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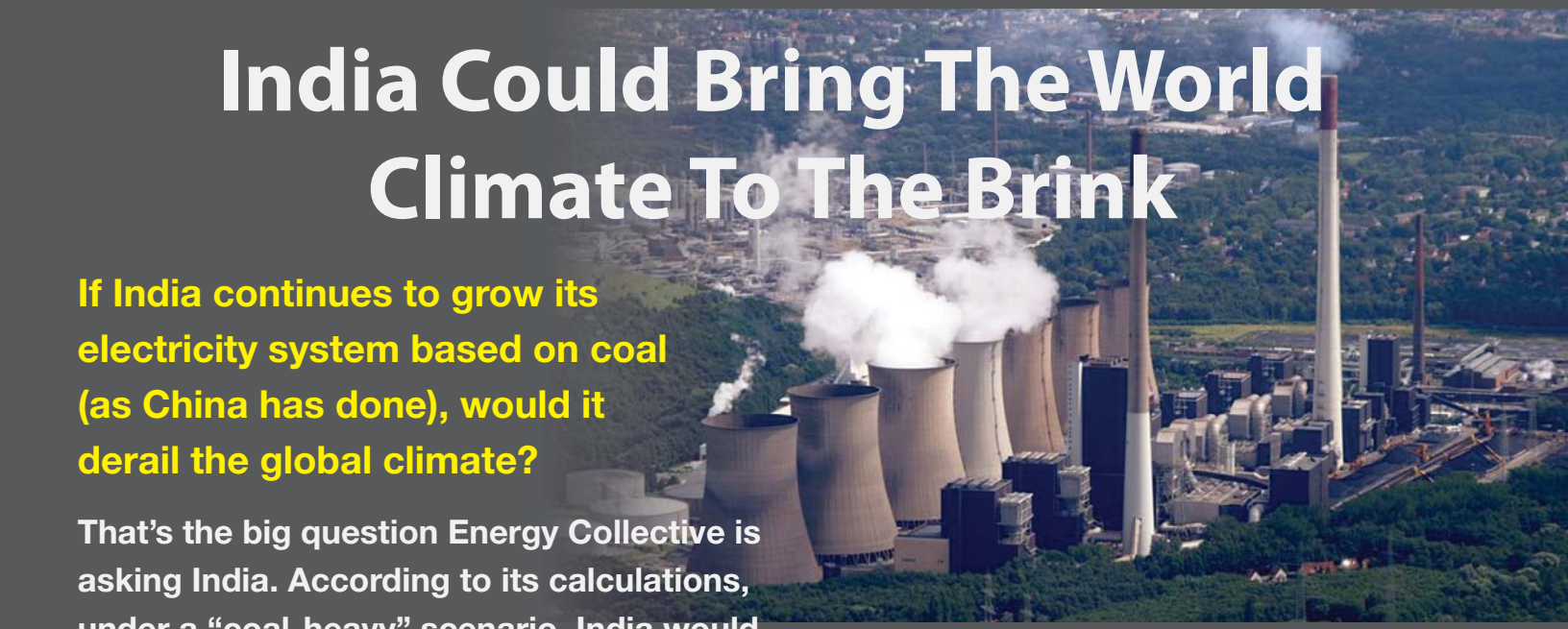
India Could Bring The World Climate To The Brink



If India continues to grow its electricity system based on coal (as China has done), would it derail the global climate?

That's the big question Energy Collective is asking India. According to its calculations, under a "coal-heavy" scenario, India would need to increase its coal-fired power generation capacity from the 156 GW in early 2015 to 677 GW in 2035. What would be the CO_2 implications of such a strategy?

But there's a catch. The world is said to have only 58% of the carbon space available to keep climate change to less than 2 degrees. India's share of the carbon space should be high, based on its large population and low historical emissions.

The author fears an aggressive coal-strategy would break the bank, with potentially terrible consequences to the world and especially to highly vulnerable countries in Asia.

Justice vs Survival

First, let's look at the carbon budget that is available to us as mankind. If we want to have a reasonable (2/3rd) chance of limiting global warming to 2 degrees (which would already have serious implications, but might not set in

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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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motion self-reinforcing effects), then our global carbon budget is 1,000 gigatons of CO_2 equivalent. This is the total amount of greenhouse gases we can emit into our atmosphere starting at beginning of industrialization in the late 19th century, when we first burned large amounts of fossil fuels.

Until today, we have already emitted 589 gt of CO_2. That leaves us with 421 as our remaining global carbon budget (refer). At the current rate, we will have exhausted this sometime in the year 2039.

Now, let us assume that India is historically unburdened and has not emitted anything yet and let us assume that it is entitled to 1/6th of the global carbon budget because it has 1/6th of the world's population. Then, India's total carbon budget would be 167 gt of CO_2.

Another way of looking at it is to take only the remaining budget into account (if you prioritize survival over justice). One could take the 421 and divide it by 6 to adjust it for India's population. That would come to 70 gt of CO_2. To take into account historical emissions (fact is, that countries like the US, Germany or Japan have already exceeded their budgets), one could add, say, 50% to that. So India's budget would be 105 gt of CO_2. Thus, taking into account both India's population and historical justice, the carbon budget India has is limited to 105-167 gt CO_2.

India's Power Minister, Piyush Goyal, has made it clear on a number of occasions that India plans to significantly ramp up its coal-fired power plant capacity in addition to the renewables. It needs to, he argues, in order to generate the vast amounts of power the country needs.

So, India has a tough choice to make – focus only on its national interest or proactively cut its emissions significantly by better energy mix.

http://theenergycollective.com/tobias-engelmeier/2209501/could-india-s-coal-plans-derail-global-climate

Smart Cities India 2015

Exhibition and Conference

20-22 May 2015
Pragati Maidan, New Delhi

Some elements identified for Smart Cities:

- USD 1 trillion to be spent on infrastructure between 2012-17; half of which to come from the private sector
- India to emerge as the world's 3rd largest construction market by 2020
- The Government of India has allocated US$ 6.1 billion to build 8,500 KMs of new roads in FY 2014-15
- India plans to build 200 low-cost airports in the next 20 years to connect tier-II and tier-III cities
- The Ministry of Human Resource Development plans 1,000 private universities for producing trained manpower to meet the services and industry requirements

843 million

people will be living in Indian cities by 2050

100 new cities

will be developed by Government of India, with plans to transform satellite towns and existing cities

USD 1.2 billion

allocated by the government during FY 2014-15 for smart cities to improve the quality of life for Indian citizens

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How Swedish Brands Cut Indian Textile's Eco-Impact

Sustainable Water Resources (SWAR), suppliers to the Swedish retail brands Indiska, KappAhl and Lindex have reduced their environmental impact and improved capacity through training on resource efficiency at a textile factory in Noida, UP. The factory has since reinvested its savings in new technology which ensures efficient use of natural resources.

The SWAR project is a cooperation between the Swedish brands and their Indian suppliers, the Stockholm International Water Institute (SIWI), Sida, and India-based consultancy cKinetics. SWAR was co-financed by the brands and Sida, in a public-private partnership that linked business and international development goals.

More than 40 factories participated in the project. **The project has contributed to saving 284 million liters of water and 402 tons of chemicals annually.** The factories were also able to save an average of three per cent of their energy cost and three per cent of their operational costs. The project trained more than 13,000 factory workers and managers in the past two years.

The Indian textile industry contributes three per cent to India's GDP and employs more than 45 million people. The industry is one of the largest industrial water polluters in India, and is facing serious growth limitations due to increasing freshwater shortage.

SWAR has inspired SIWI, Sida, the piloting brands and an additional 16 Swedish fashion brands to catalyse a shift toward sustainable production and continuous learning in major production hubs in Asia and Africa.

Started in 2015, the project is scaling up to include several Indian states and four other countries in the world. It involves more than 120 suppliers globally and is a part of the project Sweden Textile Water Initiative, STWI.

http://www.siwi.org/news/swar-success-in-india/

New Tool Helps Find Water Quality in India

The new web platform offers a comprehensive, publicly available online tool to evaluate India's water risks. The tool is a result of collaboration with organizations including **BASF, Nestlé, PepsiCo, World Resources Institute** and others. The tool can help companies, government agencies and other water users identify their most pressing challenges and carefully target water-risk management efforts.

