGO working to bring agriculture on par with other major economy-building sectors, through programmes for – capacity building of farmers from across the districts and states, entrepreneurship development by agriculture and non-agriculture graduates with the support of government institutions such as MANAGE and NABARD , policy advocacy through round tables, seminars, conferences and summits engaging all the stakeholder in agriculture, horticulture, earth sciences, bio technology, agribusiness leaders, researchers, academia, industry in order to meet the challenges which India faces.

Organised in collaboration and partnership with various ministeris, organisations in public and private sector, nodal organizations the 8th Agriculture The event will be a discussion-provoking platform for voicing the progress and challenges in agriculture. The comprehensively designed programme is divided into two parts – the first part will see discussions on topics like policy initiatives for climate change and sustainable agriculture, food and nutrition safety, utilizing technology and trade to transform agriculture. This discourse will conclude with potentially-practical recommendations for the growth of diverse sectors to grow.

The second phase of the event will felicitate stupendous achievements by individuals and institutions in the form of Agriculture Leadership Awards 2015 decided by a committee of leading luminaries in agriculture and allied field led by Dr.M.S.Swaminathan, the Father of Green Revolution in India.

The credibility and high industry penetration of the summit creates prospects for diverse enterprises to promote their business by sponsoring the event. Ministry of Food Processing units, United Phosphorus limited, Bayer, Monsanto, IFFCO and Coromandel were some of the sponsors for summit 2014.We welcome expression of interest from individuals, institutions and organizations looking for an opportunity to attain prestigious industry exposure, create business connections and contribute to sustainable agriculture development. Our 'Benefits to Sponsors' plan takes into consideration, the brand endorsing and return on investment requirement of the sponsor

(<http://agriculturetoday.in/Benefits%20to%20Sponsors.pdf>)

Readers interested in participating may click the following link for learning more:
<http://agriculturetoday.in/flash2015home.html>

Established and registered in the year 2000 under the Societies Registration Act 1860, Centre for Agriculture and Rural Development is a premier national Non-Government Organisation, playing a vibrant role in the national efforts of developing India through agriculture led transformation. Committed to reaching all parts of the rural society especially farming community, CARD has been engaged in improving the quality of life of rural masses by addressing technical, economic and policy issues related to the development of agriculture and rural society.

About Agriculture Today, the premier national magazine accelerating Growth of Green GDP in India. It is an exclusive monthly magazine covering an array of agriculture and food industry-related news, updates, interventions and advancements. Driven by a sincere will to stoke the debate and interaction on farmer issues, agro-economics as well as politics and global challenges faced by the agro-industry, the magazine attempts to offer a combination of data, analysis and information along with anecdotes from industry veterans.



साँसें हो रही हैं कम आओ पेड़ लगाएं हम

It is emphasized below, how **Google is getting into renewable energy** which is very interesting since we indeed need big actors and geniuses working for renewable energy in order to secure a smooth transition to renewable based energy in abundance for all globally:

Wireless Electricity is Here : Right now, there is a company that can charge most any device — cell phones, laptops, tablets, toothbrushes... you name it — without any wires at all. Pike Research, a major industry analyst, has declared it will take off "in a similar fashion to how Wi-Fi got its start a decade or so ago." It's patented. It has early mover advantage.

It is going to be a serious cash cow by licensing the technology to the Apples and Samsungs of the world to be installed on every device. Maybe that's why it was one of the best-performing IPOs last year.

Google, Amazon, & Samsung are Dishing Out Billions...

- Google recently dropped \$3.2 billion to raise its already huge stake in this technology.
- Qualcomm made its intentions known with a cool \$2.5 billion investment.
- Amazon's set to invest \$55 million and add almost 4,000 full-time jobs based solely on this game-changing tech.

Take Elon Musk, for instance, with his Hyperloop — the futuristic alternative to high-speed rail that could take you from Los Angeles to San Francisco in 35 minutes. Oh, and it costs a fraction of what a new high-speed rail system would cost. Or Google's driverless electric cars, which have been roaming the streets of San Francisco for three years now.

