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Don't Blame the Rain for Your Drought

Most droughts around the world, particularly in India, are not directly linked to deficient rainfall. Is it? Experts believe droughts are largely man-made – a result of bad water pricing policies, decreasing community engagement with local resources and a growing loss of belief in the idea of local solutions for local problems. Only encouraging proactive community involvement, smart technologies and smart pricing of water could prevent future droughts

By Benedict Paramanand

If you tell a politician or a farmer in North Karnataka or Vidharbha region of Maharashtra that deficient rainfall is NOT the real reason for drought conditions they face nearly every year, chances are that you'd be called insane and may even be beaten up.

Yet, the hard truth in a country that has hundreds of rivers and thousands of lakes and streams, according to environmental economists is, gross mismanagement of its water resources could be catastrophic in the near future. The list of complaints runs long but the most pertinent, as shown in the cases below, is a growing disconnect of local communities from a sense of ownership towards water bodies.

CII

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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.

Rishabh Media Network
22, 1st A Main, G M Palya,
Bangalore - 560 075. India
Phone - 91 80 41126557/9880602275
benedict@managementnext.com
www.sustainabilitynext.in

Information in this publication is drawn from a variety of sources, including published reports, interviews with practicing managers, academia and consultants. While doing so utmost importance is given to authenticity.

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Key takeaways from the Mann and Bengaluru stories is this – communities can solve many of their local problems and not wait for the government to solve it for them. The other is to believe the small steps can solve seemingly large problems

It is inconceivable how despite seven rivers that flow through 10 talukas of Belgaum district in Karnataka, the government has to rush water tankers during summers last few years. Bore wells and open wells are drying up quicker each year.

In 2014, four talukas of Mysore district were declared drought- hit when river Cauvery, one of south India's largest, flows just a few kilometers away.

This problem is not that of India alone. Recent drought in California too shows that gross water resources mismanagement is not just an Indian challenge but a global problem requiring nearly similar solutions. A recent report by Ceres, a US-based NGO says: "Weak pricing signals, poor accounting and outdated rules are really at the heart of the problem (in California).

Drought may be the new normal for our state, so we need to start treating water as the valuable - and limited - resource that it is."

Ceres wrote in its recent report that it's tackling the California challenge head on. "We are utilizing our greatest strength, mobilizing our networks of companies and investors, in order to lead the way to a secure water future."

http://www.ceres.org/issues/water

From Distress to Verdant Fields

Simple interventions involving communities have had far greater impact on managing water issues better than grandiose plans. The nearly complete transformation of a severely drought stricken group of villages to lush green fields is not a wishful thinking. The case of Pulikoti village in Mann district in drought-stricken Maharashtra is very illuminating.

In 2013 drought wrecked havoc on these villages to the extent that it forced locals to distress-sell their cattle. "Guilt would surge over us watching the thirsty animals," Mangal Sawant, a farmer in Pulkoti village told a DNA newspaper reporter. "There was little water to drink for us. How could we feed the cows then?" However, by early 2015 the farmer's five-acre land grew corn worth Rs two lakhs. Now, she also owns three cows, two buffaloes and a few sheep.

How did this 'miracle' turnaround happen? Thanks to Chetna Gala Sinha and Vijay Sinha, the founder couple of Mann Deshi Foundation. They located a thin stream running parallel to the dried up river. They consulted some hydrologists and geologists who suggested installing five percolation tanks which would work as reservoirs.

A year later when rains came they collected every drop that fell along with the stream and stored in these reservoirs. By November 2014, the report said, enough water was collected in each of the reservoirs to provide solace to 15 of the 106 villages. It helped 4,000 farmers and their livestock. If not the irrigation needs, these tanks have permanently solved the drinking water problem in Mann.

The foundation also took an innovative step to ensure that benefits go to maximum number of rural folk. They organized a camp and invited

Chetna, Founder of Mann Deshi Mahila Sahakari Bank

farmers to bring their cattle to a common ground. Chetna got the villagers to group their animals (about 14,000) on a common ground. The camp lasted for one and a half years until they were able to tide over the distress. Sawant said farmers have started harvesting multiple crops in Mann region as well and easy availability of fodder has enhanced milk production.

Chetna credits the swift revival of farming to Jaykumar Gore, the local Congress MLA for not letting the compli-cated government procedures become an impediment. The government chipped in with funding the camp since the foundation's resources were limited. Fewer villagers are moving out in search of work and are going back to farming – a true indicator of the transformation.

Seeing the success of this initiative the state government plans to replicate it across the drought-affected areas in Maharashtra which have seen maximum number of suicide rates in recent years.

Chetna is also the founder of Mann Deshi Mahila Sahakari Bank. She is the winner

of the 2013 India Social Entrepreneur of the Year (SEOY) awards organized by The Schwab Foundation for Social Entrepreneurship, a sister organization of the World Economic Forum.

If Mann can be transformed by the initiative of an NGO, by simply building percolation tanks and with a bit of help from a local politician, how difficult is it then to banish drought from villages in Belgaum and Mysore and perhaps anywhere else?

Active Government in Gujarat

Gujarat is not as heavily rain-fed as other Indian states, except Rajasthan. Yet, it has been able to increase its ground level water level in the last eight years as per the Central Ground Water Board data. This was possible because over 5.5 lakh water management structures like small dams, *boribandhs* and *khet talavadis* were built with the initiative of the state government and local bodies.

How a few residents got together and **revived three big lakes in Bengaluru** in the last three years, when the government's Lake Development Authority failed, is another example of citizens stepping in to solve their problems and not depending on the government to solve it for them. This has galvanized several resident associations to revive lakes in Bengaluru. Instead of focusing on reviving hundreds of lakes, streams, tanks and ponds in and around Bengaluru to cater to the city's water needs, state governments have been investing big money into drawing water from Cauvery river 140 kilometers away.

Key takeaways from the Mann, Gujarat and Bengaluru stories is this – communities can solve many of their local problems with local intervention and not wait for the government to solve it for them. The other is to think small to solve seemingly large problems.

That's where the proposed project of linking major rivers in India comes into focus. If most of the local problems can be solved like in Mann, why does India need such mega investment with very heavy environmental cost? Or is the contractor mafia influencing India's water policies?

Solutions for Better Water Management in India

- Install water meters for both farm and non-farm consumers
- Install solar powered pumps for irrigation
- Price water in a way that it encourages efficient use and at the same time does not pinch poor farmers. Cross subsidization could work here just like in LPG.
- Giving back a sense of ownership of water bodies to local communities in rural and urban areas by involving citizens in water management boards
- Aggressive rain water harvesting, ground water recharging, restoration of natural wells
- Engaging students proactively for awareness building and changing the mindsets of parents

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Kumbh Mela is World's Smartest Temp City

What is a smart city? Do smart cities around the world look or should look alike? What is 'smart' about a smart city? What is so distinct about Indian towns and how do they perceive the idea of 'smart'? These questions need to be answered poignantly if India is to avoid major mistakes in how it builds or rebuilds its cities and towns. That's what Rahul Mehrotra, ace architect and author, did when he spoke to *Mint* recently. His book 'Kumbh Mela, Mapping The Ephemeral Mega City' was released recently.