The tool illustrates the depth and breadth of India's water-related challenges. With 54 percent of India's total area facing high to extremely high stress, almost 600 million people are at higher risk of surface-water supply disruptions.

The extremely high stress area in Northwest India - the states of Punjab and Haryana alone produce 50 percent of the national government's rice supply and 85 percent of its wheat stocks. Both crops are highly water intensive.

The IWT 2.0 measures water quality with an Indian-government standard called Bureau of Indian Standards (BIS) limits. Surface and groundwater are both below par in many areas.

Tools such as the India Water Tool may be only a first step in a long process of risk reduction and mitigation, but they are an essential one. Only with ongoing efforts to improve data transparency and accessibility may India advance toward a sustainable water future.

http://www.wri.org/blog/2015/02/3-maps-explain-india%E2%80%99s-growing-water-risks

Now Buy Green Power Online

REConnect Energy Solutions, a Bengaluru-based renewable energy consultancy and sourcing firm, launched an online marketplace for power consumers and generators to buy and sell green electricity a few weeks ago. The marketplace is called clickpower.in.

The marketplace enables open access to customers to explore options to buy green electricity from various energy generators by monitoring real-time deals. "In the renewable energy sector especially, buying power through open access, has been happening through brokers and other intermediaries. This platform is an attempt to organize the sector, while keeping transactions from generators and buyers transparent," Vishal Pandya told ***The Economic Times.*** Vishal started REConnect five years back with Vibhav Nuwal.

REConnect Energy is a trading venture in the area of Renewable Energy Certificate (REC)/ Renewable Purchase Obligation (RPO), Energy Portfolio Management & Wind Forecasting and Scheduling. **With 36% market share and more than 400 projects over 16 states amounting to 4 GW in renewable energy, it is the largest REC trading company in India.** The company says it has a "the most transparent bidding process which helps clients in taking informed decisions."

ReConnect Energy has taken upon itself the mandate of promoting sustainable green energy in India. "To ease out the complex nature of bilateral power trade in India, we have built an online trading platform that facilitates RE bilateral transactions, with major focus on efficiency, information, transparency, customization and security," a company note said.

www.clickpower.in and www.reconnectenergy.com

Big Benefits of Online Trading

Vishal Pandya, *Director, REConnect Energy, shares his thoughts on the current scenario about online green power trading in India, with* **SustainabilityNext**

Founders: Vaibhav Nuwal and Vishal Pandya

What's the size of green power market today and how much of that is traded?

Of 30 GW of renewable energy (RE) capacity installed so far, about 5 to 5.5 GW of RE is supplying power under open-access/captive transactions. Most of these have been handled through either local brokers or directly between a generator and a consumer. There is no organized marketplace available at the moment. Now, while the country is aiming to achieve 175 GW of total installed capacity in next 6-8 years, and the growing trend among the generators is to opt for direct contract with bulk consumers, **we can expect green power market in India to reach scale of 30-40 GW which would also include roof-top solar market.**

What will be the saving for utilities/ consumer by going online – away from brokerages?

The marketplace is expected to bring up scale and faster execution and hence lower transaction cost for buyers and sellers to begin with. This is where a generator can gain significantly. Further, **with increased competition, consumers can expect better tariffs than what otherwise some broker would be able to get only from few limited sources.**

What are the global best practices in online trading of green power, which India needs to adopt/adapt?

So far, clickpower.in is a discovery platform for over the counter contracts (OTC) market. The transactions happen only after face-to-face meetings with counter parties. If we can add up features like payment security and assured off-take through a large scale aggregation, it would bring clickpower.in in comparison with likes of alibaba.com where B2B transactions are carried out through a secure online settlement system.

Solar Power for IPL in Bengaluru

The Indian Premier League in Bengaluru will be different. The lights will be solar-powered, making the city's Chinnaswamy Stadium the world's only solar-powered cricket ground.

The Karnataka State Cricket Association (KSCA) commissioned a 400-KW solar plant to power the entire stadium, except for the high-intensity floodlights, before the IPL season commences on April 8, 2015. Next year, the plan is to cover even the floodlights.

"We are aiming to make this a green stadium," KSCA honorary secretary Brijesh Patel told media. "It makes economic sense for us to do this, and the additional power we generate will be offloaded to the grid."

The ₹4.5 crore project, commissioned in February and inspired by Germany's fully solar-powered Freiburg football stadium, is expected to reduce KSCA's power consumption drastically.

"In a matter of four years, the KSCA will get its returns," said H Nandi, founder of city-based technology solutions firm MRO-TEK that's implementing the project."It would also be able to generate Rs 70-80 lakh revenue with the power it generates."

MRO-TEK's next target is the floodlights at the stadium. "Each floodlight consumes about 1 MW power, with each bulb carrying 1,000 watts of power. It can be replaced with 200 watt LED bulbs, which we plan to do experimentally without disturbing other floodlights.

With this, power consumption would drastically reduce," Nandi said.

Ford to Divert 5 Million Plastic Bottles from Landfills to REPREVE

Since 2012, Ford Motors has worked with Unifi to bring environmentally responsible, high-performance REPREVE fiber to many Ford vehicles including the all-new F-150. By substituting with this recycled material, Ford says it will divert more than five million plastic bottles from landfills this year.

Ford is the only automaker to use REPREVE fiber, made from 100 percent recycled materials including plastic bottles, in its vehicles, a company press release stated. Ford is currently using REPREVE in five vehicles around the world to reduce, reuse and recycle as part of the company's global sustainability strategy to lessen its environmental footprint.

"By using REPREVE in the all-new Ford F-150, we are reconfirming our commitment to using renewable and recyclable materials in our vehicles," said Carol Kordich, lead designer, global sustainability materials strategy development. "We are always looking for ways to incorporate more innovative and sustainable materials into our vehicles."

$ 2 Trillion Spent on Clean Energy

Bloomberg reports that investors globally have spent a whopping $ 2 trillion on clean energy in the last decade. In 2014 alone, investors spent $270 billion on renewable technologies such as wind and solar brining in 103 gigawatts of clean power into the system.

"In 2014, renewables made up nearly half of the net power capacity added worldwide," an executive of the United Nation Environment Program said. "The climate-friendly energy technologies are now an indispensable component of the global energy mix. Their importance will only increase as markets mature, technology prices continue to fall and the need to rein in carbon emissions become ever more urgent," he added.

Interestingly, while declining prices for wind turbines and solar panels delivered 103 gigawatts for $270 billion, in 2011, $279 billion investment resulted in only 81 gigawatts.

IBM to Procure 20% Power from Renewables

IBM announced new goals for the use of renewable energy and for the reduction of greenhouse gas emissions. Its goals include procuring electricity from renewable sources for 20% of IBM's annual electricity consumption by 2020.

To achieve this goal the company plans to contract over 800,000 megawatt-hours (MWH) per year of renewable electricity — an amount that can power a city of 100,000 people. **It intends to match its purchased renewable electricity directly to its operations as opposed to purchasing renewable energy certificates as offsets, making a clear connection between purchases and consumption.**

IBM's next goal is to reduce CO2 emissions associated with IBM's energy consumption by 35% by year-end 2020 against base year 2005 adjusted for acquisitions and divestitures. This represents an additional 20% reduction from year-end 2012 to year-end 2020 over the reductions achieved from 2005 to 2012.

From 1990 to 2005, IBM said it avoided three million metric tons of CO2 emissions — an amount equal to 40% of its 1990 emissions — through a program of conservation actions. "Incremental progress becomes harder at this stage of maturity, but IBM nevertheless sustains its leadership, achieves results, and practices transparency." Its press note stated.

Since 1990, when IBM first began publicly reporting on its energy conservation activities, the note said IBM's conservation actions have saved more than 6.4 billion kWh of electricity consumption, avoided 4 million metric tons of carbon dioxide emissions, and saved the company more than a $513 million.

