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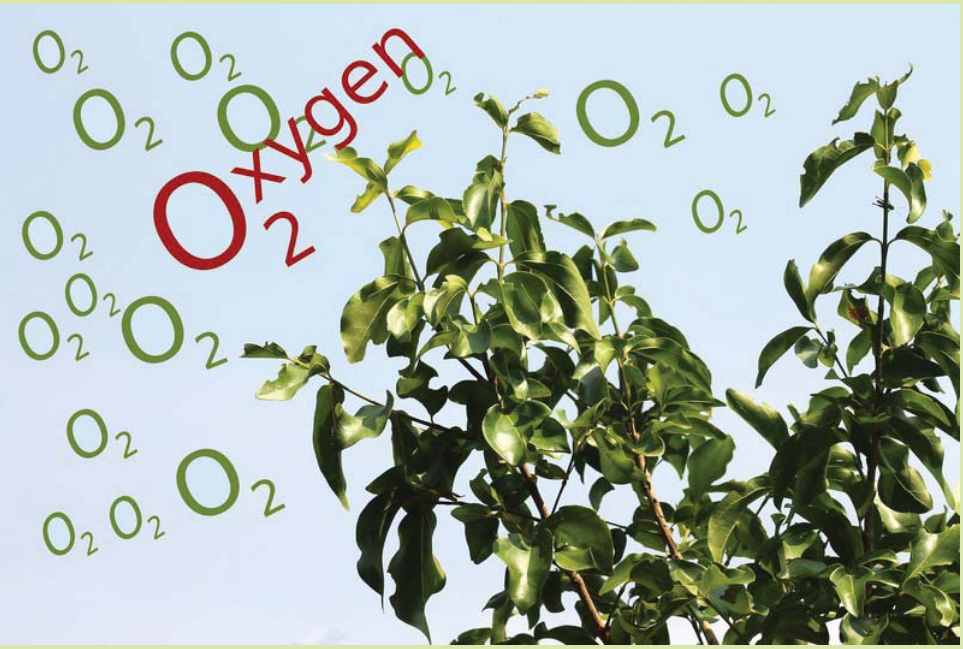
Pay for Oxygen, Reclaim Forests



Costa Rica has shown that it is possible for economies to grow faster even while adopting environmental sustainability policies. Can the whole debate shift from curbing carbon emission to supporting release of excess oxygen into the atmosphere? Can people who nurture forests and trees be rewarded handsomely so that they don't exploit it?

By ***Benedict Paramanand***

We have been raised with meaningful, sometimes contradictory phrases such as 'the best things in life are free;' and 'there's no such thing as free lunch.' With the threat of climate change looming large isn't it high time the world focused on the second phrase than the first?

Conventional measures such as strict laws, forest police force, animated campaigns from organizations such as the Greenpeace are having minimal effect and there is a sense of hopelessness all around. Policy makers are dreadfully slow and are obsessed with protecting their 'national' interest rather than seeing their country as part of one planet.

Economists have argued that, just like democracy,

Inside

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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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market could come up with better solution to a lot of problems even if they are not perfect. Innovative business models and creative pricing of natural resources could be the solution. The good news is that innovations have taken place already and have **shown** that they indeed work wonders. They simply need replication and necessary modification.

Costa Rica Model

This may sound like a miracle. A tiny Costa Rica in Latin America has almost rejuvenated its **once** verdant forests in the last two decades using an innovative business model and has grown its GDP per capita three times while doing so. People have been sighting jaguar pugmarks indicating that the food chain is indeed returning to Costa Rican jungles. It has clearly demonstrated that growth need not happen at the cost of Nature, a fundamentally contrarian approach to what most economists believe – that developing countries have to bear environmental cost if they want growth. Read blogger Carlos Maneul Rodriguez's inspiring blog http://blog.conservation.org/2014/10/the-rainforest-speaks-and-costa-rica-listens/ for more.

Today, tourists from across the globe are thronging Costa Rica to swim in its clean waterfalls, zip through miles of tree-lined roads and in search of its unique wildlife.

It wasn't like this 30 years ago. Like several Latin American nations, Costa Rica too got influenced by quick buck from cattle farming to feed the big American appetite for meat and coffee in the 60s, 70s and 80s. Thousands of hectares of virgin forest were cleared to build cattle ranches or grow coffee. But by early 80s, this business was losing money and the cattle had grown old. Latin Americans were piling up debt and at the same time were left treeless.

Costa Ricans didn't sulk and did not wait for foreign aid to bail them out. They came up with an incentive plan for landowners to rejuvenate forests and manage them. Called Payment for Environment Services' (PES), also termed **'Paying for Nature's Benefits' scheme, this scheme was based on the idea that forest owners will maintain and restore their forest if they can make as much or more money doing so than by destroying it.** Essentially, farmers are paid for the carbon, water and biodiversity services their land provided and used by people nearby as well as anyone anywhere.

Costa Rica has learned from its mistakes. Carlos Manuel Rodriguez, who became Costa Rica's minister of environment in 2002, took many international visitors to his grandfather's farm to illustrate the benefits

of positive incentives for forest conservation. His grandfather didn't trust this model until he received a cheque for $20,000 for managing his own piece of forest well.

The main source of funding was tax on fossil fuels. The logic was that polluters should pay farmers for offsetting their carbon footprint by maintaining and planting trees that absorb carbon.

To date, the PES program covers more than 700,000 hectares (more than 1.8 million acres) through 8,000 contracts with farmers and indigenous communities in Costa Rica. According to the Organisation for Economic Co-operation and Development (OECD), 63 countries now have a PES program at some level of development but not significant enough to make a dent.

Even today trees are seen as only sources of timber. If trees are seen as sponges absorbing harmful CO_2 and releasing life sustaining oxygen and that the people who help nurture and protect these are compensated adequately the whole dynamics of how the world views forest management could change.

Possible Options

a. Why can't countries levy an oxygen tax on all consumers of fossil fuel, forest products like wood, on mineral water bottles, etc? Collect this tax and pay dividends to people/families/communities/companies who manage forests.

b. This model can be applicable only for forest areas that can be reclaimed and rejuvenated and those who convert arid lands into forests or those who could turn their low-yielding agriculture land into forest.

c. This way the tribal communities can be given ownership of vast forest stretches. **They can get paid as equity, not as labour,** for their services. This way they will not exploit the forest and the forests would survive and flourish. In countries such as India, it could even bring down distress and bad governance-driven militancy.

d. The enormous funds from this source can be used to equip a modern forest army that can prevent poaching and encroachment of forest land.

e. The focus of international negotiations so far has been on cutting greenhouse gas and levying carbon tax with the purpose of reducing consumption of fossil fuels. Instead, if an oxygen tax is levied on consumption beyond a certain basic limit, it could have a different effect. More oxygen will be pumped into the atmosphere and the natural habitat would become vibrant. Essentially, a feeling of doing good could emerge as against indifference by consumers. This mental shift could bring consumption down.

f. More funds from the oxygen tax could be used for innovations in renewable energy and clean-tech all over the world

A paradigm shift from focus on curbing carbon consumption to encouraging releasing excess oxygen into the atmosphere may result in reclaiming Planet Earth faster. It could result in fewer man-animal conflict, and put an end to the never-ending debate of growth vs. climate change.