Mehrotra said Kumbh Mela is the smartest city he has seen and lived. "It is the world's largest temporary mega city built every three years for 55 days. It is the cleanest mega city I have lived in and what we have celebrated in the book is the efficiency."

What's the secret of its success? Governance is the key aspect. In the planning stage the mela has a top down structure but in the implementation stage the local head of the mela is given the power of the district magistrate. The empowerment is the secret.

If mayors in Indian cities are empowered, real transformation is possible.

Reclassification of Indian cities

Mehrotra hates the way Indian cities are classified today. They don't represent the soul of each city. Instead of categorization them as tier 1, tier 2 and tier 3, he wants them to be called as Temple towns – like Dharmasthala, Tirupati; Market towns like Erode or Garment town like Tirupur , Coffee town like Coorg, Tea town – Darjeeling.

The current focus is too much on technology and less on the people. "Technology needs to be the instrument that facilitates transition to smart, not the end itself."

Clean Ganga Project Update

Nidhi Tripathy, Director, National Mission for Clean Ganga, said at a conference in Bengaluru recently that the mega project is not an infrastructure project; it is a living entity.

She said Rs. 20,000 crore has been earmarked for spending on the project that includes adjacent tributaries, building waste management, clean water, sanitation etc. in the next 5 years

The team has identified the number to industrial polluting firms to be 764. Already nearly 80 polluting plants have been shut down and more closures are in the pipeline.

The implementing team works with an IIT Consortium, which is the brain for agency to tap.

A battalion of former defense personnel is being raised to help in implementing the project.

Answering to a question about preventing leakages of funds, she said transparency has been given a major focus – all data on projects, expenses, tenders are uploaded on the website and they are subject to RTI.

People have the option of clicking a picture of polluting firms or public bodies and uploading it on the website – which is bound to enhance governance and transparency.

For the project to take off quickly, considering that it is located in one of India's poorest regions, the project team is building Ganga Grams – model villages across the river so that others emulate.

Volkswagen India Operates Mobile Health Clinic in Khed

Volkswagen Pune Plant has started operating a mobile health clinic at *Kahnewadi tarfe Chakan and Sangurdi,* two villages in the interiors of Khed taluka. A specially modified mobile health clinic will visit the villages that lack even basic medical facilities. Free basic medical attention and medicines will be provided to a total population of over 2,200 people from the two villages, five days a week.

"Medical attention is one of the basic necessities of every individual. The residents of *Kahnewadi tarfe Chakan and Sangurdi* have to travel at least five kilometres to the nearest primary healthcare centre (PHC) for even minor health conditions. With our Mobile Health Clinic, we want to ensure that the villagers get the required basic medical attention close to their houses. Moreover, we will also provide them with the prescribed medicines at no cost", Peter Raussendorf, executive director – HR, Volkswagen India Private Limited, said.

Volkswagen India has committed an investment of approximately Rs. 48 lakh in the first year of its operation. This includes a brand new vehicle that has been modified for medical use, a dedicated team of doctor, paramedic, nurse and dresser-cum-compounder, the running cost for the project and the required medical supplies.

The clinic is fully-equipped with inspection bed and chairs for doctor and patient, cabinet for medical supplies, dressing table, wash basin, tube lights, fans, fridge, a GPS system, etc.

Recently, Volkswagen India also initiated a project to build water bunds at drought-affected *Naiphad* village in Khed taluka, committing an investment of INR 51 lakh, to increase water reserves of the village. The village was identified as part of the Government of Maharashtra's "Jalyukt Shivar Abhiyan" program to make villages in the state drought free.

Better Quality of Life For All With Lower Climate Impact is Possible: CStep

The biggest concern for climate change enthusiasts around the world is how badly will the Earth be worse off when one billion poor in India or elsewhere move up to middle class living standards. Conventional thinkers are expecting a catastrophe.

In contrast, a recent study by a Bengaluru-based think tank CStep (Centre for Science, Technology and Policy) proves that if the life-style aspirations of the poor are met with sustainable ways of living, the negative impact by 2030 could be 25% lower than business as usual. It has asked India to announce a 'Quality of Life Pathway' at the earliest.

A new study by CStep titled 'Quality of Life for All: A Sustainable Development Framework for India's Climate Policy,' provides detailed analyses showing that **quality of life for everyone can improve along a pathway in which greenhouse gas emissions and energy intensity reduction are co-benefits.**

This study places sustainable development at the centre of India's development strategy and asks if we could take a development approach that reduces air pollution, improves fresh water availability, enhances energy services, promotes efficiency in resource-use, provides cleaner cooking fuels, and facilitates food security. When such an approach is adopted, with affordable low-emissions technology choices, what does it do for greenhouse gas emissions and energy intensity?

Such a sustainable development (SD) path for 2030 was compared alongside a *Business as Usual (BAU)* or *Policy as Usual* Pathway for 2030. The results show that we can significantly improve quality of life in the SD pathway. Furthermore, in the SD scenario, greenhouse gas emissions are reduced by 27 % and energy use by 25% in comparison to BAU.

Dr. Sujatha Byravan, one of the authors of the report, says: "We have been able to demonstrate an inclusive development pathway in which there is reduction in pollutant emissions and enhanced clean energy access. At the same time, it reduces greenhouse gas emissions intensity by 16% compared to 2012, while fossil free sources contribute 32 % of our electricity generation by 2030."

The study builds on the India Energy Security Scenarios (IESS), a platform developed by NITI Aayog, to evaluate the energy demand and supply scenario of various sectors such as agriculture, buildings, industries, power and transport. Further, a bottom-up energy system model (TIMES-MARKAL) was used to examine several combinations of technology and policy options based on constrained optimization. This ensures that the SD pathway is strictly relevant to national and international contexts.

Read full Report on www.cstep.in

All Street Lights in India to be LED in 2 Years

The Government of India announced its plan to replace all street lights of the country with LED bulbs in next 24 months. This is in line with the Ministry's motto of providing energy efficiency and dependable energy in the country. Under Domestic Efficient Lighting Programme efforts are being made to replace all domestic bulbs into LED said Piyush Goyal, Union Minister of State (IC) for Power, Coal and Renewable Energy.

Does the government have a plan on how to dispose of the old bulbs? How much power would the system save with this exercise? What is the investment needed for it and who is paying for it?

Solar Power Targets

The minister said India has the target of producing 1,75,000 MW and renewable energy in next five years. The government also launched Solar Mission to generate 1 lakh MW solar power in the country. Similarly wind mission targeted at 75,000 MW power generations.

The government has taken this program as nation's mission. 125 crore people of India should work as 'Team India' in making this programme as a reality the minister said.

World's Cheapest Solar Power In MP at Rs 5 per unit

Madhya Pradesh is set to be home to the world's cheapest solar power.

