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India's Commitment to Climate Change at UNFCCC

Ambitious, But More is Possible

On Friday, October 2, 2015, the birth anniversary of Mahatma Gandhi, India submitted its Intended Nationally Determined Contributions (INDC) to The United Nations Framework Convention on Climate Change for the period 2021 to 2030.

The intended contributions and targets envisaged are ambitious in the context of India's current state of development. Further, the aim of adopting a 'sustainable way of life' perspective has hit the right note. Can India do better, asks Shweta Srinivasan, a senior research analyst at CSTEP, a Bengaluru-based policy think tank

India's per capita emissions are just one-eighth of the US and one-third of China's – the world's top emitters today. Even so, to enable quality standard of living for more people, the need for energy and consequent absolute emissions will grow. CSTEP estimates show that even by 2030, these would be much lower on per capita basis compared to the US and China. Nevertheless, the INDC has committed to reducing its emissions intensity of GDP by 30-35 % over 2005 levels by

Jurriaan [illegible] & Ryan [illegible]ya

Yves Rocher & Sadhguru

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Purpose: To excite Indian businesses, SMEs, executives and students about the immense business opportunity in not only adopting Sustainability as Strategy in their companies but also inspire them to the possibilities of a big market for innovative sustainability products and services.

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2030 and increasing India's fossil-free share of installed capacity to 40% by 2030.

The INDC also steered clear of announcing a year or timeframe for peaking emissions – all alluding to Prime Minister Modi's recent statements at different international fora on climate justice, differentiation between developed and developing countries, the role of international financing and technology transfer and cooperation.

The emission intensity reduction target is reasonably aggressive. A scenario comparison in CSTEP's recent report titled ***Quality of Life for All- A Sustainable Development Framework for India's Climate Policy*** shows that a 16% emission intensity reduction over 2012 level (this corresponds to about 30% over 2005 levels) is possible if India undertakes serious efforts for enabling sustainable development across different sectors.

By 2030, India could require a total installed power generation capacity of about 800 GW. Considering that 70% of India's current capacity (about 250 GW including captive) is fossil fuel-based, the target for fossil free capacity is ambitious.

However, the INDC's (implicit) discussion on how the fossil-free share will be realised along with ongoing policy efforts in the power sector, indicates an emphasis on renewable energy. More importantly this was a missed opportunity to talk about coal from a sustainable development perspective.

Coal Still The Big Player

Coal will remain the dominant source for power in India (over 300 GW of additional capacity). The INDC envisages improved efficiency, advanced coal and international cooperation in technology transfer and R&D. However, there is limited discussion on how such clean coal fits with the ***sustainable way of life.*** **India needs to think through pollution externalities of coal thermal power plants (TPPs).** Over 80,000- 115,000 premature deaths and illness are attributable to pollution from coal TPPs annually. CSTEP estimates show that a shift to renewables and higher end-use efficiency can reduce the aggregate pollution from the power sector by about 50% over a business-as-usual scenario with more coal, and therein reduce health impacts; this is reflected in the fossil-free installed capacity target.

But, while coal ***can*** be seen as affording power to all, it cannot punch beyond its weight. The additional coal capacity will imply massive externalities – remember China in the last decade? Pollution control measures, monitoring and regulation with penalties can truly ***cleanup*** coal and enable a 'sustainable way of life'. Conservative estimates suggest that this could imply an additional investment of about USD 30

billion by 2030 – a mere 3% of the USD 834 billion (2011 prices) mitigation investment identified in the INDC. While the INDC loosely mentions that the government is mulling stringent emission standards for TPPs, this was a missed chance of thinking through strategically. India could have been more aggressive in identifying this as a place where it sees deployment of domestic resources (budgetary, National Clean Energy Fund (NCEF) or private) and international collaboration to truly ***clean up*** coal to enable a sustainable way of life, even as mitigation strategies are supported via international financing.

The INDC document concludes with a disclaimer that ***India reserves the right to make additional INDCs as and when required.*** Hopefully, the above consideration will get reflected in future revisions and make INDC more about ***sustainable development***.

Shweta Srinivasan is a Senior Research Analyst at CSTEP. She works on policy research in low carbon energy policy and co-benefits approach for mainstreaming climate mitigation interventions in state and national policies as well as energy systems modelling.

Climate Change vs. Climate Justice

While addressing the United Nations General Assembly in September 2015, Prime Minister Narendra Modi spoke about poverty, the ill-effects of climate change and sustainable development. Marking a crucial difference between climate change and climate justice, he pointed out that India was on a sustainable path towards prosperity by focusing on energy efficiency, carrying out afforestation on a large scale and cleaning up rivers.

"The bedrock of our collective enterprise is common but differentiated responsibilities. When we speak of climate change, there is a hint unspoken of safeguarding what we already have. But when we speak of climate justice, then the responsibility of saving the poor from the vagaries of climate is something that will help us evolve positive thoughts."

Agenda for Sustainable Development 2030

World Has 'Legitimate Hope'

United Nations Deputy Secretary-General Jan Eliasson's words "we can have legitimate hope that we will achieve our goals by 2030" appears to be the quiet confidence people across the world are beginning to feel looking at the body language of most world leaders. The dramatic affects of climate change in the last five years seems to have shaken every one into a firm belief that it is their last chance.

On September 25, 2015, the 193-Member United Nations General Assembly formally adopted the 2030 Agenda for Sustainable Development, along with a set of bold new Global Goals, which **Secretary-General Ban Ki-moon** hailed as a universal, integrated and transformative vision for a better world.

"The new agenda is a promise by leaders to all people everywhere. It is an agenda for people, to end poverty in all its forms – an agenda for the planet, our common home," declared Mr. Ban as he opened the **UN Sustainable Development Summit.**

The UN chief's address came ahead of the Assembly's formal adoption of the new framework, **Transforming Our World: the 2030 Agenda for Sustainable Development,** which is composed of 17 goals and 169 targets to wipe out poverty, fight inequality and tackle climate change over the next 15 years.

The Goals aim to build on the work of the historic Millennium Development Goals (MDGs), which in September 2000, rallied the world around a common 15-year agenda to tackle the indignity of poverty. The UN chief hailed the new framework as an agenda for shared prosperity, peace and partnership. "It conveys the urgency of climate action. It is rooted in gender equality and respect for the rights of all."

"The 2030 Agenda compels us to look beyond national boundaries and short-term interests and act in solidarity for the long-term. We can no longer afford to think and work in silos. On the adoption of the new agenda, UN Economic and Social Council President (ECOSOC) Oh Joon said action on Sustainable Development Goals must start immediately.

Universal Goal on Energy

United Nations Deputy Secretary-General Jan Eliasson welcomed the adoption of the first-ever universal goal on energy, but cautioned that it will take "arduous work" to reach the targets needed to end poverty and combat climate change as part of the new sustainable development agenda.

Mr. Eliasson spoke of the importance of working across economic, social and environmental dimensions to

participants of a high-level event of **Sustainable Energy for All,** a multi-stakeholder partnership, on the sidelines of the **UN Sustainable Development Summit.**

He cited as examples of successful partnerships already underway.

For example, he said, the UN Food and Agriculture Organization (FAO), the Roundtable on Sustainable Biomaterials, Bloomberg New Energy Finance, the Carbon War Room, KLM, Novozymes and the UN Foundation have partnered to scale up the development and deployment of sustainable bioenergy solutions.

And in Bangladesh, India, Mali and Mozambique, the Alliance for Rural Electrification and the OPEC Fund for International Development are working together to implement mini-grid projects.

Mr. Eliasson also commended domestic initiatives, such as Brazil's successful "Light for All" program, Saudi Arabia's planned $109 billion dollar investment in solar energy, and India's strong commitment to energy access for all by 2019.

Mr. Eliasson noted that progress is too slow in some areas of the world, most notably in sub-Saharan Africa, but with leadership and the foundations that are already laid, "we can have legitimate hope that we will achieve our goals by 2030."

"But it is going to be an arduous work," he said. "We have set the vision and direction. Now we must take the concrete steps forward in a determined way to the benefit of all."

Growing Trees in The Arabian Desert

Jurriaan Ruys' Land Life Company has developed a unique, fully functional product to grow trees in dryland environments. COCOON is 100% biodegradable, highly water efficient, low-cost, low capital, highly scalable having high survival rates, growth rates and vigor. Dryland (45% of earths land surface) afforestation efforts hold a key of global significance. Many dryland soils have been degraded (deforestation and mismanagement), implying that they are far from saturated with carbon. The potential for long-term soil carbon restoration is very high.