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Smart Cities India 2015

Exhibition and Conference

20-22 May 2015
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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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CDP Picks Top Climate Change Performers

187 companies illustrate that a low carbon future does not mean low profit

A new global index based on companies that exhibit leadership through action to mitigate climate change outperforms The Bloomberg World Index by 9.6%. So finds analysis released by CDP, an international NGO that drives sustainable economies.

The research is published in The **A List: The CDP Climate Performance Leadership Index 2014,** which has been created at the request of 767 investors who represent more than a third of the world's invested capital Information provided by nearly 2,000 listed companies has been independently assessed against CDP's **widely-respected scoring methodology** and ranked accordingly.

187 businesses from around the world, including **BMW AG, Centrica, Samsung Electronics** and **Unilever**, demonstrate a superior approach to climate change mitigation. Awarded an A grade for their performance, they earn a position on the first global ranking of corporate efforts to mitigate climate change. Collectively the climate performance leaders have reduced their total (absolute) emissions by 33 million metric tons in the past reporting year, equivalent to turning London's car owners into cyclists for two and a half years.

An A List leader will:

- **Yield win-win results.**

  The investments of companies on the Climate Performance Leadership Index (CPLI) 2014 to reduce carbon output yield average annual

emissions reductions of 9% per company and achieve impressive financial results, with an average internal rate of return (IRR) of 57% for each project. "A Lister" **Iberdrola**, the electric utility company, discloses an investment of US$3.8 billion in energy monitoring and distributions systems to cut its emissions by 50,000 metric tons. Car manufacturer **General Motors** implemented route redesigns, mode changes from road to rail, and other measures that have resulted in emissions savings of 244,000 metric tons a year and cost savings of US$287 million.

- **Apply a business lens to climate change.**

  A List leaders demonstrate robust accountability for their contribution to climate change and have a heightened understanding of the business implications as a result. Although 96% disclose that climate change poses a risk to their business, 99% identify opportunities through mitigation strategies. Construction group **Samsung C&T Corporation**, for example, has assessed that responding to consumer demand for green products can increase its sales profits by at least 9% within the next seven years.

- **Raise the bar on investment.**

  The A List represents just 9% of the 1,971 companies scored this year but accounts for US$23 billion of the annual investment to reduce carbon emissions, which is just under half of the US$50 billion invested by the full sample. Leaders go beyond the easy-to-achieve approach of energy efficiency. Spanish industrial technology firm **Abengoa** saves US$911 million annually having diversified its energy supply by installing two solar power plants.

- **Shift away from short-termism.**

  Projects to reduce emissions have an average life span of 12 years, which demonstrates a willingness for some long-term investing. Targets to reduce emissions tend not to go beyond 2016/17, which suggests a lack of long-term strategy to meet the global carbon budget. Ambition must be raised to realize the longer-term transition to sustainable economies. Policy is cited by leaders as a risk and opportunity in almost equal measure. It is likely that a lack of clear long-term policy is stalling corporate progress toward ambitious long-term targets. Companies and their trade associations should therefore engage more with governments to influence national polices that will unlock the full potential of business to decrease greenhouse gases worldwide.

The largest leading companies by market capitalization include **Apple Inc., Microsoft Corporation** and **Google Inc.** Almost half of the performance leaders are headquartered in Europe, with a further third located in USA or Japan. More than a quarter of the Spanish and Belgian companies that took part in CDP's climate change program were awarded an A, proportionally giving Spain and Belgium the most leaders. Portugal, the Netherlands and South Korea have also performed well in this regard.

Canada, Switzerland and Australia have small proportional representation on the leader board. Of those corporations that **failed** to disclose vital climate change data, the three largest in terms of market capitalization are **Berkshire Hathaway, Amazon.com Inc.** and **Comcast Corporation.**

CDP is an international, not-for-profit organization providing the only global system for companies and cities to measure, disclose, manage and share vital environmental information. CDP works with market forces, including 767 institutional investors with assets of US$92 trillion, to motivate companies to disclose their impacts on the environment and natural resources and take action to reduce them. CDP now holds the largest collection globally of primary climate change, water and forest risk commodities information and puts these insights at the heart of strategic business, investment and policy decisions.

Rajiv Joshi is MD of The B Team

The B Team announced a new executive leadership structure to help drive forward their vision of business as a driving force for social, environmental and economic benefits.

The new structure aims to model an innovative approach to leadership in the non-profit sector with a newly appointed managing director and three senior partners who will work collaboratively with Co-Chairs Sir Richard Branson and Jochen Zeitz, and the wider group of B Team Leaders to drive forward a Plan B for business.

The partnership will provide overall support to bolster The B Team's efforts and help catalyze the overall movement while focusing on the four inaugural Challenges: transforming leadership, redefining the bottom line, changing incentive structures and driving investment towards companies that put people and planet alongside profit.

The B Team is a not-for-profit initiative formed by a global group of leaders to create a future where the purpose of business is to be a driving force for social, environmental and economic benefit. The B Team includes Ratan Tata and Paul Polman

Rajiv Joshi, who has been with The B Team since the start and has been leading the management team for an interim period, has accepted the new role.

Rajiv Joshi formerly served as executive director for the Global Call to Action against Poverty (GCAP), and serves as a Trustee of Oxfam, and has previously worked as a Senior Public Sector Consultant with CapGemini. He sits on the Board of the Centre for Scottish Public Policy and was an elected Board Member and Corporate Secretary of CIVICUS: The World Alliance for Citizen Participation.

From 2005-2007 Rajiv served 2 elected terms as Chair of the Scottish Youth Parliament, during which time he was also a Senior Advisor to the British Council and a publicly appointed member of the Equality and Human Rights Commission Scotland Committee.

Rajiv's parents were born and raised in Kisumu, Kenya, with his family originating from Gujarat, India, but migrated to Scotland after the spread of violence in neighboring Uganda. He holds a First Class Honors Degree in Economics from the University of Strathclyde and a Masters in Public Policy and Administration (MPA) from the School of International and Public Affairs at Columbia University.

Greenpeace Successfully Pressurises Lego to Drop Shell Oil Partnership

The world's largest toymaker Lego recently said it was ending a deal with oil giant Shell, bowing to pressure from a Greenpeace campaign linking Lego toys to Arctic oil spills.

Announcing the decision to stop the multimillion dollar marketing deal -- which includes Lego sales in Shell petrol stations around the world, and Shell logos on the toys -- Lego chief executive Joergen Vig Knudstorp said: "We do not want to be part of Greenpeace's campaign".

Since July more than five million people have viewed a Greenpeace video on YouTube entitled "Everything is NOT Awesome" -- featuring Arctic Lego landscapes dotted with oil rigs, polar bears and children playing ice hockey -- until they are all drowned in oil. The only thing left is a Shell flag and the slogan "Shell is polluting our kids' imagination".

"The Greenpeace campaign uses the Lego brand to target Shell. As we have stated before, we firmly believe Greenpeace ought to have a direct conversation with Shell," Vig Knudstorp said in a statement published in Danish daily Politiken, adding that the Shell deal would end when the current contract expires.