Companies that have bid for projects floated by the Madhya Pradesh Power Management Company are ready to sell solar energy to the state for as less as Rs 5 per unit for a period of over 20 years. According to energy experts, the **offer is lower than the global average price of Rs 6.10 per unit** and even beats the cost at which the Delhi government buys from thermal power companies.

The price of solar power has seen declining globally in the last few years with India too witnessing a dramatic fall – fastest in the world – from Rs 17 per unit in 2010. The plummeting prices can be attributed to an **increase in Chinese export of low-cost photovoltaic cells that has in turn led to an 80% drop in prices of solar panels** over the last five years. Also, the **efficiency of the panels to convert solar energy into electricity has improved from 13% to 18%,** resulting in cheaper power.

India is a major investment destination for major international and domestic energy firms with Prime Minister Narendra Modi announcing a five-fold increase in target for generating solar power to 100,000MW. All state governments revamped their solar energy policies to meet the new target and Madhya Pradesh was the first to announce the setting up of special solar energy parks with single-window clearance.

A report in Hindustan Times expects solar power rates to fall in states like Rajasthan, Gujarat and Uttar Pradesh.

A report notes that **solar could be for energy what internet is for communication. In coming years, you will see solar energy run-equipment in homes like computers.**

First Full Solar-powered Airport in Kochi

Cochin International Airport Limited (CIAL) is all set to become the first airport in India that will operate on solar power. Kerala chief minister Oommen Chandy inaugurated **CIAL's green initiative -- a 12MW solar power project set up on the premises of the airport.**

When the photovoltaics (PV) panels are laid across 45 acres near cargo complex become functional, Cochin airport will have 50,000 to 60,000 units of electricity per day to be consumed for all its operational functions.

CIAL has many firsts. It was the first to adopt the PPP model in building an airport; introduced a path-breaking rehabilitation package for people whose land were acquired for the airport. Its solar experience started in 2013 itself on roof tops of one of the terminal buildings. The airport has so far **saved more than 550MT of CO_2 emission**.

Records Show Climate Change Targets ARE Exceeded

Europe's greenhouse gas emissions are falling fast, mainly because of the rapid spread of the wind turbines and solar panels that are replacing fossil fuels for electricity generation.

European Union (EU) data shows that **once countries adopt measures to reduce greenhouse gases (GHGs), they often exceed their targets**—and this finding is backed up by figures released in a statement by the United Nations Framework Convention on Climate Change (UNFCCC).

The Convention's statistics show that the **37 industrialized countries (plus the EU) that signed up in 1997 to the Kyoto Protocol**—the original international treaty on combating global warming—have **frequently exceeded their promised GHG cuts by a large margin.**

The UNFCCC statement says, **"This is a powerful demonstration that climate change agreements not only work, but can drive even higher ambition over time."** "The successful completion of the Kyoto Protocol's first commitment period can serve as a beacon for governments as they work towards a new, universal climate change agreement in Paris, in December this year."

In the EU, the leading countries for making savings are Germany, Sweden, France, Italy and Spain, which account for two-thirds of the total savings on the continent. But most of the 28 countries in the bloc are also making progress towards the EU's own target of producing 20 percent of all its energy needs from renewables by 2020. It has already reached 15 percent.

Once countries adopt measures to reduce greenhouse gases (GHGs), they often exceed their targets. This is a powerful demonstration that climate change agreements not only work, but can drive even higher ambition over time.

Part of the EU plan to prevent any of the 28 member states backsliding on agreed targets to reduce GHGs is to measure every two years the effect of various policies to achieve the reductions. Measuring the progress towards targets is vital for mutual trust between nations in the run-up to the Paris climate talks. It also gives politicians confidence that they can make pledges they can keep.

Two-thirds of the savings came from the widespread introduction of wind and solar power. Renewables used for heating and cooling achieved 31 percent of the savings and transport 5 percent. Most transport renewables came from the use of bio-fuels instead of petrol and diesel.

Across Europe, emissions vary widely from country to country, with Germany having the highest and Malta the lowest. Germany also had the greatest absolute reduction of emissions—a total drop of 23 percent on 1990 levels by 2012.

The highest emissions per capita were in Luxembourg (20 tons of carbon dioxide per person), followed by Estonia (12.7), the Czech Republic (10.2), Germany (9.8) and the Netherlands (9.7).

http://ecowatch.com/2015/08/12/wind-solar-replace-fossil-fuels/?utm_content=bufferc5881&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer

Expo Milano 2015

Amazing display of powerful ideas by various nations for improving sustainability in food

The Universal Exhibition **Expo Milano 2015** that Milan, Italy, is hosting from **May 1 to October 31, 2015** shows that the **ever-growing global population can be fed if only we cut down on waste and be more innovative.** By following the theme **'Feeding the Planet, Energy for Life,'** 145 countries will show their commitment to creating sustainable ways of producing and delivering food across the globe while guaranteeing the safeguard of the planet.

The aim of the six-month-long exposition is to **"create a unique experience for visitors, as protagonists, increasing their awareness of and seeking their participation in the drive for: the right to food that is healthy, safe and sufficient; the environmental, social and economic sustainability of the food chain; and the preservation of taste and of food culture."**

The message is repeated in the remaining three silo rooms, which are stocked with dried apple, salt and water respectively. As stocks decline, the floor of silo lowers in a physical reminder that **food and water resources are not unlimited.**

The presentation exemplifies Switzerland's ideas on **how to be sustainable, responsible and innovative** and perfectly fits the Expo's theme **"Feeding the Planet, Energy for Life"**. It also drives home the point that with the global population

The **Swiss Pavilion** consists of a room that looks just like a poorly stocked silo. The top shelves are empty while ready-mixed coffee packets line the lower levels. A member of the pavilion's staff tells us we are free to take home the coffee as much as we like. "But please bear in mind that we filled four floors with coffee for the entire Expo period. We're already down to the third floor and rapidly approaching the second. I don't know if the coffee will last until the Expo ends in October," she says.

Korea Pavilion

predicted by rise from 7 billion today to 9 billion in 2050, it is **essential that we stop mindless and selfish consumption right now.**

Pavilion Zero, where the **United Nations** highlights sustainable farming approaches and calls for knowledge sharing and increased public awareness of waste. Here the message is: **the world has a diverse range of food and food will be available to all if we cut waste and loss**, which is currently estimated at a whopping 25 per cent of global output.