The boom in renewable energy is going to be big, but it would take time before any meaningful integration became noticeable. And here we are today, with renewable energy rapidly snatching market share from coal and nuclear.

Last week, Google announced a corporate restructuring that would form an umbrella company called Alphabet. Under this umbrella, a collection of businesses will run independently of the company's core web advertising business.

As Silicon Valley struggles to understand the news about Google's new parent company Alphabet, one thing has become clear. Alphabet is all about highlighting Google's futuristic and downright nutbar projects. Alphabet is basically turning Google inside-out, putting all its solid, money-making services and products on the inside. Some of Google's "futuristic" agenda has been anchored in renewable energy.

"The sustainable development enables the realization of green clean environment without pollution, having prosperity without poverty, peace without fear of war and a happy place to live for all citizens of the nations of the world". Extract From the last lecture by Dr APJ Abdul Kalam to students at IIM, Shillong

The lecture is available at:

http://www.abdulkalam.com/kalam/jsp/display_content_front.jsp?menuid=28&menuname=Speeches/Lectures&linkid=68&linkname=Recent&content=2711&columnno=0&starts=0&menu_image=-&contentsForum=Address and Interaction with the participants of Creating a Liveable Earth

The complete lecture is given below:

Dear friends, I am delighted to be with the Indian Institute of Management (IIM), Shillong and address and interact with the students participating in this short course on Creating a Liveable Earth.

I am happy to know that the student present here are from a rich diversity of experience from various domains. My presentation and discussion, your thoughts, responses and their review, can in an integrated way, take the shape of a vision for an action plan for the course participants in various sustainable development system which can preserve and nurture the planet and its people.

I am confident that 12 groups of students might have worked on the 12 pillars of **Creating a Liveable Earth** for futuristic global civilizations. While doing these assignments, I am sure all of you would have realized what an interconnected world we all live in and how the future is a function of our actions today. I will be focusing now in exploring these connections, ideas and challenges. Our journey begins today where we will be analyse new avenues of global prosperity and peace, creative leadership needed for such a change and also the all important aspect of how to preserve and enhance our environment while all this happens.

The Indian Institute of Management, Shillong is amongst the new members in the institutional array of the Indian Institutes of Management, or IIMs, who are producing more than 2/3rd of India's CEOs. You inherit a glorious lineage which has produced some of the finest brains and managers of the nation and even global arena.

The topic I have selected is: "**Creating a Liveable Planet Earth**".

Dear friends, the planet's biggest problem today is to do with sustainability, environmental decline, global poverty, disease, conflict and many other sideshows that go around them. These are all interconnected ? it is one big problem, which is that the way we are doing things, cannot go on. Sustainable development is an organizing principle for human life on a finite planet. It suggests a desirable future state for human societies in which living conditions and resource-use meet human needs without undermining the sustainability of natural systems and the environment, so that future generations may also have their needs met.

Dear friends, I would like to share with you one important aspect of Energy Independence, which means complete energy security with freedom from fossil fuel. 86 % of the total energy produced comes from fossil fuel; around 14% comes from renewable energy and nuclear sector. In this situation, it is essential to find innovative methods to reduce the consumption of the electric power from fossil fuel and increase the deployment of renewable energy systems.

We are already working on adopting certain innovative methods to convert certain important segments for improving the efficiency of the electric power usage from fossil fuel and increase

the use of renewable energy systems.

For example, India has 900 million mobile users, and 250,000 lakh cell phone towers, which consumes nearly 2 billion litres of diesel for power. If we convert these installations into solar powered systems, we save about 1.7 billion dollars and offset 5 million tonnes of CO₂ emission and gain carbon credit. Next, if we transform all our 600,000 villages where 700 million people live, into solar powered homes and street lights, we may offset around 60% of fossil fuel usage in that sector.

Mission for IIM Shillong: All you students and members from IIM Shillong have to become ambassadors of such a green mission for the state, the nation and the planet. Can you transform Meghalaya into a Carbon Neutral State?