"The Lego brand, and everyone who enjoys creative play, should never have become part of Greenpeace's dispute with Shell."

The decision marked a major turnaround by the toymaker, said Annika Jacobson, at Greenpeace Nordic, as the Danish company initially claimed it had nothing to do with the environmental group's fight to stop Shell prospecting in the Arctic.

This sends an important signal to oil companies that they will not be able to use other brands to gain social acceptance.

In August Shell submitted a new plan for drilling in the Arctic off the coast of Alaska, more than a year after halting its program following several mishaps with drilling rigs and high-profile clashes with Greenpeace activists. Lego's announcement will make it harder for Shell to avoid negative publicity in the future.

IIT Madras Designs E-Toilet

A pilot project is on at a women's hostel at IIT Madras where an e-toilet operates off the grid without connections to water, sewer or electrical lines - as part of the 'Reinvent the Toilet Challenge.'

Last year, the Union ministry of science and technology and the Bill & Melinda Gates Foundation, in collaboration with Biotechnology Industry Research Assistance Council (BIRAC), launched the toilet challenge to support sanitation research and make it affordable to the poor.

Duke University of US and Thiruvananthapuram-based Eram Scientific Solutions together developed the model for IIT-Madras. "It has an integrated Anaerobic Digestion Pasteurization Latrine (ADPL) system which will treat the waste and recycle the water," said Anwar Sadath, CEO of Eram.

The company also launched a solar-powered e-toilet in a government girls' school in Thiruvananthapuram which has proved successful. **It costs less than ₹1 lakh which is possibly the cheapest globally. Normally, an e-toilet costs three to four lakhs.**

This project is expected to provide hygienic sanitation accessible to the poor. These field trials seek to analyze the feasibility and outcomes of making a public toilet completely standalone without external inputs. The pilot will be on trial for a year and once successful it will go for commercial distribution.

BSE to Launch Climate Change Index

BSE Ltd, formerly known as the Bombay Stock Exchange, is in talks with asset managers to launch an exchange-traded fund (ETF) based on its climate change index in the next couple of years, its chief executive said recently. BSE launched the S&P Carbonex index in 2012 based on its popular BSE 100 index, giving increased weighting to companies depending on carbon footprint scores.

"We continue to prod investors and people who specialize in those kinds of investments about tracking this index and having an ETF," Ashishkumar Chauhan said at the recent Reuters Global Climate Change Summit.

"The investors who look to invest with a longer-term horizon tend to be a little more into nudging the companies into sustainable activities," Chauhan said. "This is not only a do-good kind of activity, but also a commercially prudent framework for investors to look at."

Smart City Plan - Singapore Model Most Appealing

The smart city plan and fund allocation of more than Rs. 7,000 crore in the current budget has everyone excited. Real estate developers, IT and financial experts from global companies in various infrastructure fields have started queuing up outside the urban development ministry.

Shankar Agarwal, secretary, Urban Development Ministry is quoted as saying he sat through 200 presentations from various stakeholders. The smart cities will be equipped with utilities including uninterrupted water and power supply, a well-established waste disposal mechanism and IT services.

Reports suggest that the government has found the Singapore model to be most viable. It has a pyramidal approach and suits the Indian context. The model presented is in accordance with economically sustainable designs as well. Sushma Swaraj, External Affairs Minister is quoted as saying: "Singapore's expertise in smart cities, urban planning and water management strategies offer a valuable learning experience for India. We shall work for setting up greenfield smart cities and for urban rejuvenation. Our experts shall identify the priorities and we shall coordinate its timely delivery,"

The urban development ministry is scanning all presentations and will put the meaty presentations in public domain asking for suggestions from stakeholders. Inputs from states will be asked before taking a final call.

What Millennials Think about Future of Business Citizenship

The MSLGROUP recently released a 17-country study of 8000+ millennials on the Future of Business Citizenship. The research explores millennials' views on good citizenship and the role businesses should play in solving the world's toughest social and environmental issues. Purpose, responsibility, transparency and engagement is clearly at the core of business strategy today and as thus will have a profound impact on how businesses shape their future growth - and attract future employees.

Sample Findings

- The overwhelming majority of millennials believe business should be leading in solving the world's greatest problems.
- Seventy-three percent of millennials strongly believe governments cannot solve them alone.
- **Millennials believe what companies actually do is more meaningful that why they do it. Having a purpose alone isn't good enough. They want actions.**
- Millennials can separate the issues they care most about and the ones they feel businesses should address.

Also, what is most interesting is that Millenial's expectations to business citizenship differ from industry to industry and from country to country.

MSLGROUP has offices in 22 countries around the world. Between these we have 17 appointed corporate purpose/business citizenship practise leaders with specific insights to their country/country area respectively

Full report http://mslgroup.com/insights/2014/the-future-of-business-citizenship.aspx

Real-time Healthcare

Just like many technology companies in India EMC has been engaging in sustainability related activities. It started off earnestly by getting involved in school education around Bangalore and mentoring students, apart from reducing its carbon footprint through several measures including operating from green buildings. Healthy ecosystems, engaged people and shared value have been its guiding principles.

But, being a technology company, EMC India realized a couple of years ago that it can make a far-reaching impact only by applying its technical strength to serve communities' pressing problems. It picked primary healthcare which has been India's bane for a long time.

The company is now ready with two pilot projects, one in Chamarajnagar, Karnataka and another with an NGO, to directly impact healthcare access in remote areas using technology on a real-time basis.

EMC India is using a collaborative approach to achieve maximum outcome. It has built a platform which can be accessed remotely through a tablet PC. For example, if there is an incident with a new born or a mother which requires specialist care, just an alert will ensure that help is available immediately. Video chat facility ensures better diagnosis real time. The company is currently working with NGOs in Karnataka to learn ground realities and with tablet PC manufacturers to run its platform optimally.

Chandrasekar Krishnamurthy, VP, Global Services EMC Software and Services India Private Limited, says: "When you look at healthcare and education, 70 percent of the world has the same problem. If we can solve India's problems we can solve the problems of the rest of the world." In recent years India has indeed become a hotbed of innovation for the world and this would be the latest addition.

EMC's healthcare platform is expected to eventually bring good revenues for the company globally. "This is being looked at as a serious case study

for EMC worldwide as a shared value. In a way, 'doing well by doing good,' Krishnamurthy adds.

What's the problem?

It's not that there isn't enough money or schemes for the poor in India, it's simply that the sheer size and scale and poor governance issues have made delivery highly complex and leaky. The only way to break the stranglehold is by using technology which is possible now because of the convergence of cloud, big data, affordable broadband and cheap tablet PCs. EMC's strength is in data storage technology and its real-time management, the last of the piece that could now revolutionize high technology healthcare delivery at affordable price.

"We are tying up with various small scale organizations which are producing gadgets which allow us to monitor things in the healthcare initiatives and also create opportunity to tie-up with larger players. We are looking for partners who can develop on top of our platform," Krishnamurthy says.

Giving Back

EMC started operations in India in 20003. In 2006, it became a Center of Excellence. It is now the largest among its other centers of excellence in the world.

'Giving back to society' is a common theme among IT and ITES companies because they see such a skew in basic human facilities. The difference is in how seriously they do it. The company says it has adopted 9 schools where employees are actively engaged.