IBM's environmental protection and energy conservation initiative date back more than 40 years to when CEO Thomas J. Watson Jr. established IBM's first environmental policy, which called upon the company to be an environmental leader across all of its business activities.

US to Cut Government GHG by 40%

President Obama announced cut in the US Federal Government's greenhouse gas (GHG) emissions by 40% over the next decade from 2008 levels – saving taxpayers up to $18 billion in avoided energy costs.

The plan includes increase in government's use of power from renewable sources to 30%.

The suppliers to the government have also joined in to set new targets. Together, the combined result could reduce GHG emissions by 26 million metric tons by 2025 from 2008 levels, **the equivalent of taking nearly 5.5 million cars off the road for a year.**

The administration is planning to publicly track self-reported emissions disclosure and progress for all major Federal suppliers, who together represent more than $187 billion in Federal spending and account for more than 40% of all Federal contract dollars.

Levi Strauss Saves One Billion Liters of Water

Leading denim maker **Levi Strauss said it has saved one billion liters of water through its sustainability initiatives since 2011** through its Water Less Process, which reduces the water used in garment finishing by up to 96 percent. This announcement coincides with the release the company's new product lifecycle assessment. The new study analyzed the complete product lifecycle, probing deeper into the environmental impacts of cotton in key growing regions, apparel production and distribution in a range of locations, and consumer washing and drying habits in key markets.

The study shows that of the nearly 3,800 liters of water used throughout the lifetime of a pair of jeans, cotton cultivation (68%) and consumer use (23%) continue to have the most significant impact on water consumption. Consumer care is also responsible for the most significant energy use and climate impact, representing 37 percent of the 33.4 kilograms of carbon dioxide emitted during the lifecycle of a jean.

The new study, a company note stated, expands on previous research to better understand the impact of cotton cultivation and includes data from the world's primary cotton producing countries, including the United States, China, Brazil, India, Pakistan and Australia. It also analyzes consumer care data from new markets, including China, France and the United Kingdom, to understand the costs and benefits of differences in washing habits.

Better Cotton Initiative

To reduce the impact of cotton consumption the company said it is working with the Better Cotton Initiative to train farmers to grow cotton using less water. Based on the latest BCI harvest data available, in 2013, cotton farmers in China reduced their water use by 23% compared with farmers who were not using BCI techniques. The company plans to continue working with its global suppliers with the goal of sourcing approximately 75% BCI by 2020, up from 6 % today.

Benefits of Using Jeans More Often

The new study also revealed that **Americans use more water and energy to wash their jeans than consumers in China, France and the U.K.** It shows that consumers in China wear their jeans, on average, four times before tossing them into the wash — and if American consumers did this, they could reduce the water and climate change impact from washing their jeans by 50 percent.

"It's time to rethink autopilot behaviors like washing your jeans after every wear because in many cases it's simply not necessary," said Chip Bergh, CEO and president of LS&Co. "Our LCA findings have pushed us as a company to rethink how we make our jeans, and we're proud that our water stewardship actions to date have saved 1 billion liters of water.

By engaging and educating consumers, we can fundamentally change the environmental impact of apparel and, ideally, how consumers think about the clothes they wear every day."

Based on the study's findings, which indicate that consumers are responsible for 23% of the water used in the lifecycle of a pair of jeans, the company is launching a new consumer education campaign to ensure consumers understand their environmental impact.

Electricity Usage
Can Consumers Get Smart?

Sandeep Dutta,
Managing Director, Accenture's Resources Practice, India

The whole world is busy trying to make the electricity grids smart. The Indian power sector is constantly wooing and being wooed by proponents of smart grids. Conspicuous by absence in this movement is any direct involvement of the electricity consumer. She/He is expected to be a passive recipient of whatever the Utilities (smart or otherwise) do "to him", such as introduce Time-of-day tariff, apply Reliability Surcharge, increase Tariff, give Subsidy, etc. Not many think of doing something "with him".

In any other industry, the customer would be the king, or at least thought to be one. Not so in case of electricity. ***After all, electricity*** is an ***essential commodity*** that is not storable and sold by ***geographic monopolies*** at ***regulated prices***. Vow! Each italicized word in the last sentence is loaded, not so much with double entendre, but loaded against the customer!

For the purpose of this article, let us define "customer" as a consumer who is honest, willing and able to pay for the electricity (or energy) he consumes. That would include most readers of this article. Now, think about it… how many of us ever looked at our electricity bill? When did we do it the last time? The reason for our non-involvement of electricity – something that we are buying and consuming 24 x 7 x 365 x life – is quite simple and profound at the same time, i.e., we use electricity blindly. Till date, we had no choice.

Smart Consumer?

How about creating a smart consumer who uses electricity smartly, not blindly?!

That does not necessarily mean using less electricity or more electricity (or energy). It means having better understanding and control of our energy needs, and thereby more intelligent choice of energy consumption. At least high value consumption at industrial or commercial premises has a vast potential of better energy management, which is hitherto untapped. Even in residential premises of upper & upper-middle segments of society, the energy spend is high enough to necessitate smart consumer behavior.

And what exactly would that entail? What choices are available to a customer in the realm of energy consumption? None? Think again. You have electricity available from the Utility grid at a certain price. This price itself varies by multiple factors such as your monthly consumption, time of day of consumption, month of year or season of

consumption, your nature of premises, etc. Even for the same units of electricity consumed in a particular month by the same type of consumer, your bill amount (Rs. payable) could vary due to multiple factors such as prepaid billing (you can avail rebate), late payment (you have to pay surcharge), your sanctioned load vis-à-vis your maximum demand during the month, Power Factor of load at your premises, etc.

All this while we sometimes get a "feeling" that the Utility's electricity bill is "high"! Every month, our electricity bill is impacted by a multitude of such factors and we are not even conscious of it. Or maybe we don't care because "what difference would it make… it's a fait accompli, isn't it?"

The first step towards becoming a smart consumer is to know what energy-type I am consuming, how much, when, on what usage, and at what price. We need to have all this information firstly at instantaneous level in real time, and then in the form of analytical summaries that help us take insightful decisions and corrective actions. Many of us buy star-rated appliances, or undertake energy audits, but how many of us "know" at what tariff will putting up a solar rooftop at our premises become financially viable? Or how much was our electricity consumption when our premises was locked and apparently not in use? Is every oil company and mobile tower company sure about whether their petrol pump dealer or the tower site operator is not misusing electricity or backup diesel?

Knowing about our energy consumption and energy spend is the first step towards becoming smart consumer. Knowledge is power, and ***knowledge of energy consumption equals the power of energy saving through monitoring and control***. Today, technology can help us cross this bridge. A good example comes from AGL, Australia, wherein the Utility offers its consumers an online energy portal,at the touch of a tablet, showing complete details of electricity and gas consumption supplied by AGL; the online portal is free and exclusive to

If we want to move towards the vision of 100 smart cities, then the piloting of such a mandate should be started with these hundred cities, so that not just the cities, but the people there also become smart citizens; the first step of becoming smart citizen is to become a smart consumer

AGL consumers, and is accessible through web anytime anywhere.

Similar energy portals have now been developed by some pioneering companies in India, and their solution is already working at select industrial consumers. The same energy portal can be taken forward to medium load consumers (homes, offices, shops, etc.), as well as to Utilities who may also be interested in knowing the real time distribution of their energy demand on a google map. All this has now become a reality. With electronic prices falling over time, most upper-middle class families and virtually all commercial and industrial consumers can now afford their own personal energy portal – it may just be a phone call away.

While the consumers can take the initiative of deploying an energy portal solution at their premises at their cost, the true scaling up will happen when the electricity regulators mandate the Utilities to implement such deployment pan India. A policy intervention in this regard by the ministry of power and/or the ministry of science & technology will also help the cause further.

Create a Happy Street!