My lecture will finally lead you to that. You see so many cars and trucks moving on the roads everyday, towards Shillong and away from it. Each liter of fuel they burns adds about 2.3 kg of CO₂ to the atmosphere. Similarly, in the world, we are adding over 30 billion tonnes of CO₂ to the atmosphere every year. At this rate, we may soon hit a point of no return, and we will be forced to migrate to another planet or its satellite. What can we all do to ensure our mother planet, Earth, the cradle of life, is not rendered unfit for living?

Let me give you a mission. It may be a ten year mission to transform Meghalaya into a Carbon neutral state in India.

These are some of the innovative methods to reduce the consumption of fossil fuel usage and increase the deployment of renewable energy sources. I hope these steps will lead us towards achieving energy independence in a much faster way.

What connects the world?

Friends, for promoting universal peace and prosperity, we need to identify what are the fundamental parameters which connect nations into one unified platform, what tools which enable such connectivity and what specific agendas are needed to bring the world together. Such fundamental parameters include environment, trade and economics, security, health and education of the humanity. These four parameters connect the world with a compounding positive effect, meaning that well being of one nation on these parameters imply the well being of every other nation as well. Let us discuss these four parameters.

Economy and Trade: The second factor which connects the world is economies and trade. Today, the merchandize trade across world is worth about \$19 trillion/year and the growing services trade is valued at over \$4.2 trillion/year. In fact, with over one-third of the world population India and China are rated by WTO as the fastest growing importers (China 9.7%, India 6.6%) as well as the fastest growing exporters (India 16.1%, China 9.2%). Interestingly, the fastest growing manufacturers are also the rapidly growing markets. This is the connectivity of the economy and it binds the world in many ways as we have already seen in the past.

Security: The third issue which is a matter of global togetherness is the aspect of security and hence promotion of sustained peace is a pre-requisite to economic development. In 1945, post the World War II the United Nations was established to avert large scale inter-state conflict. In spite of such an organization, there has been continued conflicts, threats and damages and resulting into wars. The international institution is ripe for re-organization encompassing proper representation in the Security Council and removing its veto power.

Meanwhile, the numbers of intra-state conflicts, organized terrorism and proxy wars are

phenomena on the rise in the entire globe. With the spread of the world information backbone in the form of the internet, there is also a growing issue of addressing cyber crimes and cyber terrorism which can aim at crippling critical services. Nations are coming together to address these issues on a variety of scale.

Recently, we saw how a historic avenue of tension has been brought near resolution with the agreement on nuclear proliferation and lifting of economic sanctions in Iran. I am sure such efforts are significant in making our world peaceful.

Human Development in the Form of Health and Education for All: Friends, today we are in an era of multinational research and multinational product design and marketing. An invention made today somewhere takes no time to find its market thousands of miles away. When designers, developers, researchers, marketers, buyers, sellers and investors are all global, the international interest is in the development of quality workforce globally, often to suit the local market context too. Hence, education and skill development is an issue which brings the world together.

In the healthcare area, in early 20th century, Polio was the major disease emerging; this led to the Great Race for a vaccine against polio across the globe in various institutions and resulted a vaccine in 1950s, which has found solution for the problem. Now it is a time for finding a solution for solving the problem Malaria, HIV/AIDS and Diabetes.

Challenges and unifying forces of humanity

In the world history, there are several instances which have demonstrated that nations get united when they find a common urge and threat such as: Indian Freedom movement, Chinese revolution and the formation of European Union. Now, time has come to find such a common urge and threat for compelling the humanity to live in peace and prosperity as a global community in a clean world.

World Vision 2030: liveable planet earth

How to bring the nation's prosperity through economic growth and simultaneously assuring peace to nation? What is the unique vision that will replace military superiority between and among nations? I have a feeling that we need a great vision, higher than individuals, ideologies, party affiliation, political ambitions and the present technological superiority. Dear friends, can we visualize what it should be?