EMC employees planting trees

EMC Gives Back program allows every employee to offer 3 days of their normal work hour every year to give back to society. With 5,000 people, it works out to 7,500 person-days a year. They have already built dozens of toilets, computer labs, in schools and orphanages around Bangalore. "If we can harness all this we can do wonders," Krishnamurthy says.

Employees also get to do 'speed mentoring' in a college in Doddaballapur, near Bangalore about career and employability. To contribute to academic alliance EMC has 350 colleges where it trains teachers, helps in creating curriculum in IT storage management, cloud among other things.

For environment sustainability, it has partnered with Sahas to train 100 schools in and around Bangalore on e-waste management. It is setting up e-waste bins in all these schools.

EMC is also proud of its new 'reusable customer boxes' initiative - customers can ship the box back to the company for reuse. It's interesting how organizations today not only have to think out of the box, they also have to reuse boxes.

The Green Smile

Picking up a theme for an airport in Bangalore is the easiest part since the city has been known as the 'garden city' of India. The tougher challenges started when the vision for the airport was set – to be the most environment-friendly airport in India.

Today, the six year old KIA, which is close to flying 13 million people this year, seems to have accomplished that vision: its terminal building was upgraded from silver to gold LEED rating by the Indian Green Building Council early 2014.

It has become the second airport in the world to achieve ISO 22301:2012 certification. This certificate follows months of stringent audit of corporate business continuity management system set by the British Standard Institutions.

KIA also won the Airport Carbon Accreditation Level 3 for CO2 emissions. The independent program has four levels: 'Mapping' (Level 1), 'Reduction' (Level 2), 'Optimization'(Level 3) and 'Neutrality' (Level 3+). It is the European standard for the assessment of airports' efforts to deal with and reduce carbon dioxide emissions.

With over 100 acres of green cover, 135 distinct variety of trees and plants and a hundred thousand square meters of lawn, KIA can afford to flaunt its landscape. It recently unveiled a Green Map –an industry best practice to create more awareness on various green initiatives.

Sustainability also includes the well-being of the people living around a facility. KIA engages with 35 villages that surround the airport facility and

provides preferential employment opportunities to people from there.

Firsts

Among the several firsts for an Indian airport, KIA recently partnered with Mahindra Reva Electric Vehicles Pvt. Ltd. to set up an electric vehicle (EV) charging infrastructure. It is the first Indian airport to have EV charging infrastructure in the country. The facilities are offered exclusively to Mahindra e2o customers, free of cost with an additional benefit of 20% discount on parking charges.

It is reported to be headed for self-sufficiency in water with its Water Master Plan which includes rejuvenating seven abandoned open wells. The groundwater table across Bangalore is plummeting but at KIA it went up by 1.5 meter because of recharging efforts of over four years. It has adopted a zero discharge concept, across its vast airport estate and is the first in India to use bio-fuel to run the airport vehicles.

On the threshold of its second major expansion drive with a new terminal and runway, clearly KIA has set its sustainability journey on a green path. With GVK group's Vice Chairman, Sanjay Reddy's leadership, KIA's sustainability impact can only get positive.

Challenges

The unexpected and unprecedented growth in passenger traffic from Bangalore has forced hectic expansion of the airport facilities. The current facility was built for 12 million passengers but is expected to run to 15 million in 2015 itself. The projected growth in the next decade is probably double this capacity. The big challenge for the leadership is its ability to match capacity to growth. Usually, the soft target during such frenetic pace is the environment.

The larger question is – how will the city cope with such fast growth in air traffic, especially the approach and exit to the airport. One possible solution is for the city to have multiple airports so that the environmental cost of commuting to the airport is minimized and KIA is not over-stretched.

For now, KIA can smile at its achievements along with those who notice the smile design of the terminal roof while landing into the city.

Redefining Impact Investing

By ***David James***

Climate Change is drastic and is causing a tectonic shift in global economies; companies and workers need new skills and analytical methods to adapt to it. Coupled with the financial contagion that started in 2007 this shift has created a new class of over qualified and under employed labour force. This is the new 'rich-poor' we rarely hear anyone talk about. Newer graduates and older workers have been chronically under-employed or non-employed. This new social crisis is our new normal.

This social and economic crisis has also thrown up creative minds that also see this as an opportunity to create a new world order. As financial markets reinvent themselves, these creative minds recognized an opportunity to finance projects or ideas under a new buzz concept called 'Impact Investing' in recent years. Impact investing seeks both a financial return and a measurable social impact. But the real impact investor is hard to find or pin down.

As an entrepreneur, I have been watching, with growing frustration, the incredibly broad range of investors that are eager to brand themselves as impact investors. One founder of a $100 million fund defines impact investment

as investing in a company to sell products or services to the poor. This has never been challenged and indeed **I feel that there is a schizophrenic relationship between achieving market rate returns vs. social impact.** Social impact is notoriously difficult to measure.

The intriguing question is whether investors can expect to receive risk-adjusted market-rate returns on their investments and to have real impact at the same time. Impact Investment must be broadened to include not only making a social impact but also economic impact. This distinction becomes starker in developing countries such as India where economic emancipation creates more jobs and moves poor up into the middle class, reducing social problems. Yet, valuation analysis revolves around a lot of micro-economic data, and excludes macro-economic data. Philanthropy investing is about improving the lives of the underserved and underprivileged.

My interactions with financial analysts in a few impact investment funds revealed that their analysis was skewed almost entirely towards the market rate of return.

As a social entrepreneur I could notice that the conversation about social impact was totally absent, perhaps even ignored.

To me, impact Investing is about value chain creation. For example, Kelly Born and Paul Brest ask the following questions:

(i) Does the investee enterprise produce more socially valuable outputs than would be available without it?

(ii) Does the investment increase those socially valuable outputs more than would otherwise happen without the investment?

I take this further

(iii) Does the investee enterprise produce more **economic** valuable outputs than would be available without it?

(iv) Does the investment increase those **economic** valuable outputs more than would otherwise happen without the investment?

As an entrepreneur, now in agri-business, some examples that impact the economic chain first, and then social outcomes, merit citing:

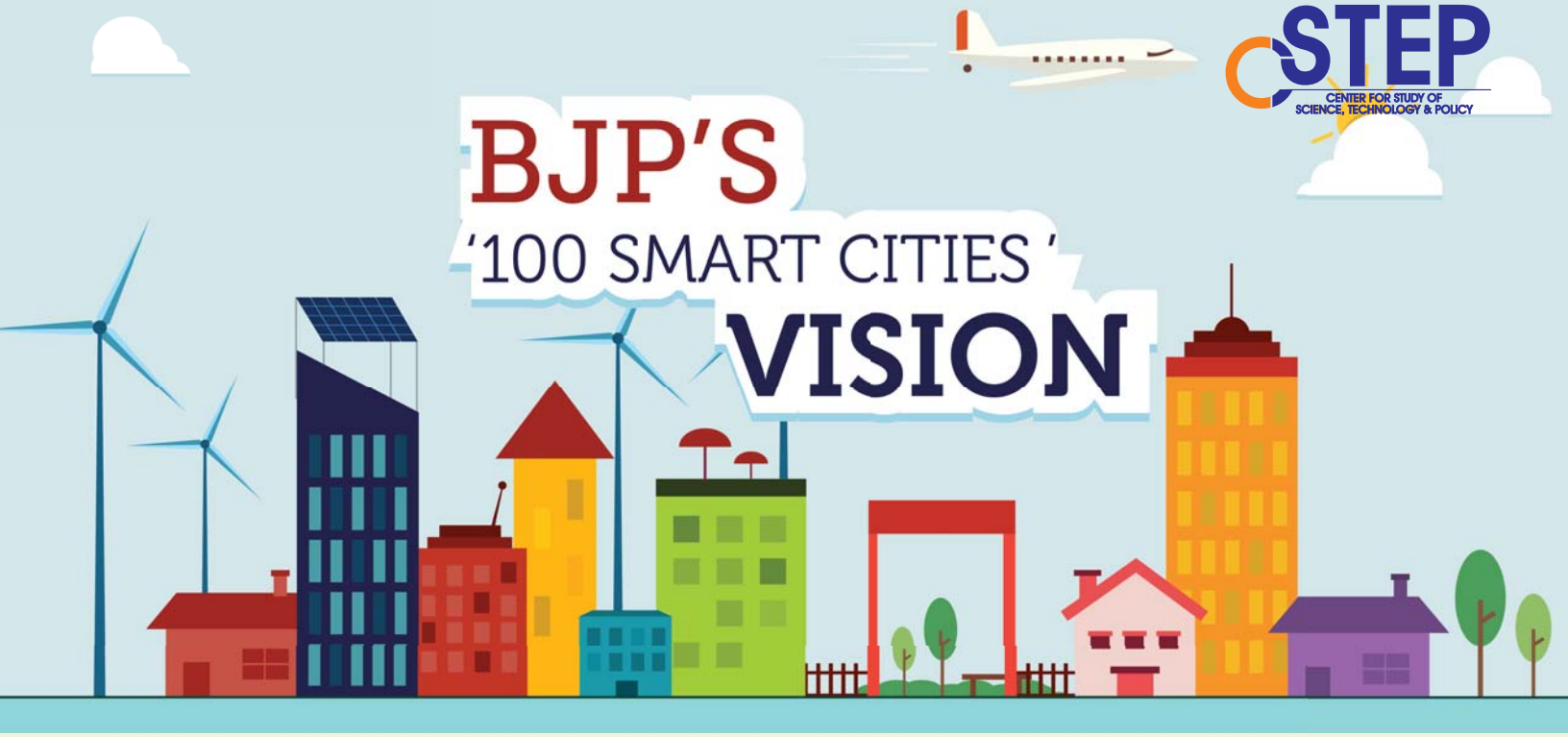
- India almost loses 30% of its grain and spices due to lack of cold storage. How much of an impact would investing in cold storage silos and supply chain make economically and socially?
- India is suffering from a diabetic pandemic. How much of the population would be positively impacted by investing in alternatives such as Stevia?
- New farming methods that significantly reduce water consumption, pesticide use, land use, and increase crop yields focused on the poor and marginalized farmer would be social investing. However, the business creating these methods and machines would be viable impact investment if the primary and intentional goals and metrics of the business were to reduce water, pesticides, and agricultural land.

By limiting impact investing to merely addressing the needs of the poor and marginalized, one ignores a wide range of activities that have a huge economic effect on larger populations and well-being of communities.

The article http://sustainabilitynext.in/pdf/Economic_Impact.pdf suggests a new agronomic theorem that suggests that incorporating macro-economic analysis would provide a more robust framework for impact investing.

By limiting impact investing to merely addressing the needs of the poor and marginalized, one ignores a wide range of activities that have a huge economic effect on larger populations and well-being of communities.

David James is a Bangalore-based 'Bioneer' and CEO of CholoroEarth. His company lies at the confluence of material science, green chemistry, agronomy and climate change. His mission is to deploy agricultural resources towards industrial applications. He is the finalist at YourStory's TechSparks30 2014.



Smart Decisions for a Sustainable City

By Shrimoyee Bhattacharya and Sujaya Rathi suggest smarter ways of using decision support frameworks for revamping India's existing cities

June 2014, Chennai: A Green Corridor for an ambulance created in Chennai cuts through 13 km of thick city traffic in less than 14 minutes with a heart to be transplanted.

May 2014, New Delhi: East Delhi came under the grip of 17 hour long power outage due to damage in electricity grid caused by a dust storm. This severely affected city life including disrupting critical services such as metro rail and water supply operations.

Two separate incidents, albeit of different magnitudes, turned out to be two completely opposite examples: one of a sensitive, smart city which values human life; the other of callousness at a time of emergency. Unfortunately, the first is a rare instance, while the latter is usually the fate of any incident needing timely and appropriate response in our cities. Such instances put the spotlight on issues to be addressed by India as it moves forward in creating a smarter urban future.

The Government of India's decision to build smart cities in India has started a public discourse on the concept of Smart Cities, its investment requirements and the need for making existing cities smarter.

The next logical questions that arise are: *what inputs are needed to convert our existing cities to Smart Cities and why a smart decision making platform is important for a sustainable city?*

How can our existing cities get smart?

There is no denying that there is an urgent need for our cities to get smart in order to become sustainable. If smart means efficient, then many a times it involves minimum cost, but a change in the way city governments and agencies work. Existing Indian cities have developed their own complex mechanism over a period of time and it is arguably difficult to turn them into smart cities overnight. However, making existing cities smarter is a safer bet for many reasons. The resource requirements in terms of land, water, energy, and infrastructure costs for new cities are huge. For instance, Portugal will need about $10 billion (more than Rs. 60 thousand crores) to complete Living PlanIT, a state of the art, brand new smart city.

Even with conservative estimates, the amount of Rs. 7, 060 crores allocated in this year's budget for 100 new smart cities is very minimal. Moreover, the economic and social sustainability plans for these cities, and the return on such a huge investment are yet to be worked out. On the other hand, Tier II and III cities of India present huge scope to be developed as smart cities.

A smart city should essentially aim to (1) better optimise its environmental resources - waste, water, energy, air quality, carbon footprint; (2) include sustainable urban and mobility planning - climate resilience, per capita green space, density, efficient, reliable and clean energy transport systems; (3) be economically resilient - productivity, strong backward and forward linkages, entrepreneurship and innovation, etc.; (4) develop human resources – education, creativity, knowledge-based institutions, attract and retain talent, inclusion; (5) provide better living conditions - income distribution, safety and health, access, etc.

The critical conditions that a smart city needs, in order to achieve the above are: (a) continuous information gathering and monitoring of its critical infrastructure and resources, (b) continuous citizen engagement, both direct and indirect, and (c) forward-looking and robust plans for the future. Achieving these critical conditions need a certain degree of preparedness in instruments such as connectivity network, data management systems, computing and analytics, and coordination between diverse systems and organisations that seamlessly work together to put a smart infrastructure in place. All of these pre-requisites can be achieved over a period of time.