South Korea suggests fermentation as a way of filling the gap. Inside the pavilion, visitors become acquainted with "Hansik", the local word for Korean food. Video presentations, robots and kimchi jars are fully exploited to stress **that fermentation will be the answer to the world's hunger. Fermentation ensures less food loss and waste.**

Japan tells the world how **respecting the wisdom of nature** can help. Highlighting harmonious diversity, Japanese dishes change according to the season and food-making techniques including fermentation are applied. The message here is subtle but no less clear: **all are free to choose what to eat but they should also learn how to share with others.**

Japan Pavilion

The **United Kingdom** pavilion highlights the vital role played by bees in the global ecosystem through an innovative architectural design. Stepping out of the food loop, its pavilion features the steely design of a globe inside a beehive. At night, 1,000 LED lights are switched on to turn it into a real beehive. The aim is to underline that **bees pollinate more than half of the world's main food crops yet their numbers are being decimated annually as a result of the increased use of pesticides.**

UK Pavilion

Further seeds of a good idea are sowed at the **Israel** Pavilion. The visitors learn about the lives of three generations of **farmers whose sustainable and innovative approach has turned an arid land into one that's known for its bountiful fruits and vegetables.** Thanks to a **vertical field,** each part of which is nurtured through a drip irrigation system, visitors travel through time to learn how a desert gave birth to the cherry tomato and how the country became a major exporter of agricultural products. Notably, Israel is now developing a rice breed that will rely less on water.

http://www.ibtimes.co.uk/expo-milano-2015-5-great-ideas-create-sustainable-planet-1498743

http://www.nationmultimedia.com/life/Ideas-for-a-sustainable-world-30265778.html

How Adidas is Pioneering Sustainability for Sports

Adidas is among the most admired companies in the world, especially when it comes to sustainability. In January, Corporate Knights, "the magazine for clean capitalism," ranked the sporting goods and apparel giant No. 3 on its list of the "Global 100 Most Sustainable Corporations." In fact, Adidas was the only textile, apparel or luxury good company that made the list.

The approach that makes this company tick so consistently when it comes to sustainability, despite the financial pressures of the athletic apparel marketplace is **open source innovation.**

According to **Alexis Haass, director of sustainability** at the company's global headquarters in Herzogenaurach, Germany, open source is comprised of crowd sourcing ideas from four pillars within and outside of Adidas":

- **Creators** — including athletes and artists.
- **Communities** — individuals and groups of people who want to work with the company. For example, the Brazuca soccer ball, official ball of the 2014 FIFA World Cup in Brazil, was named by Brazilians themselves.
- **Customers** — which results in consistent and open communication and feedback.
- **Partners** — collaboration with other companies, non-profits and NGOs. BASF, a leader in the sustainable chemistry and green sports worlds, worked with Adidas to create a revolutionary new cushioning material, BOOST, that provides the highest energy return in the industry.

One of Adidas' open source innovation partners sits squarely in the sustainability world: **Parley for the Oceans**, which has a primary goal of getting plastic out of the ocean.

A key practical effect of the collaboration, which launched in April, will be the integration of materials made from ocean plastic waste into Adidas products in 2016 and beyond.

In fact, Adidas created a first: **A shoe upper made entirely of yarns and filaments reclaimed and recycled from ocean waste and illegal deep-sea gillnets.**

"Consumers make decisions based on the brands they prefer. Sustainability and innovation are two of the key criteria of selection," Haass said. "Successful companies in the future will be those where sustainability is well integrated in terms of core values, operations as well as consumer acceptance."

Adidas is already walking the green walk in terms of its operational sustainability. About **96 percent of the company's footwear suppliers are ISO (international quality standard) certified. Building performance, CO2 emissions and water usage** are all becoming more efficient.

Not Environment Alone

Sustainability also does not only mean environment at Adidas. The issue is looked at through a wider lens of **ESG (environmental, social and governmental)** issues.

In the run up to the Brazil 2014 World Cup, Adidas focused on the social end of ESG by working with local organizers on a number of grassroots programs, including the **"Ginga Social"** initiative. This sports-based initiative uses coaches to teach values and life skills to young people ages 7 to 17 in favelas (low-income, high-crime neighborhoods) in Rio de Janeiro, São Paulo and three other host cities.

http://www.greenbiz.com/article/how-adidas-pioneering-open-source-sustainability-sports

Ways to Boost Finance for Sustainable Energy

A new United Nations-backed report ***'Scaling Up Finance for Sustainable Energy Investments'*** launched at the Third International Conference on Financing for Development in Addis Ababa details concrete ways to boost **crucial investment in sustainable energy by some $120 billion a year.**

According to the latest estimates, investment from both the public and private sectors will need to triple to more than $1 trillion per year to meet ambitious goal of sustainable energy for all by 2030.

"A trillion-dollar investment need is also a trillion-dollar investment opportunity," said Kandeh Yumkella, the Secretary General's Special Representative for Sustainable Energy for All and CEO of the SE4All initiative.

"This report shows in detail how we can start driving that investment in really practical ways, by mobilizing new sources of finance and encouraging investors by helping them to manage their risks."

The report identifies four broad **'investment themes'** where action could help drive increased investment: **developing the Green Bond market; using the de-risking instruments of the development finance institutions to mobilize private capital; exploring insurance products that focus on removing specific risks; and developing aggregation structures that focus on bundling and pooling approaches for small-scale projects.**

Speaking at which the report was launched, **Secretary-General Ban Ki-moon called sustainable energy "the golden thread that links economic growth, increased social equity and a healthy environment."**

He went on to note that transition of global energy systems is clearly a challenge, but also an unprecedented opportunity, citing a number of examples, including in Ethiopia, one of many African countries currently developing action agendas and investment prospectuses to ensure sustainable energy for all.

Strong leadership was also shown during the recent launch of the West African Energy Leaders Group in Côte d'Ivoire, he said.

Mr. Ban also recalled that the second UN Sustainable Energy for All Forum in May showed that commitments to date make halving of energy poverty realizable by 2030, through initiatives like the European Union's ElectriFI, the United States' Power Africa, and increased public investments.

http://www.un.org/apps/news/story.asp?NewsID=51404#.VdwT1fmqqko

Smarter Solutions for a Better Tomorrow

2nd Smart Cities India 2016 Expo

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Pragati Maidan, New Delhi

India's only dedicated exhibition on making cities SMARTER

With ₹98,000 crore (US$ 15 billion) approved by cabinet for development of 100 smart cities and rejuvenation of 500 others. The 2nd Smart Cities India 2016 expo is a great platform for all solution providers to exhibit at India's only dedicated exhibition on Smart Cities.

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- Clean energy / Smart grids
- Smart / green transportation
- Smart / Green buildings
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- Smart education / *Skilling India*
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- Disaster management
- Smart manufacturing / *Make in India*

Previous show highlights (2015 edition)

- 207 exhibition participants
- Over 40 countries participated
- 39 conferences session
- 241 speakers
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Praveen Singh
Mob: +91 9899 786 777 | Ph. +91-11-4279 5011
Email id: praveens@eigroup.in

Huge Gap in Demand and Supply Of Affordable Housing

Mr Arun Kashikar, head - R&D, Tata Housing Development Company Ltd, said the current scenario in the housing industry shows that there is huge supply and less demand in the premium/luxury housing sector. The existing supply will suffice for next 3-4 years depending on the vision for the category. However, for the economically weaker section or in the affordable housing sector, a huge gap exists between demand and supply of approximately 18.5 million units.