Ruys received the 2015 first prize PostCode Lottery Green Challenge, a Dutch award for innovation in sustainable products. This is considered the most sought after award by those developing sustainable products. With this award, the company will be implementing large scale restoration projects in California, Mexico and Spain. It has shown that it is possible to grow olive, walnut and almond trees in arid land. The company has demonstrated in a 10 hectare land north of Riyadh that it is possible to grow trees like Acacia and Moringa without irrigation and survival rate of more than 70%.

Jurriaan Ruys' of Land Life Company & Ryan Pandya of Muufri.

Benefits of the COCOON technology

- No maintenance or irrigation needed after planting
- The case material in which the seeds are planted are biodegradable
- Focus is on growing strong roots first
- 10x lower cost, 10x higher survival and 10x less water
- Merges ancient irrigation techniques with patented technologies
- Can grow fruit trees in dry land

See how Cocoon, a product of Land Life Company, grows trees in Saudi Arabian desert.
Watch: http://www.greenchallenge.info/index.php/competition/nominees/233-jurriaan-ruys-land-life-company

PIOs Win Award for Creating Artificial Milk

A US-based company founded by a group of Indian-origin entrepreneurs, which produces artificial milk, has won a Dutch sustainability innovation prize of 200,000 euros. An international jury chaired by Steve Howard, Chief Sustainability Officer at multinational IKEA Group, awarded Ryan Pandya of Silicon Valley startup Muufri the runner-up prize of the Postcode Lottery Green Challenge 2015.

Muufri has identified the proteins, fats, vitamins and minerals in milk and is developing **a blending process that has the potential to eliminate as high as 65% of greenhouse gas emissions generated by commercial dairy farming.** The biotech startup was founded in 2014 by bio-engineers Ryan Pandya, Perumal Gandhi and Isha Datar.

Milk from Breweries

Ryan Pandya says Muufri is creating a future where milk comes from breweries rather than factory farms. We've identified the key components of all dairy products -- the proteins, fats, vitamins and minerals that lead to great flavor, unparalleled nutrition and culinary function ranging from cheeses to yogurts to ice creams – and we're assembling the milk of the future by combining these components in exact ratios optimized for human health. There are no animals involved, so our process is highly efficient and low cost without compromising on the great taste we all love. Muufri's innovative platform is revolutionizing the food system!

https://prezi.com/dbkiyi7ftnkl/new-harvest-dairy-project/

Degraded Forest Area to be Given to Business

The Union government has decided to **convert degraded land across the country into forest areas** through **private participation under public-private partnership (PPP) mode.** The degraded land, which is about one-third of the total forest area, will be given to the private industries on lease for commercial forest harvesting to **boost employment and revenue. Environment minister Prakash Javadekar** announced this during the CII's 10 Sustainability Summit in Delhi in mid September. Under the scheme, private companies will be allowed to grow forest and harvest it regularly for their industrial use so they don't have to import wood. Industries will be mandated to grow local species on one-tenth of the land.

The minister emphasized that protection of environment and development must go hand-in-hand. But he wanted Indian industries to invest more on research and development for creating sustainable practices. He said the key to sustainability is employment.

He said climate change and sustainability have become business for western countries as they have developed new technologies for it. "Green coal technology, climate technology, sustainable development practices, each of them has been developed by somebody else. We are just importing. Unless we make and we have them, we will not progress," he said.

YC Deveshwar, past president of CII and chairman of CII-ITC Centre of Excellence for Sustainable Development Advisory Council and chairman, ITC, said that a decade back sustainability was a diffused thought but with every passing year now sustainability has become a priority. Sustainability, he said, has three dimensions, "the competitiveness dimension, the job creating and social asset forming dimension, and the environmental asset creating dimension."

Sustainability has become business for western countries as they have developed new technologies for it. Unless we make and we have them, we will not progress. **Environment Minister Prakash Javadekar**

A decade back sustainability was a diffused thought but with every passing year now sustainability has become a priority – **ITC Chairman Y C Deveshwar**

Carbon-neutral Lighting in Kolkata Parks

Kolkata is poised to become India's **first city to have its public parks illuminated by an automated carbon-neutral solar lighting system, reducing the carbon footprint and electricity bills.**

The new system, first installed at Deshapriya Park on a trial basis, would now be extended to 28 other parks by the Kolkata Municipal Corporation. "The unique part in this solar lighting system is that it is **battery-less and connected with the power grid.** An automatic control system has been put in place and the **lights will be switched on automatically after evening and switched off in the morning,**" says renewable energy expert S P Gon Chowdhury, who has devised the technology.

The lights will also dim automatically after midnight when requirement is low. Explaining the concept of **carbon-neutrality manager,** Chowdhary said that the **system would push solar energy generated during daytime back into the main electricity grid with the aid of a micro-converter.**

"No battery is therefore needed. The amount of solar electricity produced through the solar panels is recorded on an electric meter. **It is carbon-neutral because it produces as much electricity as it consumes,**" the solar expert said, claiming that the carbon neutrality manager, developed by him, is a first in the world. The pilot project began earlier this year with Deshapriya Park where they have installed 50 solar electric posts having 180 Watt solar panels with LED lights. **The system would also be useful for deployment on highways.**

"We have been very successful in that project. Earlier the electricity bill used to be Rs 17,000, but now it has come down drastically to less than Rs 2,000. That is 90 per cent savings," Chowdhury said adding that with this technology parks can be made 95 per cent carbon-neutral.

More Bluechip Companies Join RE100

Goldman Sachs, Johnson & Johnson, NIKE, Inc., Procter & Gamble, Salesforce, Starbucks, Steelcase, Voya Financial, and Walmart are the latest group to join RE100, pledging to source 100% of their electricity from renewable energy to reduce CO_2 emissions and seize the business benefits.

RE 100 is an ambitious global campaign led by The Climate Group in partnership with CDF, to engage, support and showcase influential businesses committed to 100% renewable electricity.

Momentum behind RE100 has also grown globally in the last year. When RE100 was launched one year ago at Climate Week NYC 2014, there were 13 original corporate partners – IKEA Group, Swiss Re, BT Group, Formula E, H&M, KPN, Nestlé, Philips, RELX Group, J. Safra Sarasin, Unilever and YOOX Group – as well as Mars, Incorporated, the first US business on board.

Now 36 major businesses from around the world have joined the campaign, with green desert economy developer Elion Resources Group becoming the first Chinese company in March 2015, followed in May by the first Indian company information technology leader **Infosys.**

Many of the companies making RE100 commitments have also supported the Corporate Renewable Energy Buyers Principles, an initiative of WWF and the World Resources Institute (WRI), which seeks to make it easier for companies to buy renewable energy.

Wipro Selected Dow Jones Sustainability World Index Member for the 6th Year

Wipro Limited, a leading global information technology, consulting and business process services company, has been selected as a member of the global Dow Jones Sustainability Index (DJSI) – 2015 for the sixth year in succession. Wipro is included in both the DJSI World and Emerging Markets Indices.

A total of 1,845 companies were assessed from around the world of which 317 have been chosen as the DJSI World constituents for the year 2015-16. **The IT Services sector saw 76 companies participating globally of which 8 have been selected for the World Index.**

DJSI is a leading global indicator tracking the financial performance of companies across all industries that outperform on Sustainability. The selection was done on the basis of an exhaustive, rigorous **evaluation of Wipro's sustainability performance on several dimensions spanning economic, environment and social sustainability** – a few examples are Climate Change Performance, Corporate Governance, Innovation, Labor Practices and Digital Inclusion.