There are ample examples of existing older cities adopting smartness. For example, Barcelona began using cloud-based services to make information available to its citizens. The city of Edmonton, Canada, presents interactive maps in its website to provide citizens with feasible route options during summer when large numbers of construction projects take place, creating road blocks and traffic congestion.

Where to start: A Smart Decision Support Platform is critical

The word 'holistic' may sound clichéd, but that is still the key to sustainable city planning. A robustly built and cutting-edge technology enabled decision support framework is a smart tool to enable holistic and long-term city planning. This will enable integrated assessment of various aspects (land use, water, energy, urban activities, and demographics), and planning of appropriate strategies and policies. Urbanisation patterns, growth, and land use influence the demand for urban services, while speciality features of various technologies influence the choice of infrastructure. A multi-dimensional assessment of various strategies and their alternatives is, therefore, critical to understand and analyse the implications of these strategies and the trade-offs involved. The framework should thus have the following:

Data repository – provide service providers with the capability of streamlining data and inputs from different sources (static as well as real time)and pool them into a computational system.

Powerful analytics - provide assistance in long term planning through assessment of impacts of different policy scenarios, to shape the city planning process. This will also provide potential inputs for mid-course policy correction for any particular department(s).

Informed decision making - inform urban activity using city data and analysis, thereby facilitating visual and tangible access to information to all stakeholders about their city, and thus, enabling them to take decisions more in sync with the changing dynamics of the city.

CSTEP is in the process of preparing a multi-sectoral decision support platform called DARPAN- Decision Analysis for Research and Planning. The results achieved so far are encouraging and the tool can be built further to be used in urban planning and policy making. For example, the upcoming Master Plan for Bangalore is an excellent opportunity to leverage on computation technology by capturing the huge amounts of data and information available on Bangalore. The result would be a new generation of city planning and decision making mechanism, which can potentially capture and respond to the ever evolving city systems.

A smart Decision Support Platform enables much needed logical flow between data analysis results and decision making. It instils transparent and equitable city planning and management rather than ad-hoc arrangements. Identifying the right points of intervention within established protocols in city planning and governance is important to start embedding smart-city thinking while minimising frictions.

Shrimoyee Bhattacharya

Sujaya Rathi

Shrimoyee Bhattacharya, Senior Researcher and Sujaya Rathi, Principal Research Scientist are researchers with the Center for Study of Science, Technology and Policy (CSTEP), Bangalore

Grameen Koota Upbeat on Microfinance Sector

The microfinance sector in India has not blossomed to its full potential as expected due to various factors including inadequate and visionless approach of the government and large financial institutions. However, recent initiatives have given some fillip but the difference between potential and what is on offer is huge. Yet, organizations such as Grameen Koota are trying to make a difference in their own way. Excerpts of a chat between Suchitra Jayaprabhu and GFSPL leaders Vinatha Reddy and Suresh Krishna

What's the unique nature of Grameen Financial Services Pvt. Ltd (GFSPL)

Grameen Financial Services Pvt Ltd. (GFSPL), popularly known as Grameen Koota, was born out of the need for timely and affordable credit to India's poor and low-income households. It offers a multitude of both financial and non-financial products and services to cater to every life cycle need of its clients.

The flagship loan product is the Pragati loan for income-generation activities. Besides this, loans are also provided for medical purposes, education, festivals and emergencies. In partnership with other external organizations, Grameen Koota also offers subsidized financing to improve clients' livelihood for the purchase of smokeless cook-stoves, construction of toilets, home repairs and improvement, obtaining water connections and water purifiers. Besides, in order to improve their social security Grameen Koota also offers health insurance and life insurance products, and development services such as socio economic development workshops (SEDs), awareness programs, vocational training, and health, water and sanitation workshops.

Grameen Kootais one of the first organizations to introduce microfinance in India and has also been instrumental in building the sector in the country.

Its area centric approach is what differentiates it from its competitors. It has always focused on being a regional player, since its inception and has established itself as a rural MFI with over 65% of its clientele coming from the rural segment. **Grameen Koota was the first MFI to introduce automation using the open-source technology, MIFOS and implement poverty progress index in the country.**

Grameen Koota continuously strives to understand the needs and challenges of its clients in order to offer wide range of financial products and development services to meet them. To name a few, its Water & Sanitation program, which recently crossed cumulative disbursement of loans worth $16.3 million making Grameen Koota as the only microfinance institutions worldwide to have taken water and sanitation loans at this level, and Jagruti, a one of a kind awareness generation program which has educating over 5, 00,662 members of Grameen Koota every week with a new topic, are a couple of initiatives which have made a huge difference in the lives of its clients.

How many have benefited so far and plans to increase more.

In the fifteen years of its operations, Grameen Koota has expanded to three States of India, with 222 branches spread across Karnataka, Tamil Nadu and Maharashtra. The operations cover over 6,30, 881 borrowers in both rural and urban locations with a loan portfolio of over Rs. 885.13 crore as on 31st August 2014.Considering its success in these regions, in the near future it plans to venture into couple of more regions. **Slowly and steadily, Grameen Koota wants to reach each and every corner of the country, understand their needs and cater those who have remained unreached even today with its products and services customized specifically for them.**

Who started this and what drove them to it?

Grameen Koota was visualized by Mrs. Vinatha M. Reddy in December 1996, inspired by the book 'Give Us Credit' by Alex Counts, President and CEO, Grameen Foundation USA. The book detailed remarkable stories of Bangladesh's poor who raised themselves out of poverty through the use of micro-credit during the microfinance movement, spearheaded by Nobel Laureate Professor Muhammad Yunus.

Founded in May 1999 with the support from seed capital funding received from Grameen Trust, Bangladesh, with the name 'Grameen Koota' (GK), now a division of GFSPL, as a project under the T. Muniswamappa Trust (TMT) a Public Charitable Trust.

Along with Mrs. Vinatha Reddy, Mr. Suresh Krishna who is currently the Managing Director of Grameen Financial Services also played a vital role in the growth of the company. Being the first employee of the organisation, Mr. Suresh has guided the company from its start-up stage as an NGO to a large NBFC with a strong focus on double

bottom line, ensuring high social impact and financial sustainability.

Under his guidance, GFSPL has received many awards and recognitions such as Microfinance Pioneer Award, SKOCH Financial Inclusion Award, the Seal of Transparency and MIX 2013 Socially Transparent And Responsible (S.T.A.R.) MFI.GFSPL is amongst the first 5 MFIs in India to get certified by Smart Campaign for meeting global client protection standards and the 2nd MFI to be certified by Truelift as "Achiever – Pro-poor MFI". **GFSPL has been rated with mfr2 by CRISIL, BBB+ by CRISIL and alpha minus for social performance by M-CRIL.**

Suggestions to make the micro-finance sector more vibrant by the government

Today India is the world's third largest economy (measured in terms of purchase power) after the USA and China. Looking at the demographic and urban-poor ratio in the country, half a billion Indians are still excluded from the formal finance sector. This led to the expansion of local micro finance sector in India.

The sector has grown through leaps and bounds. It now serves over 25 million clients and has been growing by 30-50 per cent every year. Parallely, practices followed by certain lenders have subjected the sector to greater scrutiny and need for stricter regulation by the government, which made Reserve Bank of India (RBI) bring micro finance companies under its purview and since then it has taken a series of measures for the industry.