Addressing a conference Kashikar said the housing industry is growing in the affordable sector but developers are not focused in that area as margins are low. Moreover, if the project is not completed in time, it leads to loss. Most of the projects in India are getting delayed by 6 -7 months.

The primary reason for this is the fact that the construction industry is completely a labour dependent industry. And among the labourers employed 82% are unskilled while only 2.5% are trained engineers.

There is a shortage of labour which is increasing. In order to tackle this Tata Housing works in 2 areas – one, providing skills to unskilled labourers and bring them up the value chain which will make them skilled benefitting the industry as well as themselves and secondly, making the industry less dependent on human labour using mechanization or industrial construction so that the housing is not completely dependent on manual labour.

Labor Training

Tata Housing is working towards developing an ecosystem where labourers are trained to be more skilled and thus, generating employment by becoming entrepreneur who can work in small scale sector in the construction industry.

At every project site, a need assessment survey in that area is done and depending on that services of NGOs are used to locate people who are unemployed. These people are then trained and made employable. Secondly, the worker who is actually working on site is imparted with more skills as well.

Mostly, on-the-job training is given to the labourers as they can then learn as well as earn simultaneously. The categories of training have been standardized for different sectors and the workers are certified so that even if they move out they are employable.

To tackle attrition, which is huge, labor is provided with better facilities such as improved labour colony, high importance to health and safety needs.

Source: Commonfloor.com

Aggressive Policies Needed to Drive Sustainability in India - CII

Industry experts at a recent CII sustainability conference titled 'Responsible Growth: Towards a Sustainable Future' urges Government of India and the states to incentivize companies to adopt green solutions.

"It is important for India to grow the right way. We cannot grow like America or China. We have to use resources in the right manner and ensure that we give our citizens a level of wealth and development enjoyed by the developed world. That is the only way that India will assume its rightful place, without putting more pressure on the rest of the planet," opined **Sanjay Kirloskar,** chairman CII (Western Region) and chairman and managing director of Kirloskar Brothers Ltd.

He said "In India a lot of polluting industries are being allowed to come up in restricted areas. Those who rejoiced at the new government wonder whether the pendulum is swinging to the other extreme. A balance has to come. We need to grow as a nation while looking at our resources so that we do not consume too much and destroy too much."

M S Unnikrishnan, MD and chairman, Thermax Limited, said only policy can change the country and unless the government supports it, things will not move. "Government has to support via enabling policy initiatives. Incentives can be given by government for using renewables," he added.

Speaking about the potential of renewable energy, **Anirban Ghosh,** VP – sustainability, Mahindra and Mahindra, said: "The total renewable energy potential in the country is 895 GW which is remarkably well placed in our need for increased power. If all were to come from renewables, it would be fantastic. At least we can try to fulfill as much of the deficit from it as possible. But that will not happen unless we get rid of the negative impression we have about renewables. Renewable technology is now ready for adoption. And with time, it will only improve."

Pradeep Banerjee, chairman – CII WR environment for business sub-committee and executive director – supply chain, Hindustan Unilever Ltd, said, "Conventional wisdom have been built on a 3G model: sustainable growth, profitable growth and cognitive growth. Today, there is the need to add a fourth dimension: responsible growth. Along with economic value, we also have to create social value. In its absence, businesses will falter in the long term. Besides, there is clear business case for better social dimension. It reduces risk, lowers costs, gives higher returns and creates growth opportunities."

How India Can Save Indonesia's Forests by Cutting Palm Oil Use

India imports 15% of global palm oil coming mainly from Indonesia. Palm oil cultivation and expansion is one of the key reasons for depletion of rich forests in South East Asia. If edible oil companies in India can innovate by cutting prices palm oil import can be reduced over a period of time.

Guardian newspaper quoted Stefano Savi, global outreach and engagement director at the Roundtable on Sustainable Palm Oil (RSPO): "As the largest importer of palm oil, India can play a fundamental role in influencing a shift towards sustainable production."

A recent report in the paper noted that unlike the boycotts and consumer awareness in Europe and the US, interest in sustainably sourced palm oil in India is minimal, putting little pressure on the domestic market to shift to more sustainable sources.

There is no real 'burning platform' for companies to decide to move towards certification, especially for products aimed at the internal market. Yet Indian companies have the power to apply pressure on their major suppliers from Indonesia towards sustainability, says Nandikesh Sivalingam, a senior campaigner at Greenpeace India.

Because certified palm oil is priced higher consumers choose cheaper options. India could import 8.4 million tonnes of palm oil this year.

However, change is apparently on the horizon. "Certain companies have made commitments to sustainable palm oil, in particular fast-moving consumer goods multinationals," Philip Tapsall, director of sustainable business at WWF India told the paper. "We are starting to see these commitments extend to the Indian market." Global procurement policies of multinational companies which demand certified sustainable products are "definitely having an impact in driving change locally."

Augmenting Solar Power

Why India Should Soon Move to Solar Tower Technology

Photovoltaic plants cannot help India achieve its ambitious target of 100 GW from solar energy by 2022. Srilakshmi G of CStep suggests moving quickly to solar tower technology

India is one of the world's largest energy consumers (ranked third after China and USA) and Greenhouse Gas (GHG) emitters. It is dependent on conventional sources of energy generation which are depleting. The good news is that harnessing renewable energy (RE) sources has become a national priority. The main RE resource that can be readily tapped is solar energy, which is abundant. India is situated slightly above the Equator, with most parts receiving about 300 sunny days in a year.

From a policy perspective, the Jawaharlal Nehru National Solar Mission (JNNSM) - which was announced in 2010 - has played a huge role in setting targets to serve as a means towards harnessing this resource in the country. The primary objectiveof JNNSM is to reduce India's dependence on conventional sources of energy and move towards clean energy sources.

Recently, in early 2015, the JNNSM target was revised to a more ambitious one to achieve 100 GW of solar power by 2022. This proposed target of increasing the capacity fivefold in the next seven years is certainly a very aggressive one and definitely a step in the right direction.

Currently, India has 3.74 GW of grid-connected solar power out of which 94% is from photovoltaics (PV) and the remaining 6% is from Concentrated Solar Power (CSP) technologies. The reason for the high percentage from PV is because it lesser than the CSP system.

In India, most operational concentrated solar power (CSP) plants (amounting to a total of about 230 MW) use Parabolic Trough (PT) technology which is already well-established (from both technology and supply chain perspectives). This is mainly due to the high level of maturity that this technology has already attained. These plants are however limited to a 50 MW capacity level. While Linear Fresnel, like PT, is also a mature CSP technology (with high installed capacity in India). Dish technology is generally used for off-grid thermal, stand-alone applications.

It is evident that the share of CSP in the current solar installed capacity is very small. This can be changed with the advent of Solar Tower (ST) - the other main CSP technology - which has been gaining a lot of importance worldwide.