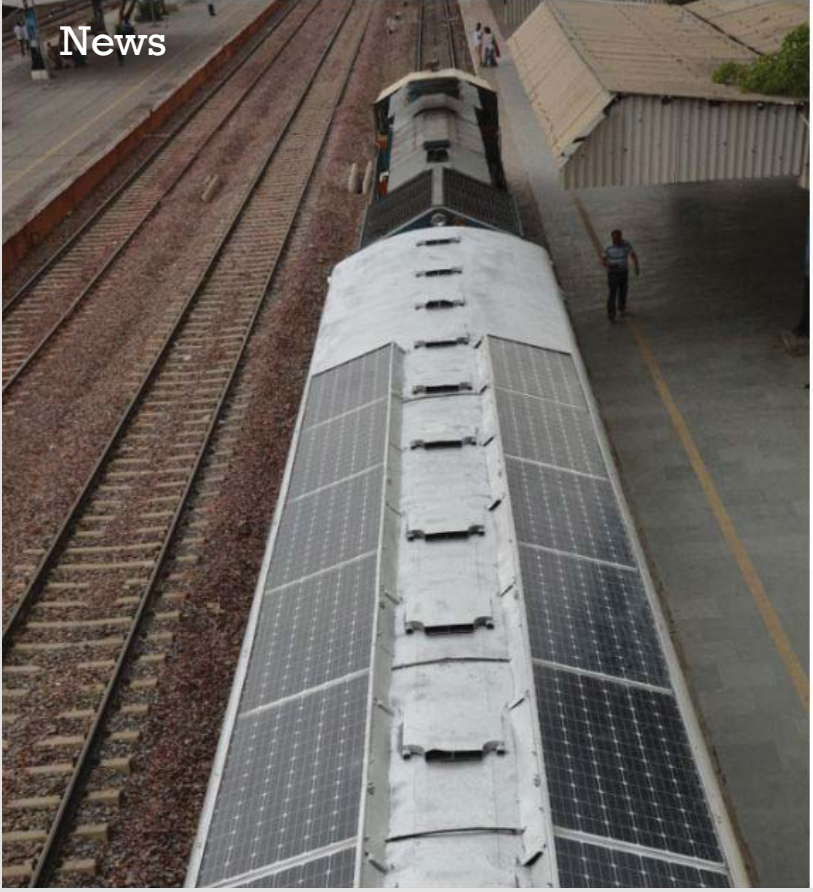
Speaking about this achievement, **Anurag Behar, Chief Sustainability Officer, Wipro Limited** said, "It is a proud moment for us at Wipro, to be honored as a member in the DJSI (World) for the sixth successive year. **DJSI's rigorous and comprehensive assessment helps us constantly calibrate and strengthen our sustainability programs across economic, ecological and social dimensions."**

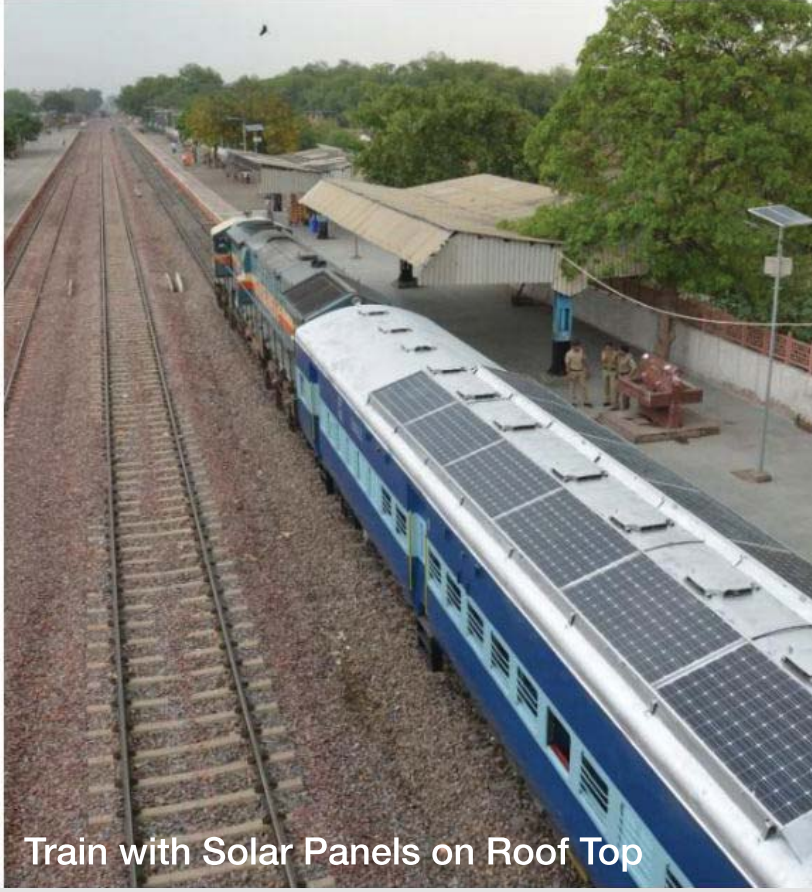
The DJSI follow a best-in-class approach, including companies across all industries that outperform their peers in numerous sustainability metrics. Launched in 1999, DJSI are the first global indexes tracking the financial performance of the leading sustainability-driven companies worldwide.

Tata Motors to do Life-Cycle Assessment of Nano Cars

The environmental impact of automobiles in India is measured by its tailpipe emissions. Some auto companies in Europe like the Volkswagen have adopted the Life-cycle Assessment (LCA) to measure how much of damage they can minimize. LCA is typically a cradle-to-grave approach – from raw material mining to the end-of-life stage.

Tata Motor's efforts to bring in the LCA concept for its Nano cars is the first in India. The $42-billion Tata Motors, India's largest automobile maker, is one of the few companies infusing life-cycle thinking within and across its vendors. The Nano CNG car is said to be greener than a conventional three-wheeler fitted with CNG.





Train with Solar Panels on Roof Top

Solar Power Systems On Roofs Of 500 Trains

Looking to extend the success of a pilot project that saw the roofs of trains covered with solar power systems, the Indian Government is planning to financially support a similar but larger plan.

The Government may provide subsidies to Indian Railways to set up solar power systems atop 500 trains. The systems would be used to power lighting, fans, and air-conditioning systems aboard the trains, while the potential subsidy may be provided through the National Clean Energy Fund, which is replenished through the tax levied on coal mined or imported in India.

This program is in addition to the existing plan to set up 500 MW rooftop solar capacity at railways stations across the country.

Both these plans are expected to bring huge financial savings to Indian Railways, which is probably the single largest consumer of electricity in the country. In 2013-14, Indian Railways consumed 17.5 billion kWh electricity, or about 1.8% of the total electricity generated in India. On top of this, it also has to pay significantly higher tariffs than other consumer categories.

Indian Railways is planning to source **10% of its electricity demand from renewable energy sources by 2020.** Last month, it signed an agreement with the Ministry of New & Renewable Energy to set up renewable energy projects, including **rooftop projects, utility-scale projects, solar water heating systems, and solar street lighting systems.** The Ministry of Railways also announced last year that it would set up 1 GW of solar power capacity over the next 5 years.

Indian Railways is also planning to **set up large-scale solar power projects on its unused land,** and may open tenders for competitive auctions of the projects to set up these power plants.

Yves Rocher & Sadhguru during 'I Love Trees Campaign'

Isha Foundation Plants 15 Million Native Trees

Isha Foundation is not only a spiritual abode in Coimbatore, it's also an inspiring leader in advocating and practicing sustainability in several ways. One of the most visible and impactful initiatives is the planting of native trees on a mammoth scale

Isha's Project GreenHands (PGH) has reported planting 15 million saplings of 84 different native tree species in the last five years in south India. This initiative was funded by Yves Rocher Foundation (YR). This is part of YR which has funded planting of 50 million trees across the world. To celebrate this milestone, Sadhguru, the founder of Isha Foundation, will be the guest of honor at a summit in Paris, organized by the Yves Rocher Foundation (YR) on 12th October 2015.

Over 50 years ago, Mr. Yves Rocher was convinced of the importance of environmental conservation when he created the brand that bore his name. His son, Jacques Rocher, president of Yves Rocher Foundation, continued to follow and fulfill that vision after he took over the reins. Today, the Yves Rocher group is the world leader in botanical beauty care with operations in over 90 countries.

In 2007, inspired by Wangari Mathai and using the framework from the UN initiative "Plant for the Planet: Billion Tree Campaign", Jacques took a pledge to plant 1 million trees. To fulfill that aim, YR began identifying planting partners. YR took note of PGH creating a Guinness World Record of planning one million trees as part of its "Trees for All" program. Saplings are raised in Isha nurseries with people's participation, and distributed to anyone who commits to plant and nurture them.

Isha Foundation is also very active in rural education through its Isha Vidya initiative. Recent record indicates Isha running 9 Rural Schools in Tamil Nadu and Andhra Pradesh, with 5820 children - 58% of them on full scholarship and the rest on subsidized fees. It also does critical interventions in 40 rural government schools in Tamil Nadu benefitting 28000 children.

Experts believe that practicing yoga transforms people and connects them to the earth at a deeper level. Surveys suggest yoga practitioners turn out to become sustainability champions both at home, workplace and society. Isha Foundation, through its 'Inner Engineering' program has transformed millions of people.

CEOs Sing, Dance, Cook to Save Poor Kids' Lives

By Uma Haridas

Genesis Foundation is a unique NGO that focuses on funding treatment of critical illness of poor children across India through innovative ways. It has so far treated almost 700 kids by involving CEOs, musicians and artists.