By Dr. Rekha Shetty

Can we adopt our streets and create a happy community? Start by loving the broom, implement of cleaning

'A broomi puja' or worship of the broom is a good idea. In Telengana, brooms are bought on Fridays, the day dedicated to Goddess Lakshmi. In many parts of India, the broom as an implement of cleanliness is worshipped during Dhan Teras. India, incidentally, has over 100 varieties of brooms.

To know more about the happy street look at one on http://mindspower.com/the-happy-street/. This will give you an idea on what to do for your own street today. Remember social capital is far more important than your bank account.

Let's stop talking and start sweeping changes on our own street! I am happy to introduce an innovative method to keep our streets clean and green to create a model world class city or town. The idea is for each individual to adopt his own street and create a happy community. The four pillars of the happy community are as follows:

Realize that what the world needs today are small acts of kindness, gratitude and optimism, not some fantasy about returning to the lost Garden of Eden

Economic Growth and Development, * Preserving and promoting cultural heritage *Encouraging sustainable use of environment, * Establishing good governance.

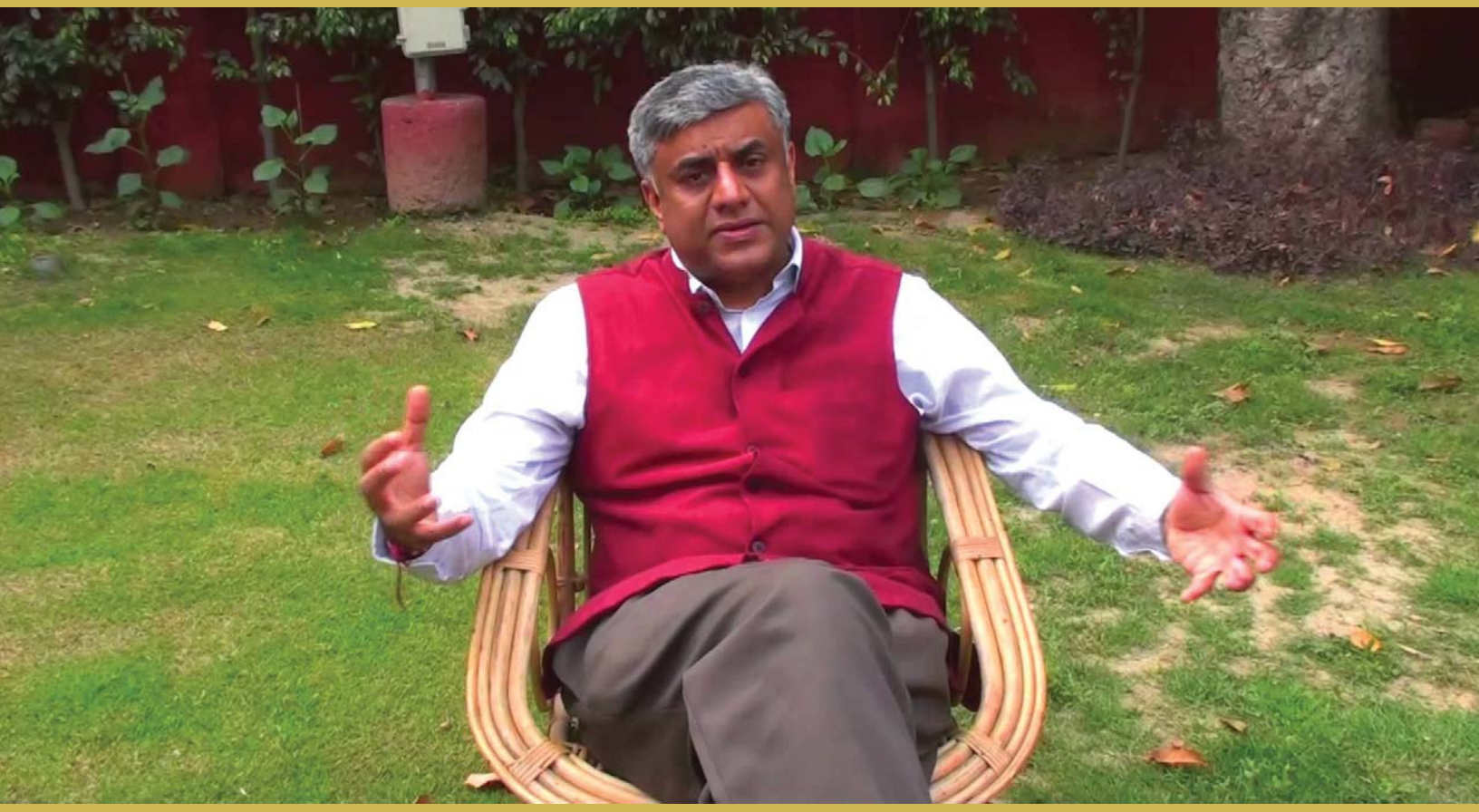
Let us adopt our own street with five members on a committee

1. To adopt cleaning, greening and composting bio-degradable waste as a regular practice (http://mindspower.com/the-happy-street/compost-bin/)
2. To build close bonds between neighbors and to mentor and teach young people special skills: sports, art, dance, music and storytelling.
3. To help economic development of disadvantaged domestic helpers, working on the street.
4. To build close relationship with officials of public utilities and government to ensure that problems on the street are solved fast.
5. A Chairperson to provide co-ordination and leadership

Once you begin to practice the principles of happiness in your own lives, your happiness will be infectious. Make many friends who can get together to laugh, work, read and share. Stop talking, start planting, each tree is an oxygen producing machine. A forest is an oxygen producing factory. Plant more trees, clean up the roads, start walking and playing together with your kids. Share knowledge, beauty and wisdom. Create your own village which is needed to raise a child in your little corner of the city, town or village.

Everything will be bright and blooming. You can create your own Shangri-La in the world (http://mindspower.com/the-happy-street/shangri-la/). For Shangri-La, is not a really a place. It is within everyone's own heart. The dream city is only a reflection of our own peaceful, happy hearts.

Has Indian Construction Rating Come of Age?



We can distil the knowledge of our ancestors, build a bridge between the ancient wisdom and our cutting edge technology – Rajeev Gowda

Leading professionals from the government, academia, civil society organisations, builders, architects and engineers participated in the sixth GRIHA Summit held today. Green Rating for Integrated Habitat Assessment (GRIHA) is the national rating system for green buildings in India and is the first indigenous attempt to address sustainability issues in the Indian construction sector.

The Summit provides a platform to showcase the rating's potential to achieve better performing buildings through its variances. More than 700 representatives from the construction industry participated in diverse discussions on breakthroughs in the urban and rural habitats. The Summit is being organized by The Energy and Resources Institute (TERI) and is supported by the Ministry of New and Renewable Energy (MNRE), Government of India, Bureau of Energy Efficiency (BEE), and the US Green Building Council (USGBC).

Delivering the inaugural address, Dr. Rajeev Gowda, Member of Rajya Sabha, commented: "While negotiating with other countries on environment and climate change issues, we emphasize that India is a low-carbon impact society. However, things are changing and adversely.

But we can still pre-empt this kind of future. We can distil the knowledge of our ancestors; build a bridge between the ancient wisdom and our cutting edge technology."

Mr Amit Kumar, Adjunct Professor, TERI University and Vice President, GRIHA Council voiced his concerns on the need to introduce certain changes in the construction sector. Sharing the latest achievements of GRIHA he commented that **"…we have over 21 million square metres that have been registered for GRIHA certification." So far 575 projects have been registered, and it is expected that more than 150 projects will be further added this year.**

Dr Leena Srivastava, Acting Director-General, TERI who set the theme for the Summit with her welcome note, also stressed on the rapidly changing environment and the need to involve all stakeholders said, "Climate, as we know it, is changing. While we want people to occupy green buildings, and there are more energy service companies are stepping in with services required to facilitate this, **it is important that the end-users are empowered to make informed decisions and understand that the economics work in their favour.** The need for concerted action on enhancing energy efficiency is much higher today, both for global and domestic reasons."