Keeping the poor at center stage, the policies of the sector still need to be reoriented so as to develop and optimize the potential of such a large segment of the population and enable them to contribute in the growth process significantly in terms of output, income, employment and consumption.**There is a need for innovative and forward-looking policies, based on the ground realities of successful MFIs.** This, combined with a commercial approach from the MFIs in making micro finance financially sustainable, will make this sector vibrant and help achieve its single-minded mission of providing financial services to the rural poor.

In the past couple of months RBI has taken some major steps towards the upliftment of this sector. The recently proposed norms for setting up small and payment banks and the launch of "ThePradhan Mantri Jan Dhan Yojana", a two-phase financial inclusion programme by Indian government, have definitely raised hopes. **With the new government and evolved regulations, we are hopeful that there will be significant channelizing of investment in the sector which will result in further growth and development in India.**

To what extent have recent legislations or curbs hurting microfinance sector in India

Recent legislations and Government regulations are working as a boon for the microfinance industry. The new government is supportive of the sector and closely looking at enhancing financial inclusion in the country.

For example, the government's recent initiative to help them maintain growth and achieve scale and efficiency in their operations by creating India Microfinance Equity Fund (IMEF) of Rs 100 crore with SIDBI with the primary emphasis of providing equity and quasi equity to smaller MFIs.

Also, the recent policyon Business Correspondents (BCs) and the proposed norms that will help more than half microfinance institutions to convert into small banks, will also lead to manage a good perception and build trust with their customers as they will be more closely regulated by the RBI.

All these moves by the government are excellent news for the sector and will lead to further growth in the country.

Start-ups Bloom in Bangalore's Waste

by Kamal Raj, *Co-founder & COO*
www.reapbenefit.in

Two years ago, in October 2012, a previously veiled and little discussed problem suddenly exploded. Residents near Bangalore's largest landfill in Mandur blocked trucks from dumping the city's waste there, creating a chain of events which led to mounds of garbage piling up on the streets.

Between then and now, a lot has changed and lot has not. The severity of the crisis has been understood by the citizens and there has been a definite increase in the awareness of good waste management practices. A number of technology and service providers have also cropped up to present different solutions to process and recycle garbage and a handful of technology driven projects have been kick started.

But sadly, with the government failing to draw a road map for the city's waste management with unsuccessful implementation of waste segregation at source strictly and enacting policy for processing of waste, the city is still struggling with its garbage problem.

But is it possible to turn the waste crisis into an opportunity? During seminar on sustainability in 2012, where 2 graduate students from IIM-B had presented a study that projected Rs.1,200 crore business in waste per annum in Bangalore city alone! This might seem like a gold mine but to strike gold we need to prepare the ground first.

In 2011, Reap Benefit started with three youngsters collecting garbage from a neighbourhood in Bangalore and recycling it. In three years, Reap Benefit has grown from an NGO facilitating behavioural change in students of government schools to a social enterprise that has developed end-to-end solutions for solid waste management (SWM) and is strongly focusing on human-centered designs to promote sustainability.

The city's MSW (Municipal Solid Waste) can be broken into two sectors of waste generators. First, bulk generators (hotels, commercial, medical, retail sector and apartments) together contribute to almost 48% of the waste generation; second, which is the single largest waste producer – domestic residential complexes, which contribute to a whopping 52% of all waste.

Though the city administrator BBMP doesn't handle the waste from the bulk generator directly, it' still easier to handle the waste from bulk waste generators as they have centralised and dedicated team such as EHS (Environment Health and Safety), Green team, Green committee etc., through which SWM can be achieved. Mostly there is a campus present and a central process followed for waste management, it's not difficult to implement and sustain SWM initiatives. To site an example, in 2013, Reap Benefit, along with CII (Confederation of Indian Industry), organized WOW (War On Waste) project and had conducted SWM auditing workshop for about 130 company representatives in 8 industrial clusters. The idea behind this exercise was to train and build competencies of the EHS teams on SWM and them managing it in a sustainable manner.

Many industries and their heads participated to spearhead the campaign and set examples. This was possible as the initiative trickled down from the top management. **On the contrary, many companies do not see SWM as an important and integral part of their company policies or ISO 14001 standards and continue to send their waste to landfills.**

Even though the SWM sector seems like a dark hole without much to offer it has attracted many young professionals and college pass outs to venture into this space and start social enterprises.

We at Reap Benefit have been advocating processing of waste within the campus or in-site treatment such as composting and biogas which will not only act as decentralised systems but also bring down the burden on the landfills. There is a financial return that can be expected from such best practices as resource recovery happens.

In campuses, as it's a closed boundary with norms to follow, we feel while implementing SWM, the approach has to be human-centered and engage the users to practice SWM at the very first level by throwing the respective waste into its respective bins. **One such experiment using transparent segregated bins proved to be successful as they were intuitive and we were able to achieve 80% segregation during a music festival in Pune.** Such innovations are required to streamline to SWM processes. This is easily adoptable in a closed institutional setup.

Why BBMP has failed

Moving to domestic residential sector, the BBMP services this sector with door-to-door pick up. The BBMP has contracted out private players to do the servicing. The challenge here is multi-fold, to name a few:

- Segregation at source isn't implemented well.
- Poor route coverage by the BBMP which leads to garbage not being picked up and landing on the road creating a black spot.

Reap Benefit holds community interaction

- The nexus between the contractors, BBMP and the elected representatives which has led to unsuccessful SWM.

The BBMP spent Rs.334 crores in 2013 to collect and transport the mixed garbage to landfill and is in need for more money to address this problem. While there has been no milestone achieved in terms of treatment technologies for MSW, the government in vain is trying to locate another landfill instead of formulating and implementing stringent policies for the residential sector. Amidst all this negativity, there exists a positive side to it as well. That is the informal sector of waste pickers, kabadiwalas and a robust recycling industry which is capable of recycling up to 80% of dry waste that is being generated. In 2012, during our field research of 3 wards in Bangalore, we were able to draw a direct correlation to the fact that **despite of the BBMP having invested in SWM infrastructure like transportation vehicles, manpower, DCWW (Dry Waste Collection Centres), separate SWM cell, land etc, the entire initiative is a failure because of the fact that the BBMP has not been able to implement a solid plan and comprehensive policy that uses these resources effectively.**

Even though the SWM sector seems like a dark hole without much to offer it has attracted many young professionals and college pass outs to venture into this space and start social enterprises. In Bangalore alone there are about 10-12 for-profit organizations such as Reap Benefit that are working at various levels of SWM addressing specific problems. This has encouraged a healthy environment for start-ups to bring in fresh ideas and solution to the table. Some examples are home composting solutions to recycled raw material for 3D printing to mobile applications.

The sector is growing and is definitely offering lucrative business opportunities for interested individuals/organizations. With recent 'Swatch Bharat' campaign, there has been a lot of interest generated, which reflects in the number of initiatives taken up by individuals and organizations.