Genesis Foundation is the brainchild of **Prema Sagar,** the doyenne of India's public relations sector. After she sold her PR firm to a multinational PR company, she wanted to make a difference to the lives of the poor. She didn't go looking too far for inspiration – Mother Teresa. She has put her close network with the heads of businesses to good use. She uses innovative ways to raise funds for the poor – especially those who cannot afford expensive medical treatment.

GF's main events are **the Kasauli Rhythm & Blues Festival, CEOs Cook for GF Kids, Music for Life events,** among others. This year will see the addition of another musical event called the **Goa Rhythm & Blues Festival,** scheduled for October 30-31, 2015 at Taj Aguada, Goa. GF is also the beneficiary of **CEO's Got Talent,** produced by FremantleMedia.

Kasauli Rhythm & Blues Music Festival (KRBF) is an annual music festival held in Kasauli, Himachal at Baikunth Resort. Believing strongly that music is a positive and participatory force in the creation of change, GF invites established and upcoming artistes from India's diverse pool of musical talent to perform in support of the critically ill under-privileged and orphan children under its care. Music aficionados can contribute for the cause by simply doing what they love – listening to music!

JadhavGADH Music Festival is GF's latest endeavor to marry music and a worthy cause, following the success of KRBF. An annual event, this festival is a two-day event organized at the majestic 17th century JadhavGADH Fort, located just outside Pune. The funds raised from this festival go towards the treatment of critically ill under-privileged children under its care.

'CEOs Cook for GF Kids' as a unique fund raiser was first held on 15th January 2005 at the **Nandiya Gardens, Maurya Sheraton & Towers, New Delhi.** Putting their culinary skills to the test, nine CEOs and captains of industry prepared gourmet meals for over a hundred enthusiastic attendees. Each of these attendees had bought out plates or tables, the proceeds of which went to GF's cause. This event pioneered the practice of participatory fund-raising at Genesis Foundation. Since then, seven more successful lunches have been organized in Delhi, Gurgaon, and Bangalore – allowing heads of various organizations to enable Genesis Foundation's vision. The most recent edition of the event even saw several heads of diplomatic missions joining in to cook for the cause!

Launched in 2010, **'CEOs Sing for GF Kids'** is a popular fund-raising initiative of the Genesis Foundation. In keeping with the Foundation's goal to build a participatory culture of giving, musically-inclined CEOs come together regularly to perform at these fund-raising concerts. Resources for the Foundation are raised through ticket and merchandise sales at these events. This initiative is unique because it gives busy corporate honchos an opportunity to explore and showcase their passion, whilst raising resources for the medical care of lesser privileged children.

'CEOs Got Talent' is a first-of-its-kind property that has been created by FremantleMedia within the 'Got Talent' franchise to recognize the creativity and talent amongst CEOs, which often remains hidden due to their intense day to day business lives. The concept for the program was jointly developed by FremantleMedia and Genesis Foundation and the proceeds from the event were specifically earmarked for GF. GF leveraged its experience and franchise amongst its friends and well wishers – many of India's CEOs.

Music-For-Life Concert Series is a series of musical evenings organized by GF. Independent musicians are invited to perform at these events with a view to promote their unique talent. Rhythms and Blues festival in Goa on October 30-31 is their latest venture.

Excerpts from an email interview with Prema Sagar

Who are the drivers of GF and what inspired them to do so?

More than 14 years ago, Jyoti Sagar and I established Genesis Foundation as a way to pay tribute to the child we lost to critical illness. We realized early in our lives, the excruciating pain parents go through when their child is suffering, and we didn't want anyone else to go through it. Add to that the prohibitive cost of treatment for these illnesses and you have at hand an extremely dire situation.

Inspired by Mother Teresa's selfless work, Jyoti and I founded GF in 2001 to provide support to children from under-privileged backgrounds suffering from critical illnesses. The Foundation

supports children needing treatment for the following critical illnesses—cancer, cardiac disorders, thalassemia, extreme deformities and in the case of organ transplant, post-operative care and medication.

What other innovative plans do you have in the near future?

At the core of the Foundation's efforts lies the task of raising funds for the critically ill children from underprivileged backgrounds. When there are so many issues to deal with, what can make a person connect specifically with GF? With that question in mind, the Foundation devised unique, participative events that connect with people's passions and take the concept of giving back far beyond the realm of cheque book charity.

This year, we are debuting the **Goa Rhythm & Blues Festival** in October, where we expect a good line-up of artists and a lot of people wanting to attend. If music is food for the soul, combining it with giving makes it a much more wholesome meal.

Our **Power of 100** initiative is also one of its kind, where individuals from corporates can give ₹100 or multiples, each month, from their salary, through a payroll program — an amount they spend on coffee—to the Foundation as their contribution to the cause.

Our outreach plans are designed to create a community of supporters, medical institutions and care-givers, non-profit organizations, corporate organizations, and individuals. We have been taking interesting initiatives on the outreach front, the latest being the launch of our iOS and Android app called GF Live.

How can you scale this effort?

While we have supported the treatment of over 700 critically ill children, we realize that we haven't even touched the tip of the iceberg. There is so much more to be done. There are two broad ways we are looking at scaling—get more people involved and get more partnerships in place. We started out as a Delhi/NCR centric organization. We now have a volunteer network in place for the south and the west as well, who interact with families of children and care-givers and hospitals in those areas. We are also forging new partnerships with hospitals and doctors every day to ensure that our support results in the maximum positive impact. We are also constantly seeking out new, interesting ways to get more people associated with the cause to inorganically expand the reach of the cause.

What are you expecting from the Goa music festival?

Goa means fun, music, dance, indulgence. But for us, Goa also means getting a whole community of people together to think about and contribute to a cause. Our events are a way for us to continuously build on our community of well-wishers, donors and overall friends of the cause. At Goa, we want to create an experience that people would love to be a part of. And when combined with a cause, it becomes that much more enriching as an experience. There is already a buzz that we are seeing and we are looking forward to see a lot of people attending the event. The funds raised from this event will be used to support the treatment of 15 critically ill children from under-privileged homes.

Know more at www.genesis-foundation.net

White Paper – Pricewaterhouse Coopers

Making Smart Cities Sustainable

A city which is both sustainable and smart will leverage ICT as well as place the sustainability lens over urban development and planning. Excerpts from a white paper prepared for a seminar organized by the Information Exchange Group's summit 'Smart City Landscape 2015', held in New Delhi on 10 - 11 September 2015

In India, as per the data from Census 2011, the population living in urban regions contributes 63% of the country's GDP. By the year 2030, cities are forecast to have 40% of the country's population and account for 75% of the country's GDP. Thus, cities are likely to continue being the powerhouses and talent warehouses of India.

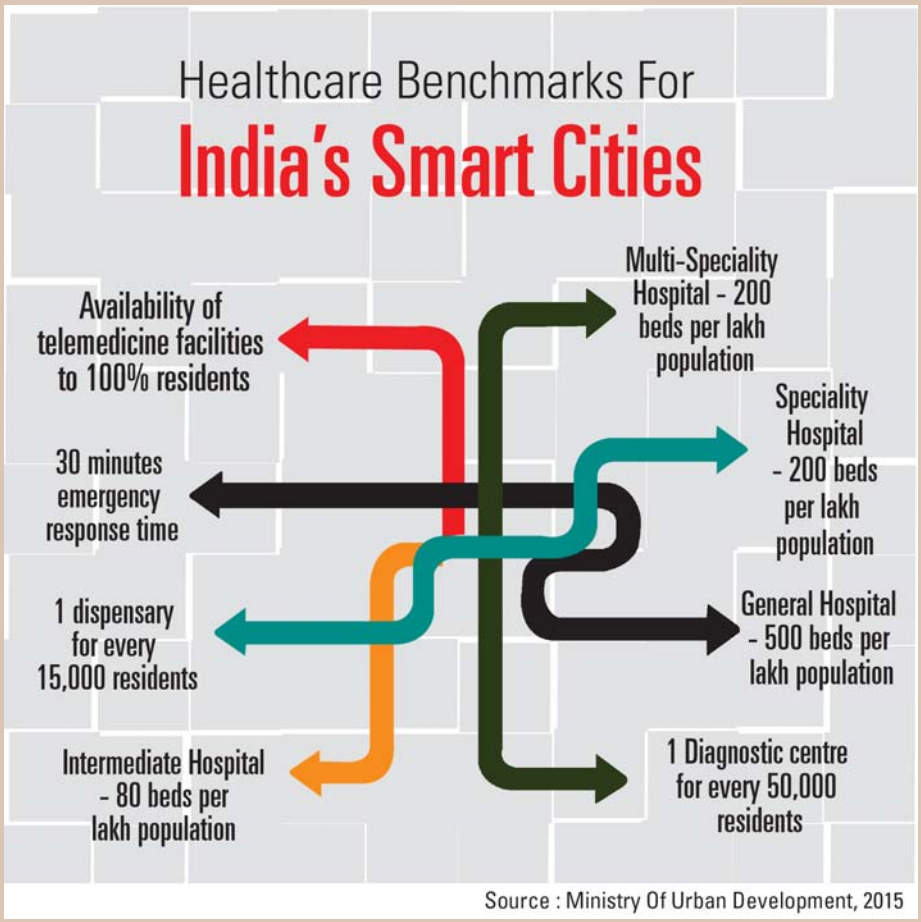
Apart from advantages, **urbanization** also brings with it certain challenges. Many Indian cities are **plagued with various environmental, social and economic issues such as resource scarcity, congestion, pollution, poverty, lack of affordable housing, proliferation of informal dwelling, as well as sewerage and sanitation problems.**