Solar Tower Technology - Advantages and Challenges

A Solar Tower (ST) or Central Receiver System uses an array of heliostats or mirrors which reflect solar radiation onto a receiver which is placed at the top of a tower. These heliostats have a dual axis control, thereby tracking the sun's rays during the day in order to reflect maximum amount of radiation onto the receiver. The Heat Transfer Fluid (HTF) in the receiver gets heated up due to solar radiation incident on it and this thermal energy is transferred to the working fluid of a power block, thereby generating electricity.

Grid-connected power needs to be uninterrupted, stable and dispatchable at the utility (100-200 MW) scale. This kind of power may be difficult for PV plants to

generate because they can provide electricity only when the sun is shining. Hence they are not suited for very high capacity plants. Also, the cost of available battery storage options is much higher as compared to thermal storage systems, used by CSP plants therefore making PV plants financially unfeasible. PV technology can certainly be used at times when there is shortage of power but not when it comes to catering to the peak demand load (which usually occurs late in the evening/night when the sun isn't shining).

Ivanpah_Solar_Power_Facility

CSP technologies, on the other hand, once augmented with thermal energy storage, can provide continuous power which is the prime requirement for grid-connected power. This is especially true for ST technology since higher temperatures are achieved, consequently increasing the thermal storage energy per unit volume of the storage block. PV technology becomes more expensive than a CSP system when thermal storage is incorporated into the plant to attain a sustained base load. **CSP should be given more attention in the nationally planned solar parks as the investment for evacuation infrastructure is high.**

This highly priced infrastructure remains idle during the night if PV technology is employed, whereas, it continues to be utilised if CSP with thermal storage is used.

Other advantages of ST technology (backed by technical studies) include **higher solar to electric conversion efficiency than that of any other solar power generating system.** The concentration ratios attained and plant capacity utilisation factors (CUFs) are also larger as compared to other solar technologies. Moreover, in ST technology, since the same fluid (molten salt) can be used for heat transfer as well as storage, it eliminates the need for an extra heat exchanger which is required (between the solar field and the storage block) in a PT plant.

However, like any other technology, ST has some disadvantages as well. For high capacity plants having tower heights of the order of 150 meters, maintenance of the receiver and pumping of the HTF to such heights becomes difficult. Fora heliostat field with few thousands of mirrors, cleaning and keeping them dust-free is a challenge. Also, since molten salt has a high freezing temperature of about 238°C, it needs to be drained out of the receiver pipes when the plant is not in operation.

From an overall perspective, a trade-off between the challenges and opportunities will have to be considered on a case by case basis.

GlobalStatus and India'sExperience

The largest solar power facility (392 MW) in the world, the Ivanpah Solar Electricity Generating Station (ISEGS) in the Mohave Desert of California, uses this technology. ST technology has developed and gained considerable momentum over the last two decades. It has reached a stage of experience such that it is now implementable.

Currently, there are many operational plants (which also use storage) spread out all over the world. The Planta Solar 10 (PS 10), Planta Solar 20 (PS 20) and Gema solar plants in Spain are few of the first plants to have started commercial power generation in 2007, 2009 and 2011 respectively. There are many utility-scale plants that are under construction (Rice Solar, Crescent Dunes, Khi Solar One etc.) as well. Spain and USA are pioneers in the design, development and execution of this technology.

In India, apart from a couple of small-scale demonstration plants, there are no plants in the pipeline. ACME in India partnered with eSolar, USA to develop a 2.5 MW tower plant in Bikaner, Rajasthan. The plant started production in 2011. SunBorne Energy is setting up a 1 MW solar power tower system with the support of MNRE at the National Institute of Solar Energy (NISE), Gurgaon.

The primary aim of this demonstration plant is to devise a method to optimise the heliostat field (using Titan tracker heliostats) using a volumetric air receiver while simultaneously having a provision for thermal storage. This plant is planned to be set-up using regional indigenous resources for most of the system components.

A significant amount of R&D is also being carried out on this technology in various academic institutions of the country, which is a promising sign.

Way Forward

Even though India currently has limited experience, this technology has the potential to take-off in a very major way. While challenges in terms of lack of component availability cannot be ignored, measures to work around these limitations need to be adopted.

With the 'Make in India' campaign kicking off, India could also have a head start in designing and manufacturing various ST components since there are very few market players worldwide. Indigenisation prospects are favourable for this technology due to India's huge potential manufacturing base. In addition, skills required for the development of receiver technology, heliostats and storage can be honed to meet the needs of this technology.

Organisations like CSTEP, as part of the Solar Energy Research Institute for India and the US (SERIIUS) program, are in the process of developing computational tools to model this technology in order to help with pre-feasibility analysis of these plants. The tool also aims to make predictions on the Levelized Cost of Electricity (LCOE), thereby guiding policy makers and investors to make informed decisions. Apart from this, existing tools developed by National Renewable Energy Laboratory like the Solar Advisory Model (SAM), are also available for developers who want to start investing in this technology.

India has about 0.4 million km2 of wastelands available. Studies show that for existing ST plants with grid-connected power the average land requirement per MW is about 3.8 ha (0.038 km2). Even if 1% of the available wasteland in India is utilised, the potential for ST technology is around 105 GW. Therefore, the availability of land should not be a hurdle in the way of developing this technology for commercial use.

Considering a scenario which allows for an increase in the present trend, if around 10% of the target is tapped from solar thermal technologies, the share of CSP will be around 10 GW. Based on present maturity levels of ST technology, it is assumed that it can contribute up to 30% of the CSP share, resulting in approximately 3 GW of installed capacity by 2022.

It is quite evident that this technology might have an important role to play in paving the way for a cleaner and brighter future for India.

Srilakshmi G is a Research Engineer at the Center for Study of Science, Technology and Policy (CSTEP), Bengaluru.

Dads with Daughters

Spend More On CSR & are Nicer to Employees

A recent report in finds that some of America's largest corporations spend an additional $59.5M per year on corporate social responsibility (CSR), and the researchers claim that this is because they are run by CEOs with daughters. It appears that whenever a business leader has a daughter, the company is "much nicer" to employees.

The research is the work of finance professor Henrik Cronqvist of the University of Miami and Frank Yu of the China-Europe International Business School (CEIBS), and studied 379 CEOs of the S+P 500 index who had among them a total of 943 children, 48.7% of whom were girls (comparable to the statistical standard in the general population). The study focused on the years 1992-2012; 3.7% of the CEOs were female.

The study discovered that having a female child impacts the ways that CEOs manage their companies, and that the effect is amplified if the daughter is the CEO's first-born. **Hiring a new CEO with a daughter is said to lead to increased CSR-related activity.** Moreover, companies with good CSR track records are more likely to hire new CEOs with daughters.

According to the study, CEOs with daughters typically show a stronger attachment to society in general, as well as increased empathy for the well-being of stakeholders, spending approximately 13.4% of the firm's net income on CSR-related matters. **It also discovered that male CEOs with female children are almost 33% more likely to make CSR-related decisions similar to those made by female CEOs.**

The researchers noted that CEOs with sons do not exhibit the same tendencies at work as those with daughters. The differences were most notable in the ways in which companies treated minorities, women and the disabled, as well as the way in which companies viewed society-at-large – for example, how stakeholders were treated – whether or not the stakeholders were also shareholders in the company. They also saw that firms that go from having a CEO with a daughter to one that doesn't are subject to noticeable negative changes in these types of CSR-related activities.