The humanity needs a great vision to forget all the conflicts and move towards a common goal of peace and prosperity for all the global citizens. We visualize the birth of world vision leading to "livable planet earth". This vision will be greater than any other vision so far envisioned by the humanity.

I think there cannot be a greater vision for the nations other than transforming our "Planet earth liveable". That means, are we leaving a sustainable world where we have taken less from nature than what we have given to it? As long as there are inequities of development between urban and rural areas; between neighbourhoods; in sharing valuable resources, peace will elude us. Particularly, modern technology has made the world a global village. Hence tolerance for inequities will also come down. We have to use the same technology to bring global progress with a vision to achieve the same with consistent missions and programmes. Hence, while creating wealth in the classical sense we need to find new opportunities to serve the knowledge society in ways hitherto not imagined.

The solution may be to find products for more than 7 billion people of the world so that the whole world will own up business. We will have to find newer methods of cooperation so that

core competence of even remote villages can be synergized for competitive products. With such a thought process, I discussed with my colleagues and formulated the possible distinctive development profile of the nations of the world in 2030 as follows.

Distinctive profile for the Nations of the World in 2030

- A world of nations where the divide between rural and urban, rich and the poor, developed and developing has narrowed down.
- A world of nations where there is an equitable distribution and adequate access to energy and quality water.
- A world where core competencies of each nation are identified. Missions synergizing the core competencies of different nations lead to economic advantage and faster development for all the societies.
- A world of nations where all the students of all societies are imparted education with value system.
- A world of nations where affordable quality health care is available to all.
- A world of nations where the governance is responsive, transparent and corruption free.
- A world of nations where crimes against women and children are absent and none in the society feels alienated.
- A world in which every nation is able to give a clean green environment to all its citizens.
- A world that is prosperous, healthy, secure, devoid of terrorism, peaceful and happy and continues with a sustainable growth path.
- A world of nations with creative leadership who ensure effective mechanisms to resolve conflicts between nations and societies in a timely manner keeping overall peace and prosperity of the world as a goal.

Message to the world leaders in the year 2030

THE MESSAGE TO THE WORLD LEADERS IN THE YEAR 2030 IS, "THE NATIONS ARE ONE WAY OR THE OTHER, FOR CENTURIES, SURVIVED BASED ON CONFLICTS, BE IT NATIONAL, REGIONAL AND GLOBAL. THERE IS AN ELEMENT OF FRUSTRATION, AMONG NATIONS NOW ABOUT THESE CONFLICTS THEMSELVES, AND THE PEOPLE WOULD LIKE TO LIVE IN PEACE. IF WE GO INTO DETAILS, I HAVE COME TO THE CONCLUSION; EVERY NATION NEEDS A MISSION BIGGER THAN ITS PEOPLE, BIGGER THAN THE NATION. CAN THE WORLD LEADERS THROUGH G8 AND G20, EVOLVE AND PRESENT A GREATER VISION WHERE THE NATION WILL BE BUSY AND COMMITTED, WORK GLOBALLY, REGIONALLY AND NATIONALLY RESULTING IN CONFLICT FREE, PEACEFUL, PROSPEROUS SOCIETIES OF THE WORLD.

What is the one cause which will unite regions, nations and the world and facilitate a happy, harmonious living apart from being productive? I would like to present my experience of evolving one such vision which will unify many nations to come together and work for the sustainability of the earth and the humanity.