In fact, cities account for **60–80% of energy consumption across the globe and for more than 70% of worldwide carbon dioxide emissions.** In order to provide better living conditions for existing and future generations, cities need to be improved by adopting the smart route and at the same time focusing on the sustainability aspect.

Making smart sustainable

Sustainability and urbanization pose big challenges to city commissioners and urban planners. Ever since the advent of the notion of sustainable development, the idea of pursuing a sustainable urban development model for cities has been gaining increasing importance. At the same time, ICT and its applications have played a transformational role in solving complex problems around the world. The potential to use ICT-enabled solutions for helping cities deliver innovative and improved services to citizens led to the concept of smart cities.

A city which is both sustainable and smart will leverage ICT as well as place the sustainability lens over urban development and planning. **The pillars of a smart sustainable city are also directly or indirectly aligned**



with the objectives of the Sustainable Development Goals (SDG). The closer the integration of sustainability into India's '100 Smart Cities' initiative, the greater will be the linkages with the SDGs.

Smart and sustainable city dashboard

Each city, with its own vision and plan, needs to work together with various stakeholders and define what 'progress' will mean over the course of implementing its plan. **Measurable key performance indicators (KPIs) with corresponding targets and timeframes will have to be defined and monitored continuously and the ensuing progress will have to be transparently reported and communicated to all the stakeholders.**

How to get there

With the recent announcement of 98 smart city aspirants by the government, India has taken concrete steps towards the smart city transformation. As per the mission guidelines for smart cities released by Ministry of Urban Development, a clean and sustainable environment will be a significant feature for the upcoming smart cities. **The sustainability aspect is not just in terms of the environment but also has economic, social and governance dimensions.** The three pillars of **sustainable economic advancement, political participation and social emancipation are the core foundations of a smart sustainable city.**

Practices that contribute to the development of smart sustainable cities

- ### Engaging citizens in governance

  With the advent of the smartphone revolution, social media proliferation, a dynamic media industry and instant connectivity, people are becoming increasingly aware as well as keen to voice their opinions and do their bit for society by sharing their inputs with policy-makers. **Participatory governance** focuses on the democratic engagement of citizens to improve citizen participation in governmental policies as well as to crowd-source ideas. It provides a platform for citizen-government interaction that bolsters the concept of democracy as well as improves service delivery and inculcates social inclusiveness.

- ### Opening up data for transparency and service delivery

  The city must have open data that is accessible to all. With open data, governments may fuel the set-up of groundbreaking services and businesses that render commercial and social value. Additionally, open data facilitates coordination among multiple departments and increases the visibility of city coordinates for the delivery of services.

- ### Active involvement of the private sector

  Public-private partnership (PPP) has been hailed as the preferred route for developing smart and sustainable city projects around the world. Large global players, with their wealth of knowledge and resources, need to invest in R&D and develop standardized yet customizable solutions that can be replicated and scaled up around the world. Innovative start-ups and local players will also play a critical role.

  For example, Atal Indore City Transport Services Limited (AICTSL) signed a MoU with WBCSD for

preparing a mobility plan in July 2014. The city is collaborating with mobility-related private players for developing its sustainable mobility plans through WBCSD's Sustainable Mobility Project 2.0 (SMP 2.0).

- **Tapping innovative financial sources**

  The Indian government's smart city initiative has specified several possible funding sources. Besides central and state funding, the list includes possible **funding from multi-lateral and bilateral development agencies, pooled municipal debt obligation facilities, municipal bonds, real estate investment trusts and infrastructure investment trusts.**

  Smart and sustainable projects centered on climate change mitigation and adaptation may access the **Green Climate Fund (GCF) of the United Nations Framework Convention on Climate Change (UNFCCC).** Projects with positive environmental benefits can also utilize **the green bonds.** Projects that are in the spirit of corporate social responsibility (CSR), as defined by the Companies Act, 2013, may attract funds from companies with significant unspent **CSR budgets. Crowd-funding** has also been identified as a potential route for supporting citywide projects. For example, Mosaic, a US-based marketplace lending firm, provides a unique crowd-funding platform allowing investors to lend their money for supporting rooftop solar power projects and earn a return on their investment.

The core of sustainable development is meeting the needs of the present without compromising the ability of future generations to meet their own needs.

The path towards becoming smart and sustainable will invariably require coordinated action by the multiple city stakeholders. Cities may establish a nodal agency that will work together with city officials and policy-makers, in order to ensure that municipal strategies and urban planning targets are completely aligned with the city's overall smart and sustainable vision.

Responsibility and accountability are integral towards making our community more sustainable. Good governance serves as a powerful inspiration for promoting reforms in policies and programs for sustainable development. **Smart sustainable cities will lay the foundations for a better future—a future where cities care for people, the earth, air, water and the environment.**

Fitting Solar Photovoltaics in the Indian Power Sector

Lessons can be learned from countries like Germany, which recently offered two billon euros worth support, and its experience in renewable energy penetration. However, the sheer scale and complexity of the Indian power sector demands an indigenous solution, says Harshid Sridhar

The Indian government aims to provide power for all by 2019. In pursuit of this goal, the government has set a renewable energy target of 175 GW by 2022, which is a very ambitious target. This 175 GW will include 100 GW of solar, 60 GW of wind, 10 GW of biomass and 5 GW of small hydro based power. This has led the dormant Indian power sector to finally wake up and rise to the task. In order to gauge the likelihood of achieving this target, an understanding of the energy sector is a prerequisite.

As on August 31, 2015 India's total installed generation capacity was 276.78 GW (according to the All India Installed Capacity of Power Stations – Monthly Report, published by Central Electricity Authority (CEA)). The total generation target set for 2015-16 is 1137.5 Billion Units (BU) (CEA). Table 1 below provides a bird's eye view of the status of India's power sector, to help visualise the grand landscape of the Indian energy sector.

Table 1: Status of India's Power Sector

Anticipated Energy requirement (2015-16)	1162.4 BU	Load Generation Balance Report (LGBR) 2015-16
Anticipated Energy availability (2015-16)	1138.3 BU	
Anticipated Peak Demand (2015-16)	156.86 GW	
Anticipated Peak Met (2015-16)	152.75 GW	
State/region with highest peak deficit (MW/%) (2015-16) : Karnataka	-2.792 GW (-25.6%)	
State/region with highest peak surplus (MW/%) (2015-16) : Damodar Valley Corporation	1.351 GW (49.7%)	

Figure 1 shows the projected energy demand and peak demand in the short (2016-17) and medium (2021-22) terms.