Put another way, having daughters seemed to make male CEOs more nurturing and more protective – more than their female counterparts. The implication is that children can have as much effect on parents' behavior and attitudes as parents have on their children.

As Fred Paglia, former (pre-Heinz) president of foodservice and U.S. growth channels at Kraft Foods told the researchers: "My girls are 14 and 12, and to be genuine with you, I wake up every day and look into their eyes before I leave for work and try to make the path a little easier for them. What father wouldn't want to do that?"

'Shaped By Their Daughters: Executives, Female Socialization, and Corporate Social Responsibility'

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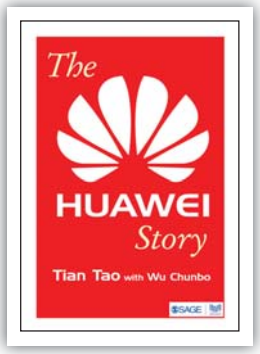

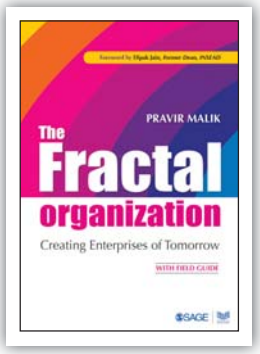

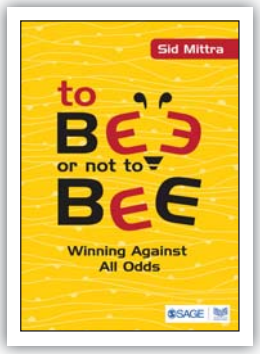

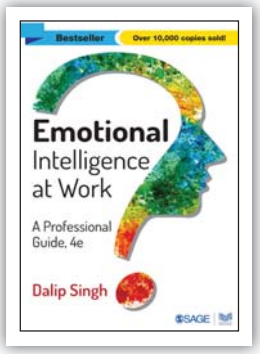

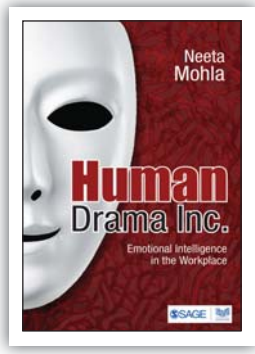

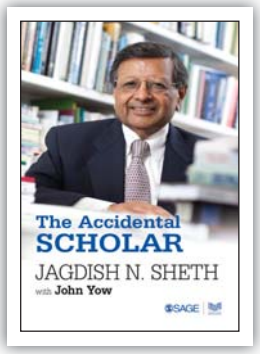

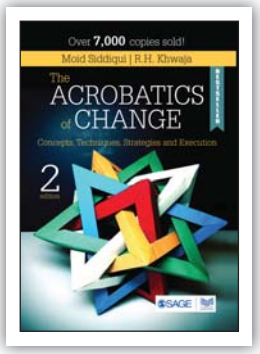

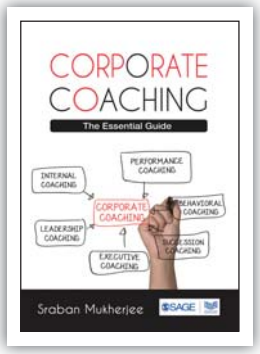

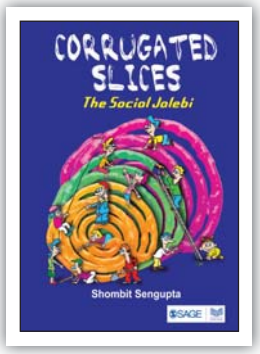

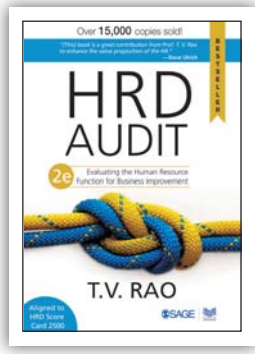

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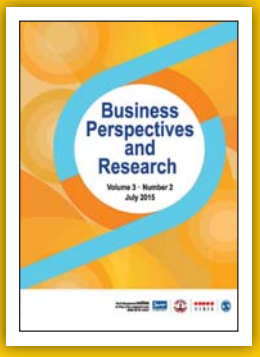

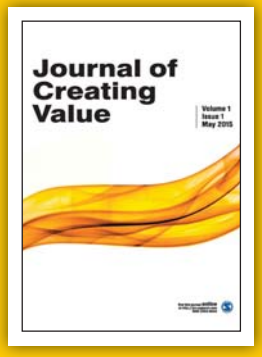

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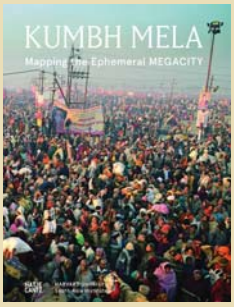
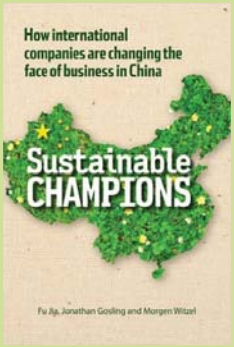


Kumbh Mela: Mapping the Ephemeral Mega City

By Rahul Mehrotra & Felipe Vera, Niyogi Books, August 2015

Many people are not familiar with Kumbh Mela, and yet it is the largest celebration on earth: depending on the positions of Jupiter, the sun and the moon, Hindus travel to certain places along holy rivers, the Ganges for example, to bathe and cleanse themselves of sin. With a 2013 attendance of approximately 34 million, the triennial pilgrimage requires that the communities hosting the gatherings create functioning temporary structures to transport, house and feed enormous crowds of people.

In 2013, a team from Harvard University monitored the large-scale event from its preparation through to the actual celebration, investigating and documenting the prototypes for flexible urban planning and offering organizers advice on issues around environmental protection. This substantial hardcover presents their comprehensive research findings along with city maps, aerial images and photographs of this most fascinating feat of urban planning.



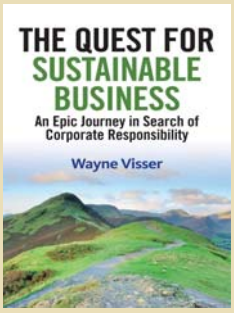
Sustainable Champions: How International Companies are Changing the Face of Business in China

By Fu Jia, Jonathan Gosling and Morgen Witzel, Greenleaf Publishing, September 2015

In the face of strong competitive pressure and a dynamic market, multinational companies in China are forced to innovate with extraordinary pace and inventiveness. Environmental sustainability is a vital benchmark, and is a key driver for the best companies in each sector - many of them allied with the WWF Climate Savers programme.