GRIHA Council felicitated seven professionals and organisations from diverse fields for having done exemplary work on promotion of sustainable habitats. The professionals are: Ms Poorva Keskar, Director at VK: E-environmental & Principal in-Charge of Masters in Architecture at BRICK School of Architecture, Pune; Ms Swati Puchapalli Reddy, Environmental Building Consultants, Terra Viridis; Mr Anurag Bajpai, Director, Planning & Sustainable Design, GreenTree Building Energy Pvt. Ltd.; Mr P Sahel, Vice Chairman, Lotus Greens; and Ms Anamika Prasad, Director, Environmental Design Solutions.

It is important that the end-users are empowered to make informed decisions and understand that the economics work in their favour

Mr NP Agarwal, Executive Director, received the award on behalf of National Building Construction Corporation Ltd for mandating at least a 3-star rating for all its building projects and ensuring countrywide implementation of GRIHA by organising intensive training and capacity-building of its professionals all over the country through TERI.

On behalf of Central Public Works Department, Mr Divakar Garg, Director General (Works) received the award for being at the forefront of promoting GRIHA and Green buildings, particularly in the public sector.

Some of the themes that were discussed on the first day of the Summit included:

Building India with GRIHA – Analyzing GRIHA's role in driving design and construction of sustainable habitats across the country, this session focused on the experiences and approaches of projects and teams across the country.

Designed in India! – 'Made in India' corroborates the GRIHA school of thought focussing on indigenous strategies. **This session focussed on local design solutions** being propagated across the sub-continent by leading architects of India.

The Summit comes in the wake of a revolution in the Indian construction industry. According to the 12th Five Year Plan, almost 600 million people would be living in urban areas, which may result in the emergence of about 60-70 cities with a population of more than a million by 2030. Green buildings are fast becoming a development imperative, as India is set to become the third largest construction market in the world by 2025.

Energy-Efficient Irrigation Pumping

96 GWh of Power Can be Saved

Agriculture sector in India consumes approximately 19% of India's electricity supply. With a total of 18 million electric pump-sets receiving free or cheap electricity, the net result has not only been a subsidy outflow of over INR 20,000 crore for electric pumping, but also inefficiency in energy and water-use.

With the need to significantly expand area under irrigation – only 45% of India's agricultural land is irrigated – energy and water demand from pumping is only going to increase. This state of affairs is clearly not sustainable and greater efficiency and lesser wastage in resource-use is the order of the day.

Bureau of Energy Efficiency (BEE) has estimated a saving potential of 25%, or 33 TWh annually, through efficient pumping. Since nearly a quarter of our electricity is lost during transmission and distribution, this translates to 44 TWh of power purchase avoided by DISCOMs, reducing their costs by more than INR 15,000 crore, and reducing state subsidies by over INR 5, 000 crore annually. This requires an additional INR 54,000 crore of investment in efficient pumps.

Farmers have found themselves devoid of financial capacity and/or incentives to migrate to efficient pumps. In most instances, rich farmers benefit from poor targeting or implementation of state subsidy policies. Even the supply to agriculture is not metered as diligently as for other sectors, since state governments subsidise it for end-users.

Therefore, even though a clear business case exists for energy efficiency (EE) in pumping, skewed incentives ensure that these low hanging fruits remain unexploited.

Agricultural Demand Side Management

In order to tap these savings, BEE launched the AgDSM scheme, whereby it would undertake replacement of inefficient pumps by efficient ones through an Energy Service Company (ESCO), at no additional cost to the farmer. For the 20,750 pumps audited by BEE on 87 feeder lines across eight states, **an average annual savings potential of 40% (96 GWh) was assessed, yielding a payback period of 3-4 years).**

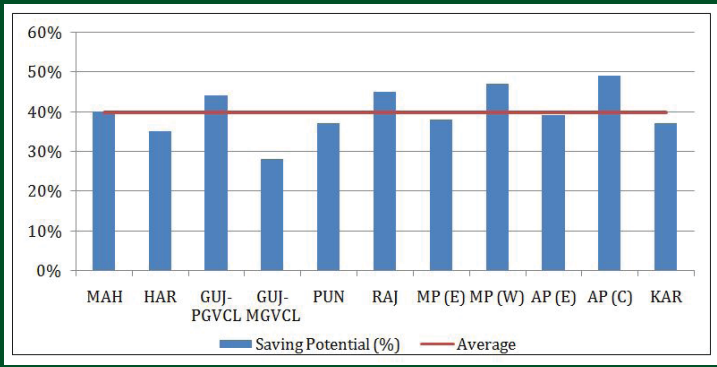


Figure 1: Energy Saving Potential from Pumping in BEE Surveyed Areas

The first phase of Hubli Ag DSM project in Karnataka covered 600 pumps and provided 37% energy savings

BEE engages the services of Energy Efficiency Services Limited (EESL) to implement AgDSM schemes using innovative business models. It provides an overview of a standard model, where EESL enters into a MoU with DISCOM and conducts energy audits, pump replacements and M&V based on its own resources, and shares the energy savings obtained from efficient pumps with the DISCOM.

The first phase of Hubli Ag DSM project in Karnataka covered 600 pumps and provided 37% energy savings. The second phase will cover 10, 000 pumps. Detailed Project Report for first the phase of BESCOM Ag DSM project covering 1 lakh pumps has been prepared, while replacement of 1,500 pumps in Mysore has been initiated. Similar proposals for Haryana and Rajasthan have been approved by respective governments. EESL estimates an investment of INR 1,000 crore for Ag DSM in the next 2-3 years.

Barriers and Recommendations

The limited experience with Ag DSM has highlighted numerous design and implementation challenges. It is questionable if the annual savings reported are sustainable, given the complex environment Ag DSM is operating in. This is indicated by the fact that the demand for AgDSM projects has not picked up commensurately with the demonstrated savings.

Some of the key issues and possible solutions are presented below:

1. ***Monitoring and Verification:*** Due to an absence of uniform M&V practices, there have been numerous instances of delays in project implementation. Proper metering of electricity supply is the first step towards baselining energy-use. It will also help utilities plan better and manage procurement more efficiently. Credible M&V reduces risks and delays, and builds positive outlook towards EE projects in the financial sector.
2. ***Financing:*** Ag DSM projects face difficulty in obtaining loans due to high risk perception, lack of exposure to DSM financing, and weak M&V protocol. While ESCO based model partially overcomes this through performance guarantees, national and state funds (PRGF and SCEFs, respectively) can help leverage private finance through financial risk-guarantees.
3. ***Acceptance by farmers:*** Farmers view the monitoring of consumption with suspicion, and are generally averse to pump replacement, since detailed site assessments show smaller optimal pump-size. Systematic awareness and publicity campaigns on the benefits to farmers, greater grass-root NGO involvement, and recognition through energy and water conservation awards can help overcome this scepticism.
4. ***Quality of Electricity Supply:*** Poor supply quality results in overdrawal, lower field efficiencies, and frequent pump failures. Unorganised sector pumps are designed to absorb the impact of variable voltages; this resilience comes at the cost of efficiency.

Predictable and quality power supply is critical to reduce performance risk, increase farmers' acceptance and improve bankability.

5. ***Institutional capacity:*** DISCOMs and State Designated Agencies (SDAs) are constrained due to lack of skilled personnel, institutional mechanisms, and prior experience in utility-ESCO partnership based EE projects. Each SDA must have an EE cell to inform the policy-makers and set targets. DISCOMs should be able to provide assistance in AgDSM implementation by providing reliable data and infrastructure.

6. ***Star-rated pumps:*** Studies have shown that **only a fraction of marketed pump-sets are from standardised ISI-marked brands.** MSMEs dominate the market; and their technical capacity must be augmented to conform to minimum performance standards. Complementarily, unlabelled pumps should be gradually phased out.

7. ***Electricity pricing:*** Steady increase in agricultural tariffs provides monetary incentives for farmers to switch to efficient pumps. This should be complemented with better supply quality and grid expansion to reduce dependence on inefficient diesel pumps.