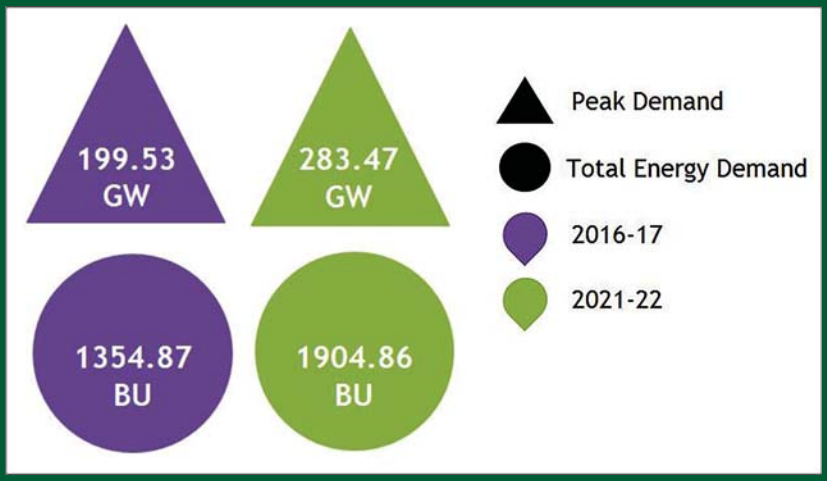


Figure 1: Short and Medium Power Projections
Source: 18th Electric Power Survey, as quoted in National Electricity Plan 2012

While the projections for 2016-17 and 2021-22 are perceived to be conservative,the fact that we have a mammoth task at hand should be acknowledged. Although, our installed generation capacity is higher than the peak demand, the gap between the power required and power supplied remains significant. As shown in Table 1, the all India anticipated deficit in 2015-16 is 2.1% and 2.6 % in overall energy and peak demand, respectively. The reality of choked-up transmission and distribution infrastructure paints a far darker picture, resulting in (un)planned load shedding (power cuts).

In an effort to meet the demand for electricity, renewable energy is being considered as the hopeful champion among many potential solutions. One of the initiatives which the government has put a major thrust on, with respect to renewable energy solutions,is the application of solar photovoltaic (PV) technology. The government has announced the commissioning of a large number of solar parks on a utility scale as well as laid emphasis on rooftop PV. If the rooftop PV target (40GW) is achieved as envisioned, a portion of households/ establishments could not only become independent of the grid, some may also be in a position to supply power back to the grid. Hence, a supplement to centralised generation, in the form of distributed generation, could become an integral part of the mainstream power sector.

Solar PV technology fits well with the interests of a tropical country like India which is blessed with good sunshine almost throughout the year in most parts of the country. Acknowledging this potential, there is an ambitious plan of setting up 25 solar parks with capacities ranging from 500 MW to 1GW each, as a part of the 100 GW target. While solar PV technology is clean and relatively seems like a turnkey solution,it has its own set of challenges.

Inherent technology/operational challenges

Solar energy by its very nature is intermittent; it is not a source of constant power output. Its efficiency is also lower than its non-renewable counterparts. The amount of solar energy generated is strongly dependent on the amount of sunshine that a place receives, presence of cloud cover, dust, moisture, and bird droppings, and the ambient temperature at the plant site. The random nature of some of these factors makes them hard to quantify.

Challenges with respect to grid integration

If large-scale penetration of solar energy is to be realised, then appropriate studies/measures must be taken to ensure that the traditional grid has provisions to bear with such an intermittent generation source. Currently, the Indian grid's transmission and distribution sections are not prepared for handling very high penetration from renewable energy sources. The case of curtailment of power (especially in case of wind energy), i.e., cutting off a source from the grid when it is generating excess energy is a paradox which highlights the weakness of the current power evacuation strategy.

Opportunistic viewpoint despite the challenges

Despite these obstacles, the excitement around PV technology is high. The challenges can be viewed as an opportunity for deeper research and innovation. Like in most cases, a singular solution can never address the problem. In the case of renewable energy, it would take the perfect blend of appropriately upgraded grid infrastructure, calibrated inputs from conventional sources (coal, nuclear, hydro, gas), right class of storage technology at different levels, and strategic spread of distributed generation to make the best out of the available energy sources. It is imperative to master the art of balancing the intermittent source and a mildly flexible grid. Lessons can be learned from countries like Germany which run on high renewable energy penetration. However, the sheer scale and complexity of the Indian power sector demands an indigenous solution.

Organisations like the Center for Study of Science Technology and Policy (CSTEP), Bangalore, are working towards solving the PV puzzle with respect to the larger canvas of the Indian energy sector. CSTEP is developing a computational tool to conduct techno-economic feasibility assessments of solar PV and solar thermal technologies, from engineering and financial standpoints. CSTEP has also signed a tripartite Memorandum of Understanding (MoU) with the Bangalore Electricity Supply Company (BESCOM) and Karnataka Renewable Energy Development Ltd. (KREDL) to pursue high impact research projects with respect to renewable energy. A holistic approach which combines factors such as resource availability (land, water and fuel), transmission and distribution infrastructure (existing and future projected), projections of future demand and generation addition is being pursued to paint a realistic image of grid-integrated solar PV solution.

If all the pieces (technology, economics, policy, etc.) fall in place, the Indian energy sector is all set to experience a jump similar to that experienced by the communication sector with mobile phones. It is imperative to balance the energy needs of the country. Embracing the bountiful rays of the sun could aid India to achieve the growth trajectory it deserves.

Harshid Sridhar is a Research Engineer working in the areas of power systems and distributed energy systems. He holds a Master's degree in Engineering (Power and Energy Systems) from Arizona State University, USA, and a Bachelor's in Electrical Engineering from Anna University.

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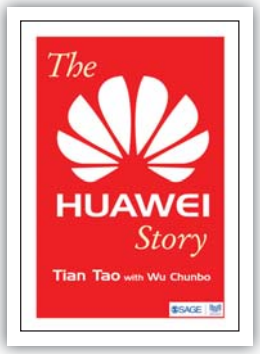

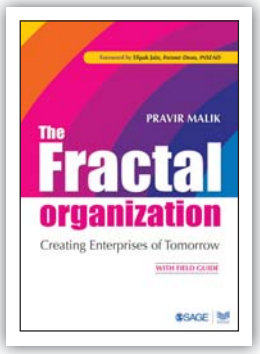

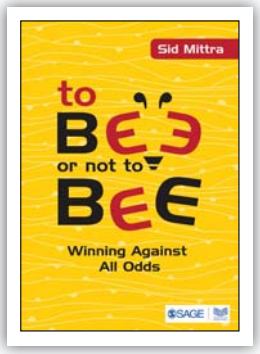

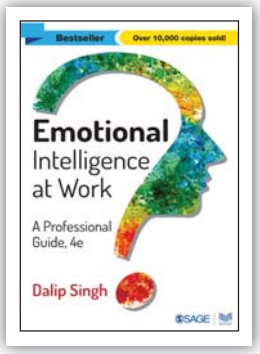

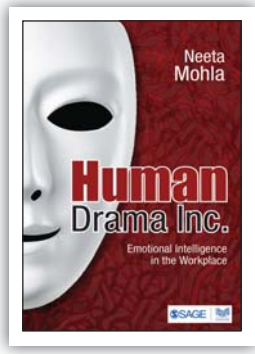

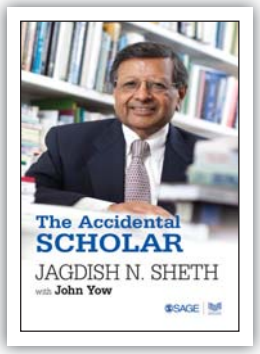

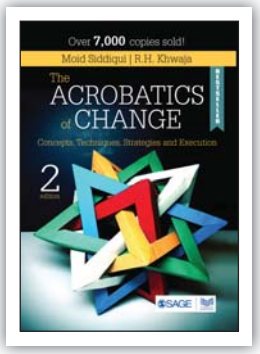

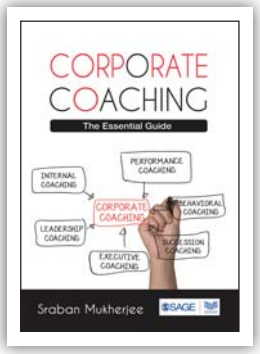

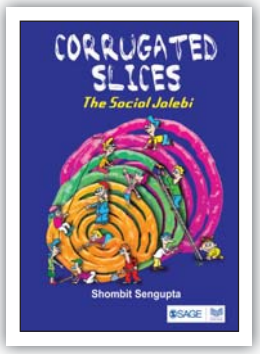

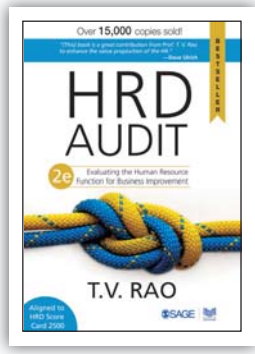

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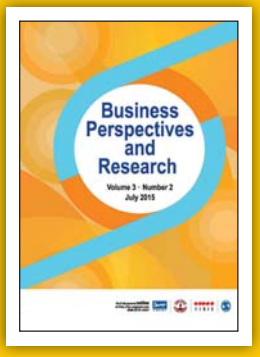