World Knowledge Platform for Global Action

With the experience of World Knowledge Platform which brings the global cooperation, benefiting the regional prosperity thereby enriching the national prosperity, I visualize the missions that will bring unity to achieve peace and prosperity globally. For such a solution, **World Knowledge Platform for Global Action has to emerge as a network of universities, government agencies and industries for participation of policy makers, students, academia and entrepreneurs.** It should focus on the solution path of identifying global problems, researching solutions in a multinational manner, delivering through local cooperation and enterprise based approach in the long term for sustainability. **It needs to be funded as an international cooperative venture which about \$ US 4 billion over the next five years with dedicated spending to developing customizable and scalable solutions.**

I believe, the following threats and opportunities need to be addressed by this World Knowledge Platform for Global Action:

The first global threat is the global environment degradation and climate change, which is threatening the world of nations. What will be the global solution? **I believe, achieving Energy Independence globally with the regional cooperation may bring the optimal solution to this threat. It is essential to evolve right perspectives on realizing the Energy Independence vision by 2030 graduating from Energy Security.** The basic foundation for achieving energy independence has to be built on the principles of environmental impact mitigation, selecting the right energy mix directly linked to the sustainable economic growth of the nation keeping the democratic dimensions in mind and the use of **5th fuel namely constantly improving energy efficiency in an integrated way, finally harnessing the space solar power for 24/7 using space solar mission.** About \$ US 1 billion over 5 years needs to be dedicated to the development of feasible and commercially viable solutions in this domain.

The Second threat is Trade deficit and Global economic recession, which is affecting many nations including India too. The economies of Brazil, Russia, India and China grew at a furious pace for much of the past decade and looked like they would beat even the most optimistic of forecasts which needs to be reinforced further. **In such a scenario, my suggestion is to evolve regional cooperation based on the core competencies of the collaborating nations to work on the missions of Energy, Water, Healthcare, Infrastructure and employment generation.** About \$ US 750 million over 5 years needs to be dedicated to the development of economic systems which are equitable, just and robust for the global nations in this domain.

The third threat is Poverty, in spite of all the growth, 3 billion people of the world need their quality of life to be improved, uplifted from poverty and to provide right employment while the development reaches them directly. **We need to evolve a Sustainable Development System which will enhance the employment potential and empower all the sectors of rural economy, using the well tested model established in India, called PURA (Providing Urban Amenities in Rural Areas).** About \$ US One billion over 5 years needs to be dedicated to the development of PURA as an enterprise model for global rural community of 3 billion humans.

If these three threats to the humanity are addressed with right solutions, which will reduce the effect of terrorism and will bring confluence of civilization. This will reduce the menace of terrorism. The global intelligence, global surveillance, global communication can be achieved through cooperation which will be enhancing the global security, regional safety and promote global peace. About \$ US 750 million over 5 years needs to be dedicated to the development of ideas and innovations which can holistically solve the issues of global security from the grass root level problem of armed resistance rising out of lack of tolerance, geo-politics, natural resources, lack of equity or religious and cultural divides.

Youth dynamics is the greatest opportunity available to the nations, since the ignited minds of the youth is more powerful resource on the earth, above the earth and under the earth. This should create a global human resource cadre and global young entrepreneur cadre who will work for world vision 2030. About \$ US 500 million over 5 years needs to be dedicated to the development of linkages amongst the global youth on aspects of research, world peace and tolerance.

The world leaders meet should lead to the seeding of programmes of World Knowledge

Platform for Global Action with international partnerships. This may result in accelerated realization of harmony of civilization and prosperity for all.

Conclusion

So far, I have discussed about global vision, its component and how each nation is vital in the mission to realize them. I wish to share some more ideals on Righteousness of the heart of the human being leads to a perfect life of an enlightened citizen. When I visit divine places in India, I realize how righteousness in the heart is propagated as our civilizations strength. Let me recite the hymn:

Righteousness in the heart

Where there is righteousness in the heart,
There is beauty in the character.
When there is beauty in the character,
There is harmony in the home.
When there is harmony in the home,
There is an order in the nation.
When there is order in the nation,
There is peace in the world.

Friends, hence, what the nations of the world need are the combination of a World vision 2030 and righteousness in the heart of every citizen and every leader for realizing green, clean environment without pollution, having prosperity without poverty, peace without fear of war and a happy place to live for all citizens of the nations of the world.

My best wishes to all the participants of this course for success in their mission.

May God bless you, Dr. APJ Abdulkalam (www.abdulkalam.com)

May his soul rest in Peace

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

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