Sustainable Champions shows how nine leading multinational companies - including Nestlé, HP, TetraPak and Sony - are dealing with environmental, supply chain and ethical challenges in China. The book illuminates some of their transformative practices, and the impact this is having on business in China and beyond. The concluding cross-case analysis of supply chain and environmental challenges faced by leading international firms presents key lessons for business and for sustainability champions.

Sustainable Champions: How International Companies are Changing the Face of Business in China is essential reading for researchers and course leaders seeking on-the-ground examples of local environmental challenges, and any company doing business in one of the world's fastest-growing economies.



The Quest or Sustainable Business: An Epic Journey in Search of Corporate Responsibility

By Wayne Visser

In January 2010, author, academic and social entrepreneur Dr Wayne Visser set off on a nine-month, 20-country "quest" to talk to entrepreneurs, business leaders and innovators and learn about how companies in all parts of the world can and are helping to tackle the world's most pressing social and environmental problems. His aim was to explore the many varieties of global approaches to sustainable business practices first-hand and to share some of the most innovative global examples.

The result is this treasure trove of a book, full of stories, ideas, links to more than 100 video interviews, best practices and tools for making sustainable business work in a myriad of different contexts, cultures and settings. Besides sharing insights from his 2010 "CSR Quest World Tour", the author captures his professional experiences and the evolution of sustainable business over the past 20 years.

The path begins in Africa and winds its way through Asia, North America, Europe, Australasia and Latin America. The author shares what he has learned in encounters with mega-corporations and small farmers, and conversations with CEOs and social entrepreneurs. There are facts and figures about world trends, and interviews with thought leaders and activists. This is a tale that consciously weaves the personal and the professional, mixing anecdotes and case studies. It looks outwards and reflects inwards, and is both autobiography and the life story of a global movement.

Development in India: Micro and Macro Perspectives (India Studies in Business and Economics)

By S. Mahendra Dev & P G Babu, Springer, July 2015

This book examines various facets of the development process such as aid, poverty, caste networks, corruption, and judicial activism. It explores the efficiency of and distributional issues related to agriculture, and the roles of macro models and financial markets, with a special emphasis on bubbles, liquidity traps and experimental markets. The importance of finite changes in trade and development, as well as that of information technology and issues related to energy and ecosystems, including sustainability and vulnerability, are analyzed.

The book presents papers that were commissioned for the Silver Jubilee celebrations at the Indira Gandhi Institute of Development Research (IGIDR). The individual contributions address related development problems, ensuring a homogeneous reading experience and providing a thorough synthesis and understanding of the authors' research areas. The reader will be introduced to various aspects of development thought by leading and contemporary researchers. As such, the book represents an important addition to the literature on economic thought by leading scholars, and will be of great value to graduate students and researchers in the fields of development studies, political economy and economics in general.

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http://www.infoxg.com/smart-city-landscapes2015.php?event_name=Smart%20City%20Landscapes%202015

Advanced Low Cost Hi-Tech Automation
11th & 12th September 2015, Hotel Ellaa, Hyderabad

ASIA PACIFIC HRM CONGRESS - 14th Edition
11th & 12th September, 2015, Vivanta by Taj, Yeshwantpur, Bangalore

4th National Conclave for Laboratories
India Laboratory Infrastructure: Fostering Economic Growth & Sustainable Development
14-15 September 2015, India Habitat Centre, New Delhi

Future of Automotive Design
9 October 2015, Hotel Le Royal Meridien, Chennai
http://www.tntdpc.com/FutureofAutomotiveDesign/

NASSCOM Product Conclave
13th – 15th October 2015 | Bangalore
NASSCOM Product Conclave

CII - Institute of Logistics
2 days conference on “Building Warehousing Competitiveness”
19-20 November 2015, Palladium, Mumbai
syam.sundar@cii.in

14th Edition of International Conference on Cost Congress-2015
23 & 24 November 2015, Taj Mahal Palace, Mumbai
tcm@cii.in

B2B Meetings with International Trade Delegations @ Global SME Business Summit 2015
7-8 Dec. 2015, India Habitat Centre, Lodi Road, New Delhi
http://www.cii.in

3rd International Conference and Exhibition on Energy Storage and Microgrids in India
08-09 December, 2015
Pre-conference workshop on 07 December, 2015 at India Habitat Centre, New Delhi
www.esiexpo.in

FICCI Indian Delegation to Soccerex Global Convention (3 Day Event)
Manchester, UK, Monday, September 07, 2015
Contact: Amit Mantri, amit.mantri@ficci.com

Global Investors Meet, Tamil Nadu (2 Day Event)
Wednesday, September 09, 2015, Chennai
Contact: Mr. Ruban Hobday, ruban.hobday@__cci.com

India Pavilion During 19th Viet Food & Pro Pack 2015 (4 Day Event)
Wednesday, September 09, 2015, Ho Chi Minh City, Vietnam
Contact: Poonam Patodia, poonam.patodia@ficci.com

BIG 5 Construct India 2015 (3 Day Event)
Thursday, September 10, 2015, Mumbai

The India Nigeria Business Forum (2 Day Event)
Thursday, September 10, 2015, Mumbai
Contact: Sneh Patel, sneh.patel@ficci.com

FICCI 8th Global Skill Summit: Skill India: Build India
Thursday, September 10, 2015, New Delhi
Contact: Deepak Boora, deepak.boora@ficci.com

Workshop on the NSQF Implementation
Friday, September 11, 2015, FICCI, New Delhi
Contact: Deepak Boora, deepak.boora@ficci.com

FICCI Trade & Investment Delegation to the USA & Mexico (7 Day Event)
Sunday, September 13, 2015
Mexico City, Guadalajara, Houston, South Carolina, Washington DC
Contact: Malvika Kareer, malvika.kareer@ficci.com

Annaporna 2015 (3 Day Event)
Monday, September 14, 2015, Mumbai

Indian Conference on Life Cycle Management (ILCM) 2015 (2 Day Event)
Monday, September 14, 2015, FICCI, New Delhi
Contact: Sohini, sohini.gupta@ficci.com

Estimation of Measurement Uncertainty in Test and Calibration (369 Day Event)
Monday, September 14, 2015, Mumbai
Contact: Mr. Mritunjay Kumar, mritunjay.kumar@ficci.com

FICCI Infrastructure Delegation to United States and Canada (8 Day Event)
Wednesday, September 16, 2015
Ottawa, Toronto, Washington DC, New York
Contact: Malvika Kareer, malvika.kareer@ficci.com

Vastra 2015 (3 Day Event)
Monday, September 28, 2015, Jaipur

India Pavilion at AGROPRODMASH 2015 (5 Day Event)
Monday, October 05, 2015, Moscow, Russia
Contact: Ms. Santosh Nautiyal, santosh.nautiyal@ficci.com

Advantage Health Care - India 2015 (3 Day Event)
Monday, October 05, 2015, New Delhi

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Uma@managementnext.com 080 - 41126557