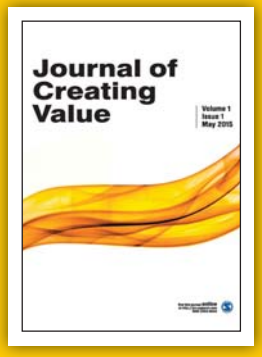

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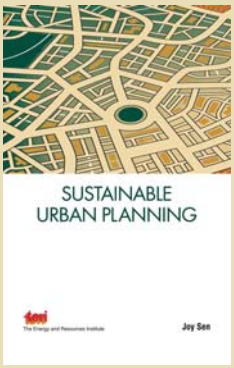
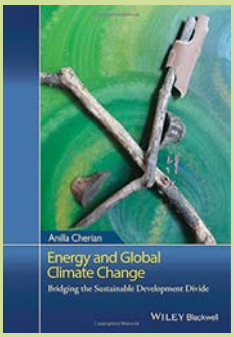


Sustainable Urban Planning

by Joy Sen, The Energy and Resources Institute, October 2015

Developing an approach for sustainable planning framework in the Indian context is extremely complex due to the diversity in the urban and metropolitan regions in the country. Sustainable Urban Planning attempts to clarify the planning process and sets a broad framework of urban planning in the country. The book focuses on the planning reality of fundamental dimensions of sustainability and explains a work framework of the dynamics of sustainable planning in India.

The present book clarifies the planning process to students, who are trying to work in the Indian context. It presents in three sections a set of interwoven discussions. Section one operates on the corpus of planning reality to disentangle the sutras of fundamental dimensions of sustainability and the interrelationship between these sutras to re-explain a working framework of the dynamics of sustainable planning in India. Section two expands on each of the dimensions, explaining their divergent parameters and their indispensable roles in the making of such a framework. Section three synthesizes all of them to form the framework itself.



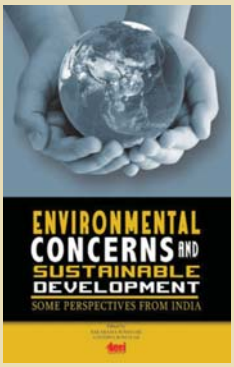
Energy and Global Climate Change: Bridging the Sustainable Development Divide

by Anilla Cherian, Wiley-Blackwell, October 2015

Energy and Global Climate Change: Bridging the Sustainable Development Divide focuses attention on two urgent global development challenges faced by the UN and its member states: access to sustainable energy for all, and global climate change. This book presents compelling evidence about an often neglected aspect of the energy–climate change–development nexus faced by millions of poor: problems caused by the use of inefficient and polluting energy sources, and the lack of access to sustainable energy services.

Based on a detailed examination of major UN global climate change and sustainable development negotiated outcomes over the course of several decades, this book argues in a powerful and insightful manner that intergovernmental negotiated outcomes aimed at solving the climate change and energy access challenges have been restricted by being placed in different negotiating silos. This siloization or compartmentalization has resulted in separate tracks of negotiated outcomes on two inextricably linked global development challenges; and, has thereby hindered prospects for integrated action.

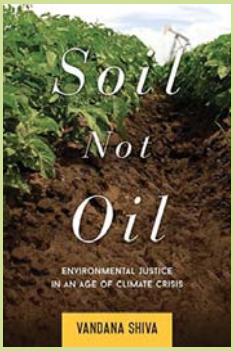
This book points out that the existence of these two silos is especially hard to ignore in light of the urgent UN–led quest for an integrated and universal post–2015 development agenda anticipated to be anchored by new sustainable development goals on energy access and climate change. By addressing the heavy reliance on inefficient and polluting energy services which result in indoor air pollution and short lived climate pollutants that tragically impact millions of poor people, this book highlights the unique importance of integrated action on the energy–poverty–climate change nexus in the UN s post–2015 development era.



Environmental Concerns and Sustainable Development: some perspectives from India

by Sakarama Somayaji, The Energy and Resources Institute, September 2015

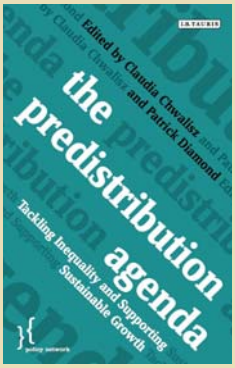
At the dawn of this 21st century, environmental concerns have received utmost attention from all segments of human society. The extreme abuse of nature and ruthless hunt for material happiness are the reasons for post-enlightenment destruction of the environment. Many consider the issues related to environmental degradation as an 'environmental crisis'. During the last century, humans have been exploiting nature not merely for need but also for greed. Environmentally-concerned individuals call for immediate action to stop being greedy and act positively. In India too this environmental awareness is fast spreading and the Honourable Supreme Court of India has directed the Central and state governments to introduce courses regarding environmental issues at all levels of education. This book is a compilation of research results pertaining to development, environment, and sustainable development in the form of articles.



Soil Not Oil: Environmental Justice in an Age of Climate Crisis

by Vandana Shiva, North Atlantic Books, October 2015

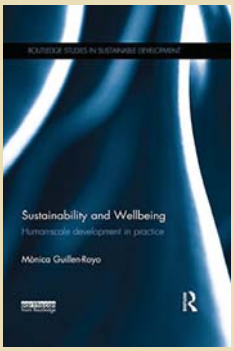
In Soil Not Oil, Vandana Shiva explains that a world beyond dependence on fossil fuels and globalization is both possible and necessary. Condemning industrial agriculture as a recipe for ecological and economic disaster, Shiva champions the small, independent farm: their greater productivity, their greater potential for social justice as they put more resources into the hands of the poor, and the biodiversity that is inherent to the traditional farming practiced in small-scale agriculture. What we need most in a time of changing climates and millions who are hungry, she argues, is sustainable, biologically diverse farms that are more resistant to disease, drought, and flood. "The solution to climate change," she observes, "and the solution to poverty are the same." Soil Not Oil proposes a solution based on self-organization, sustainability, and community rather than corporate power and profits.



The Predistribution Agenda: Tackling Inequality and Supporting Sustainable Growth

by Patrick Diamond, Claudia Chwalisz, I.B.Tauris, September 2015

The concept of predistribution is increasingly setting the agenda in progressive politics. But what does it mean? The predistributive agenda is concerned with how states can alter the underlying distribution of market outcomes so they no longer rely solely on post hoc redistribution to achieve economic efficiency and social justice. It therefore offers an effective means of tackling economic and social inequality alongside traditional welfare policies, emphasising employability, human capital, and skills, as well as structuring markets to promote greater equity. This book examines the key debates surrounding the emergence and development of predistributive thought with contributions from leading international scholars and policy-makers.



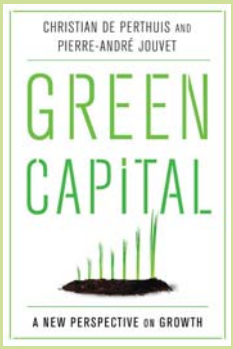
Sustainability and Wellbeing: Human-Scale Development in Practice (Routledge Studies in Sustainable Development)

by Mònica Guillen-Royo, Routledge, October 2015

The idea that we can meet human needs and simultaneously conserve and even enhance the natural environment is an attractive one. Since the Brundtland report popularised a definition of sustainable development based on the concept of needs, there has been a widespread belief that it should be possible to achieve a good quality of life without compromising natural ecosystems.

Sustainability and Wellbeing fills a gap in sustainable development studies by drawing on a range of case-studies to discuss the challenges and opportunities of using Max-Neef's Human Scale Development (HSD) framework in practice. The first section presents the theory and the methodology of HSD in the context of related literature on sustainable development and wellbeing. The second section discusses applications of the HSD methodology with three different purposes: the design of sustainable development interventions; the engagement of researchers with communities or groups of people in sustainability processes and the consolidation of sustainable community initiatives. Finally, the third reflects on challenges and limitations of using the HSD approach to define strategies for sustainable development and concludes.

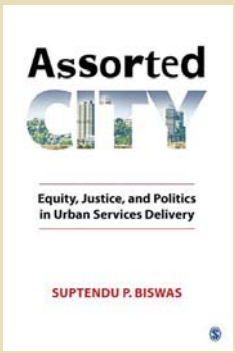
This is an invaluable resource for researchers and postgraduate students in wellbeing, sustainability, sustainable development, and human development.