Conclusion

Unlike other demand side management projects, AgDSM faces numerous complexities on account of its site-specific nature, interaction with a large unorganised sector with low technical and financial capacity, political factors, and adverse starting conditions in terms of baselining and measurement. This has resulted in numerous challenges, which have impeded the scaling up of Ag DSM. Irrigation pumping represents a leaky bucket whereby only a fraction of resources provided actually benefit the end-user. The underlying conditions responsible for this leakiness must be addressed in an era where energy production and consumption will continue to get more expensive.

The limited experience with Ag DSM has demonstrated the benefits available to be tapped. A strong political will coupled with an unwavering commitment to transparency and accountability will send a positive message to the stakeholders determined to make transformative changes in this sector.

Mohd. Sahil Ali is a Senior Research Economist. At CSTEP, he works on energy efficiency, demand side management, and other low carbon technology and policy options.

- Benedict Paramanand

You Are Not a Lottery Ticket


Peter Thiel

Dozens of books telling start-up entrepreneurs how to succeed have been published in the last few years with most of them not saying anything new. **Peter Thiel's *Zero to One - Notes on Startups, or How to Build The Future* -** is by far one of the best books for the start-ups, confused and struggling entrepreneurs and surprisingly, for indolent economists.

When the contrarian, controversial and haughty economist Nissim Taleb says it is a 'classic' and should be read at least three times to absorb its essence, it should be a serious must-read.

A book by someone who practices what he preaches and goes on to found, build and invest in companies that are path-breakers like Paypal and Facebook – then it is a book that cannot be missed.

This book is primarily for those who want to create a NEW world, hence the title Zero to One – It tells you how to get there. Peter insists that this book is not a manual or a record of knowledge but an exercise in thinking. "Because that is what a startup has to do – question received ideas and rethink business from scratch."

Peter's intent in writing this book is laudable – to spread his learning, beliefs, and experiences beyond Stanford or Silicon Valley. This book is NOT for the faint-hearted, who believe in the following: It's okay to be a copycat if the market size is big; be happy to be an also ran as long as you are making money;

Here are a few powerful insights I could pick. I could relate to them both as an entrepreneur and a student of Economics and public policy:

- It is better to risk boldness than triviality (As against Make Incremental Advances)
- A bad plan is better than no plan (As against Stay lean and flexible)
- Competitive markets destroy profits (As against Improve on the competition)
- Sales matters just as much as product (As against Focus on product – a good product will sell itself)
- If you want to create and capture lasting value, don't build an undifferentiated commodity business.

Monopoly is Good!

This is a shocking statement at first, but Peter's convincing argument hits people grown up on socialistic moorings. "Creative monopolists give customers more choices by adding entirely new categories of abundance to the world. They aren't just good for the rest of society they're powerful engines for making it better."

"If the tendency of monopoly businesses were to hold back progress, they would be dangerous and we'd be right to oppose them. But the history of progress is a history of better monopoly businesses replacing incumbents."

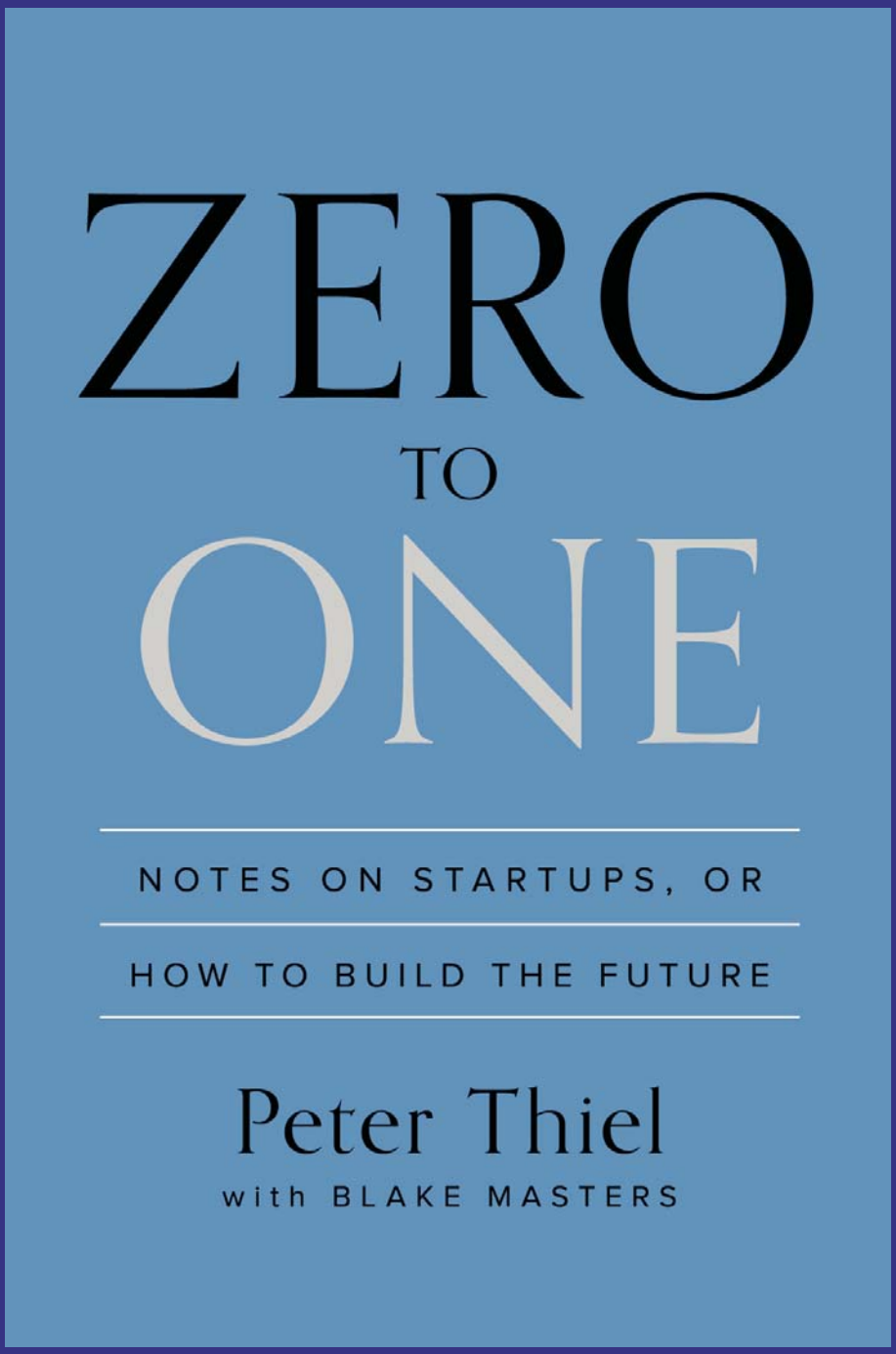
"So why are economists obsessed with competition as an ideal state? It's a relic of history….We preach competition, internalize its necessity, and enact its commandments: as a result, we trap ourselves

within it – even though the more we compete, the less we gain." He adds: "For a company to be valuable it must grow and endure, but many entrepreneurs focus only on short-term growth."

Peter goes on to explain how to build a monopoly – start small and monopolize. And "as you craft a plan to expand to adjacent markets, don't disrupt: avoid competition as much as possible."

Be the Last Mover

Peter is not much of a proponent of the 'first mover advantage, but moving first should be a tactic, not a goal. What really matters is generating cash flows in the future – "Being the first mover doesn't do you any good if someone else comes along and unseats you. It's much better to be the last mover – to make the last great development in a specific market and enjoy years or even decades of monopoly profits." But what's important, he says, "is to dominate a niche and scale up from there, toward your long-term goal. He says, here, business is like chess – You must study the endgame before everything else."



You Are Not a Lottery Ticket

This is the book's most compelling chapter. Peter says that all the greats who have said how luck was a big factor in their success, were "strategically humble".

He quotes Ralph Waldo Emerson who wrote: "Shallow men believe in luck, believe in circumstances. . . . Strong men believe in cause and effect. **"No one pretended that misfortune didn't exist, but prior generations believed in making their own luck by working hard."**

Interestingly, he points out that 'luck' is always referred in the past tense. "Far more important are questions about the future: Is it a matter of chance or design. . . . If you expect an indefinite future ruled by randomness, you'll give up on trying to master it." It's worth checking out Peter's brilliant illustration of what he means by 'Indefinite Pessimism, Definite Pessimism, Indefinite Optimism and Definite Optimism'. Check out where you stand.