Green Capital: A New Perspective on Growth

by Christian de Perthuis, Pierre-André Jouvet, Columbia University Press, October 2015

Challenging the certainty that ecological preservation is incompatible with economic growth, Green Capital shifts the focus from the scarcity of raw materials to the deterioration of the great natural regulatory functions (such as the climate system, the water cycle, and biodiversity). While we can find substitutes for scarce natural resources, we cannot replace a natural regulatory system, which is incredibly complex. It is then essential to introduce a new price into the economy that measures the costs of damage to these regulatory functions. This shift in perspective justifies such innovations as the carbon tax, which addresses not the scarcity of carbon but the inability of the atmosphere to absorb large amounts of carbon without upsetting the climate system. Brokering a sustainable peace between ecology and the economy, Green Capital describes a range of valuation schemes and their contribution to the goals of green capitalism, proposing a new, practical approach to natural resources that benefits both businesses and the environment.



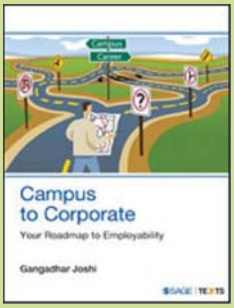
Assorted City: Equity, Justice, and Politics in Urban Services Delivery

By Suptendu P. Biswas, SAGE India, August 2015

A rare piece of research on the game of urban services delivery in an Indian metropolis.

Assorted City makes an important contribution to urban planning discourses in India by offering an in-depth conceptual and theoretical insight to address theory–practice dichotomy. A unique work on urban services delivery in an Indian city, it narrates how equity and justice are manipulated in the process. It captures generic urban processes in three ways: the questions it raises about planning, the multifaceted methodological perspective it introduces, and the commitment it underlines toward social justice and equity in a democracy.

This book explores and exposes the interplay between urban existence and the politics of service delivery.



Campus to Corporate: Your Roadmap to Employability

By Gangadhar Joshi, SAGE Texts, July 2015

A rare piece of research on the game of urban services delivery in an Indian metropolis.

Assorted City makes an important contribution to urban planning discourses in India by offering an in-depth conceptual and theoretical insight to address theory–practice dichotomy. A unique work on urban services delivery in an Indian city, it narrates how equity and justice are manipulated in the process. It captures generic urban processes in three ways: the questions it raises about planning, the multifaceted methodological perspective it introduces, and the commitment it underlines toward social justice and equity in a democracy.

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Course

Science and Management for Sustainable Living
www.bhoomicollege.org

Post Graduate Diploma Course in Sustainable Development (PGDM-SD)
http://bimtech.ac.in/

M.Sc. in Sustainable Development - Distance learning Course + information
The Global Open University
http://nagaland.net.in/

Post-Graduate Certificate in Sustainable Enterprise
Indian Institute for Sustainable Enterprise
http://theiise.net/pgcertinse.html

Postgraduate in Sustainability Management
Silver Bright Institute of Management
http://www.htcampus.com/college/silver-bright-institute-management-sbim

Post Graduate Diploma in Sustainability (Distance learning)
Chhattisgarh University
http://www.cguniversity.com/

Post Graduate Diploma
IGNOU- Indira Gandhi National Open University
http://www.ignou.ac.in/

MBA in Environmental Science
School of Management & Infrastructure and Development Studies
http://www.minds-india.org/

Master of Architecture (Sustainable Architecture)
Bharati Vidyapeeth Deemed University
http://www.bharatividyapeeth.edu/Campuses/Pune/default.aspx

MBA and MA in Sustainability Management
TERI University
http://www.teriuniversity.ac.in/

M Tech, MSc Environmental Science
Thapar University
http://www.thapar.edu/

PG Diploma
Entrepreneurship Development Institute of India
http://www.ediindia.org/

M Tech in Environmental Engineering
The National Institute Of Technology, Tiruchirappalli
http://www.nitt.edu/home/

Advanced Diploma in Bio Degradable & Solid Waste
Vellalar College for Women
http://www.vellalar.com/Arts/carrer-oriented-programmes.php

PhD in Environmental Science
Gauhati University
http://www.gauhati.ac.in/

MSc in Environmental Science
Dr Babasaheb Ambedkar Marathawada University
http://www.bamu.net/dept/environment/

Advanced Diploma in Energy
Vidya Prasarak Mandals Polytechnic
http://www.vpmthane.org/polywebnew/courses.html

BSc in Environmental Science
University of Calicut
http://www.universityofcalicut.info/

PhD in Environmental Science
Punjab University
http://puchd.ac.in/

MSc in Environmental Science
Bharathiar University
http://www.b-u.ac.in/

MA in Environmental Economics (Distance Learning Course)
Annamalai University
http://www.annamalaiuniversity.ac.in/

PhD in Environmental Bio-Technology & Solid Waste Management School of Environmental Sciences
Jawaharlal Nehru University
http://www.jnu.ac.in/main.asp?sendval=SchoolOfEnvironmentalSciences

MBA in Energy & Environmental Science
Symbiosis Institute of International Business
http://www.siib.ac.in/programmes.aspx

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Events

CII Online Master Classes on Leadership and Interpersonal Skills - Managing Conflicts Virtually

11 AM to 1 PM on 6 October 2015 – Live from CII

http://www.cii.in/OnlineRegistration.aspx?enc= pZVQM37jtSRTHIkmBsithUcH8xgAPZjfgK6AdkKK5KAN/8k0p5DiCMsT6LEZlPEZ

CII Institute of Logistics - Online Interactive Learning Series in "Warehousing Operations"

Session Dates : 7, 9, 14, 16 & 28th October 2015.

Session : 1500 - 1730 Hrs Assessment : 31st October 2015

Contact - cii.ice@cii.in

CII Karnataka Industrial Relations Conference 2015 - Innovative Industrial relations: A Vital Key to 'Make in India' a success

8 October 2015: 0830 Hours: Hotel Vivanta by Taj, M. G. Road: Bangalore

Contact - vishnudas.gupta@cii.in

Training Programme on Greenhouse Gas Accounting and Management

8-9 October 2015, Hotel The Fern, Ahmedabad, by CII and TERI

http://indiaghgp.org/content/registration-training-program-ghg-measurement-and-management

Conference on Future of Automotive Design

9 October 2015: 0900 Hrs: Hotel Le Royal Meridien, Chennai

Contact - k.s.johnson@cii.in

Mastering Corporate Social Responsibility - CII - Online Certificate Course on CSR – 2015

Start Date: Oct 10, 2015, End Date: Dec 18, 2015

Venue: Confederation of Indian Industry, India

http://cii.in/PrjOnlineRegistration.aspx?Event_ID=E000026858

Training Programme on Supply Chain Costing

15-16 October 2015, Chennai

Contact - t.pramila@cii.in

Workshop on Indirect Taxes with Specific relevance to GST

Mumbai – 16 October 2015

Pune – 28 October 2015

Hyderabad – 27 November 2015

Contact - t.pramila@cii.in

Frugal Innovation: How to Do More with Less

19th October 2015 from 1800-2000 hrs (Registration at 1700 hrs)

Hotel ITC Grand Chola, Chennai

Advanced Training Programme On Supply Chain Management

Pune - 27-28 October 2015

Gurgaon - 26-27 November 2015

Contact - t.pramila@cii.in

CII National IoT Summit 2015 - "Leveraging IoT to deliver Digital India"

16 November 2015; The Lalit Hotel, New Delhi

http://www.cii.in/OnlineRegistration.aspx?Event_ID=E000026738

Smart Cities Summit 2015 (2 Day Event)

October 08, 2015, FICCI, New Delhi

Contact: Mr. Santosh Mathew, Deputy Director

17th Annual Insurance Conference

October 09, 2015, Mumbai

Contact: Ms. Nidhi Tomar, nidhi.tomar@ficci.com

FICCI Business Delegation to WATEC 2015, Israel (7 Day Event)

October 10, 2015, Tel Aviv, Israel

Contact: Malvika Kareer, malvika.kareer@ficci.com

"TURF 2015" 7th Global Sports Summit: International Conference on Business of Sports (2 Day Event)

October 27, 2015, FICCI, New Delhi

Contact: Rajpal Singh, rajpal.singh@ficci.com

11th FICCI Higher Education Summit 2015 (2 Day Event)

November 03, 2015, FICCI, New Delhi

Contact: Rajesh Pankaj, education@ficci.com

4th Township Development

16-17 March 2016, GoodWood Park, Singapore

Contact: Karen Leong - karenl@trueventus.com

5th Annual Industrial Estate and Business Parks

16-17 March 2016, GoodWood Park, Singapore

Contact: Karen Leong - karenl@trueventus.com

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