It becomes clear what Peter is trying to convince this generation to do – to believe in the merit of planning – be it politics, life or business. He writes:

"In Philosophy, Politics and, business too, arguing over process has become a way to endlessly defer making concrete plans for a better future. . . . How can the future get better if no one plans for it? . . . We have to find our way back to a definite future, and the Western world needs nothing short of a cultural revolution to do it."

Just like every author's favorite example is Steve Jobs, Peter too gives him a close look, but unlike most others, he sees Jobs differently. He writes: "The greatest think Jobs designed was his business. . . . Jobs saw that you can change the world through careful planning, not by listening to focus group feedback or copying others' successes."

He credits the success of Facebook to Mark Zuckerberg's careful planning, unlike Yahoo which seems to be still trying to figure out where it wants to be.

VCs Play the Game of Lottery Ticket

Peter shows how pissed off he is with the way venture capitalists think. "Whenever you shift from the substance of a business to the financial question of whether or not it fits into a diversified hedging strategy, venture investing starts to look a lot like buying lottery tickets. And once you think that you're playing the lottery, you've already psychologically prepared to lose." He wants them instead to find the handful of companies that will successfully go from 0 to 1 and back them with every resource.

Practical Tips

This book is indeed one of the most practical manuals one can lay their hands on; yet, it's not written like one. It is an easy read, but not a racy read. Here are some:

- Founders should share a prehistory before they start a company together – otherwise they're just rolling dice.
- Serendipity and even free-form chaos at the workplace supposed to help disrupt old rules, but you also need a structure to help keep everyone aligned for the long-term.
- In the boardroom, less is more – for effective oversight
- Hiring consultants, part-time employees don't work – they'll be biased to claim value in the near term, not help you create more in the future.
- Everyone working remotely should be avoided because misalignment can creep in whenever colleagues aren't together full-time.
- No company has a culture; every company is a culture. A startup is a team on a mission, and a good culture is just what that looks like on the inside.
- From the outside, everyone in your company should be different in the same way; On the inside, every individual should be sharply distinguished by her work.
- The best sales is hidden.
- Never hire a tech CEO who wears a suit.
- An entrepreneur cannot benefit from the macro-scale insight unless his own plans begin at the micro-scale.
- Creation of new value cannot be reduced to a formula and applied by professionals – it needs the founders to do it
- We should be more tolerant of founders who seem strange or extreme: we need unusual individuals to lead companies beyond mere incrementalism.

There's very little to disagree with Peter on the central construct of this book. Nit-pickers could pick a small hole here and there, but largely, this is for those who want to change the world, make a difference and of course, grow rich.

If you are a student and want to drop your college to start a company, he will even fund you!

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- Benedict Paramanand

Growth Vs Human Well-being

A sharper focus on human well-being rather than aggressive growth as the primary economic objective, shifting the global economic machine away from intensive resource use and the endless pursuit of 'more', is the heart of The Worldwatch Institute's **State of the World 2015 - Confrontation: Hidden Threats to Sustainability.**

The current debate, which the authors call 'sustainababble' focuses more on rhetoric and less on action. Issues argued in the chapters include a debate over unbridled economic growth orientation; applying smart financial policies to reign in consumption; mounting losses of agricultural resources due to decline in productivity; growing dead zones in the oceans; emerging diseases from animals and migration as a climate adaptation strategy.

"These threats are hidden in the sense that they are commonly overlooked or underappreciated but addressing them is critical to building sustainable societies." The introduction to the book notes: "These are significant threats, but each and every one of them has solutions, especially if we commit to an ethic of stewardship, robust citizenship, and a systems approach to addressing the challenges that we face."

For many of these hidden threats, the solutions are common sense. The authors argue that more rapid adoption of renewable energy systems would reduce the pressure to find ever more exotic sources of fossil fuels. The pressure to import food could be reduced by effectively increasing food supplies through reductions in food waste—**about a third of the global harvest is lost each year. But this requires that economics ministers and others set human well-being, rather than growth, as the primary economic objective, shifting the global economic machine away from intensive resource use and the endless pursuit of "more."**

Climate change, once the preserve of very few specialists, has become a household word. On September 21, 2014, an estimated 400,000 people marched in New York City to demand that government leaders assembling in that city for a "climate summit" finally move from rhetoric to action. It was the largest of more than 2,600 protest events worldwide. The marches were the culmination of decades of growing climate activism.

The authors fear that powerful fossil fuel interests have mobilized with great effectiveness to thwart action amid all this hot air, sowing doubt and confusion about climate science, and opposing or delaying effective policy making.

Endless economic growth driven by unbridled consumption is so central to modern economies and is so ingrained in the thinking of corporate and political leaders that environmental action is still often seen as in conflict with the economy, and is relegated to inferior status.

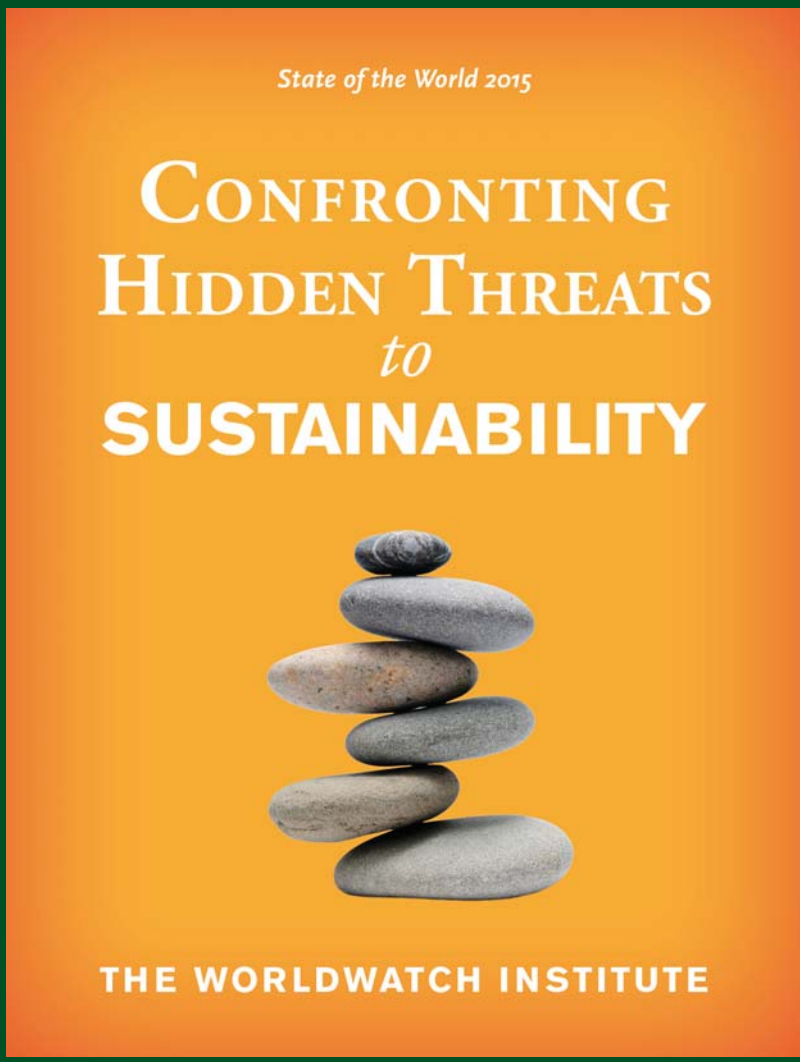
‘Green Growth’ is Humbug

Excerpts from the Introduction

The introduction to the book takes a dig at the new fancy concept ‘green growth.’ The authors note this “concept that reaffirms the centrality of economic growth and avoids any critique of the underlying dynamics that have brought human civilization to the edge of the abyss.”

According to the Organization for Economic Co-operation and Development (OECD), “green growth means fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies.”

“With civilization itself hanging in the balance, however, change in the face of climate chaos should be a no-brainer. Yet the politics of climate change to date indicates just how limited society’s willingness to act on scientific advice can be. **In the battle to do what is needed to ensure humanity’s long-term survival, a combination of denial, short-term thinking, profit interests, and human hubris is proving hard—perhaps even impossible—to overcome.**



Humanity is ever so slowly coming to grips with the growing reality of a destabilized climate. Even as scientists and others shed light on the likely repercussions such as sea-level rise, droughts, floods, and super storms, some challenges remain undetected or at least underappreciated. These challenges—several of which are discussed in the chapters that follow—concern not only environmental dynamics themselves, but also how they translate into the social, economic spheres.”

The world now needs to adopt solutions that change the entire system of production and consumption in a fundamental manner, that move societies from conditions of energy and materials surplus to scarcity, and that develop the foresight needed to recognize still-hidden threats to sustainability. **This goes far beyond the realm of technical adaptations, and instead requires large-scale social, economic, and political engineering—in an effort to create the foundations for a more sustainable human civilization.**

http://www.worldwatch.org

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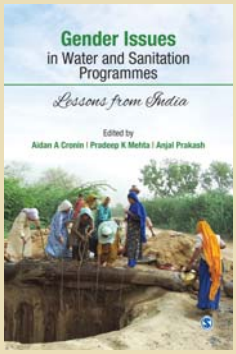
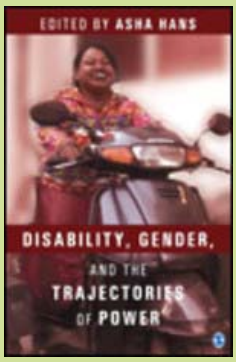


Gender Issues in Water and Sanitation Programmes - Lessons From India

By A. Aidan Cronin, Sage, January 2015

Exclusion and inequitable access to water, sanitation and hygiene (WASH) services and opportunities are major concerns to development practitioners. The job of providing water for the household invariably falls on women, often at the expense of their education, income-earning opportunities and social, cultural and political involvement.

This book aims to unpack the key elements of the WASH–gender nexus, examine these and recommend ways ahead for improved gender outcomes and WASH impact in India.



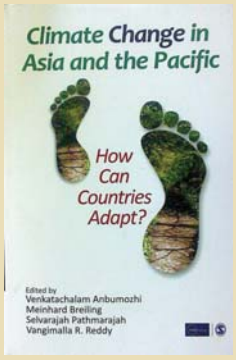
Disability, Gender & The Trajectories of Power

by Asha Hans, Sage India, March 2015

This book argues for the rights of women with disabilities, who live on the periphery of society, and seeks to eradicate the exclusion and stigma that are part of their lives.

The volume brings together the perspectives of academicians and activists in trying to understand the various social issues faced by women with disabilities and argues for a society where they are not denied of respect, equality, and justice.

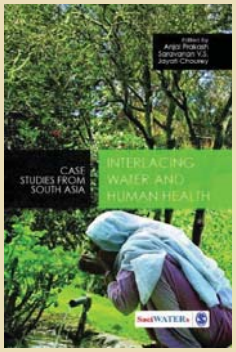
It fills the gap in the existing feminist research and seeks to influence the way in which society treats women with disabilities. This book will interest scholars and researchers in the field of women's rights, disability rights, and rehabilitation.



Climate Change in Asia and the Pacific: How Can Countries Adapt?

By Venkatachalam Anbumozhi, Sage India, January 2015

This book provides a rigorous and up-to-date analysis of the climate change risks and impacts for the Asian region. It also presents some of the successful adaptation case-studies in the region and provides a stepwise guidance on ways to integrating adaptation programmes into the mainstream policy and planning process…The editors of this book have so skillfully weaved the contributions of different author-teams that it retains its flow from the very beginning to the end and is able to engage not only specialists and fellow professionals, but a general audience as well. (Source: Current Science)



Interlacing Water and Human Health - Case Studies from South Asia

Edited by Anjali Prakash, Saravanan V S, Jayati, Chourery, Sage India, 2012

An increasing recognition of the need to understand the complex systems in the health sector has raised the demand for an examination of water and health from a systemic perspective. Analyzing the various discourses on the subject, the volume revolves around this central question: What are the linkages between water and health in South Asia?

The interlacing of water and health exists wherever human health is adversely affected, directly or indirectly, by changes in the quality and quantity of water. These adverse effects are linked with poverty, environment, and infrastructure in the overall socio-political and economic-developmental context.

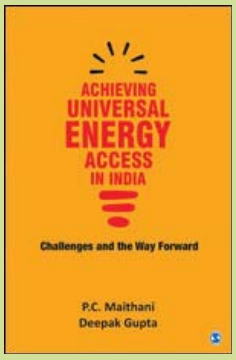
The book looks at the linkage between water and health in an integrated manner, and is not based on the 'absence of disease' syndrome. The curative, preventive, and adaptive aspects of the public-health problem have also been delved into. Among other areas, the articles deal with water and health with reference to water supply, sanitation, water pollution, natural disasters, urbanization, and industrialization.

Armed with the latest research and case studies from South Asia, the book calls for a comprehensive understanding and better integration of water and health issues in the region.

Interlacing Water and Human Health is the third volume in the Water in South Asia Series published by SAGE and South Asia Consortium for Interdisciplinary Water Resources Studies (SaciWATERs).

To train farmers to grow cotton using less water. Based on the latest BCI harvest data available, in 2013, cotton farmers in China reduced their water use by 23 percent compared with farmers who were not using BCI techniques. LS&Co. plans to continue working with its global suppliers with the goal of sourcing approximately 75 percent Better Cotton by 2020, up from 6 percent today.

LS&Co. will also continue to work toward using less water during manufacturing by expanding the Water<Less™ process to include more Levi's® products, such as tops. By 2020, the Levi's® brand aims to make 80 percent of its products using Water<Less™ techniques, up from nearly 25 percent today.



Achieving Universal Energy Access in India - Challenges and the Way Forward

By P. C Maithani, Deepak Gupta, Sage India, March 2015

Forty-five per cent of India's rural population is without electricity and over 85 per cent is dependent on biomass to meet its cooking needs. Projections suggest that if the present trends continue, a large section of India's rural population will remain without access to modern energy services even in 2030. It also follows that energy access is not only a critical component for reducing rural poverty and drudgery but it is also one of the fundamental conditions for holistic rural development.

The book takes a critical look at the present energy policy and addresses ways to improve energy penetration. In doing so it encourages the use of renewable energy as an alternate medium, challenging the traditional power proponents.

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MA in Environmental Economics (Distance Learning Course)
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PhD in Environmental Bio-Technology & Solid Waste Management School of Environmental Sciences
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http://www.jnu.ac.in/main.asp?sendval=SchoolOfEnvironmentalSciences

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http://www.siib.ac.in/programmes.aspx

Events

Global Summit on Corporate Social Responsibility
May 15-16, 2015, New Delhi
http://www.iimraipur.ac.in/gscsr2015

CSE Media Fellowships Programme for the Global South
May 2015-July 2015
http://www.cseindia.org/content/cse-media-fellowships-programme-global-south

The Sixth International Conference on Future Energy Systems
July 14-17, 2015, Bangalore, India
http://www.wikicfp.com/cfp/servlet/event.showcfp?eventid=39226&copyownerid=45395

TERI-ITEC Courses 2014-15: Special Course on Social Enterprise for Sustainable Development
September 15 – 3 October 2015, Gurgaon
http://www.teriin.org/our-events

TARA's 2 days CSR Certification Training Programme
April 16-17, 2015, New Delhi
http://www.indiacsr.in/en/tara-organizing-two-day-csr-certification-training-programme-at-new-delhi-26-27-feb/

CII CSR Summit & NGO Mela 2015
April 17, 2015, Bangalore
http://www.cii.in

CII-CESD Certified Training on Design & Implementation of Sustainability Management Framework as per ISO 26000 : 2010
April 29-30, 2015, Bangalore
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