5th Edition

WASTE MANAGEMENT SUMMIT 2014

Resource Management for Sustainable Future

Confederation of Indian Industry

16 & 17 December 2014

Objectives

- Develop common platform for all key stakeholders to discuss issues and challenges of waste management
- Provide opportunities for companies to showcase latest products and technologies
- Envisage pathway for waste management movement in the country through combine efforts of industries, regulatory bodies, policy makers, technology consultants and service providers

Focus Areas

- Approach towards Resource Management
- Promoting "Waste to Wealth" and "Waste to Energy" concepts
- Dedicated session on sector-wise waste generation issues, challenges and it's surmount
- Corporate Initiative and success stories on "Resource Conservation"

Who Should Attend?

- Manufacturing & Service Industry Personnel
- Waste Management Facilities and Environment Consultants
- Hospitals, Hotels, IT Sectors
- Technology and service providers
- Academicians, Educational Institutions, NGOs etc.

Venue

Palladium Hotel
(Imperial Hall)
462, Senapti Bapat Marg
Lower Parel, **Mumbai**-13
Ph: +91 (22) 6162 8000

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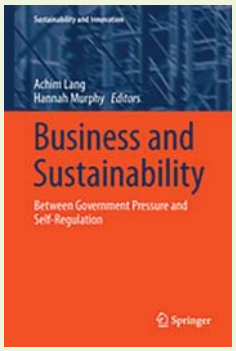
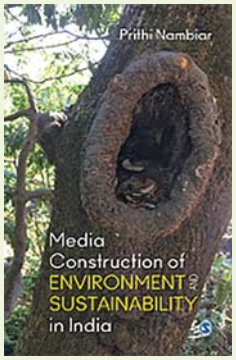


Business and Sustainability: Between Government Pressure and Self-Regulation

By Achim Lang, Hannah Murphy, Springer, September 2014

Demands for sustainability policies have set new challenges for business both on the individual firm level and on the level of organized business interests. This edited volume brings together economic, social, environmental, and cultural dimensions of sustainability that comprise different challenges for business processes and activities. The aim is to develop an overarching framework to the study of sustainability and business and to advance an interdisciplinary analytical perspective. The book establishes a balanced account that equally represents business as problem causers as well as problem solvers, and therefore responds to the urgent need to investigate the intersection between sustainability issues and business participation.



Media Construction of Environment and Sustainability in India

By Prithi Nambiar, Sage Publishers India, September 2014

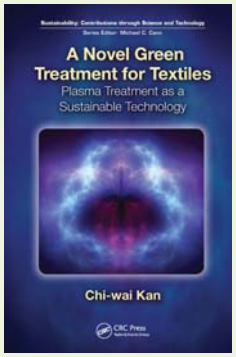
The book analyses the role of media and communication in negotiating the meaning of environment and sustainability in the developmental context of India. As part of the global development discourse, it has become necessary to refocus on the meanings attributed to environment, sustainability and sustainable development at the local and national level. The impact of these globally generated imperatives on a democratic, fast-developing nation like India is determined by the extent to which meaning negotiation through discourse aids their acceptance within society.

The book presents a theoretical framework against which the role of media and communication is explored and illustrated through textual analysis and examination of interview data. The uniquely theoretical and practical perspective on the discursive construction of these concepts will be of immense value for policy makers, development and media practitioners, scholars and students of media and communication.

Handbook of Research on Pedagogical Innovations for Sustainable Development

By Helen E Muga, Ken D Thomas, IGI Global, March 2014

Education is a key component for progress. It is imperative that society has access to new strides made in the area of sustainability so that current global challenges are resolved. Handbook of Research on Pedagogical Innovations for Sustainable Development brings together case study examples in the fields of sustainability, sustainable development, and education for sustainable development. This book will be an essential reference for educators, teachers, trainers at all levels of education, sustainable development practitioners, education policy makers, and the public at large.



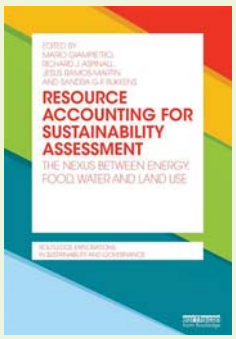
A Novel Green Treatment for Textiles: Plasma Treatment as a Sustainable Technology

By Chi-wai Kan, CRC Press, September 2014

Industries worldwide have been impacted by environmental regulations, economics, and ultimately consumers, which has led to more thought about the development of sustainable products. The textile industry is no exception. The preparation, dyeing, and finishing of textile fibres requires large amounts of water and other chemicals which may be toxic or hazardous. Green chemistry along with other green technologies may now play a leading role in this process. This book emphasizes the importance of plasma treatment as a green and sustainable technology.

The book also discusses the plasma treatment of textile fibres and its environmental, economic, and social benefits. The book reviews the general properties of textiles and provides a description of the current treatment methods typically used today. The author then introduces the concept of plasma and its application in treating textile materials. The application of plasma as a pretreatment as well as a treatment in dyeing textiles is discussed.

The book summarizes the application of plasma treatment in the printing and finishing of textiles. Also explored is the concept of sustainability and its role in the development of plasma treatments in textile wet processing. The 12 Principles of Green Chemistry are incorporated throughout the book.



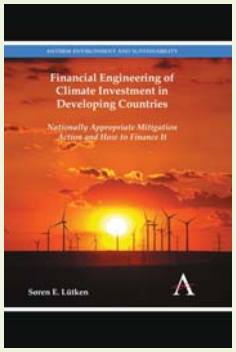
Resource Accounting for Sustainability Assessment: The Nexus between Energy, Food, Water and Land Use

By Mario Giampietro, Richard J. Aspinall, Jesus Ramos-Martin, Routledge, May 2014

The demands placed on land, water, energy and other natural resources are exacerbated as the world population continues to increase together with the expectations of economic growth. This, combined with concerns over environmental change, presents a set of scientific, policy and management issues that are critical for sustainability.

Resource Accounting for Sustainability Assessment: The nexus between energy, food, water and land use offers an approach for multi-scale, integrated assessment of this nexus. It presents a comprehensive and original method of resource accounting for integrated sustainability assessments. The approach is illustrated with three detailed case studies: the islands of Mauritius, the Indian state of Punjab, and the energy economy of South Africa. The relationships between flows of goods, services and materials in these case studies offer valuable insights. The book provides a much needed quality control on the information used in deliberative processes about policy and planning activities.

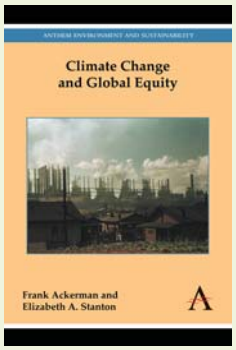
This innovative book will be of interest to researchers, students and practitioners in the fields of sustainability science, international development, industrial ecology, sustainable resource management, geography and ecological economics.



Financial Engineering of Climate Investment in Developing Countries: Nationally Appropriate Mitigation Action and How to Finance It

By Soren Ender Lutken, Anthem Press, June 2014

The Nationally Appropriate Mitigation Action (NAMA) is the new kid on the block in the battle against climate change. The NAMA is the most decisive instrument devised to address the fact that today the only source of growing emissions are the world's developing countries. But as it is based purely on voluntarism it crucially depends on financing models that can lift the concept off the ground. This book provides the first insights as to how this concept can deliver on its promise ? and challenges some of the fundamental mantras in international climate change collaboration.

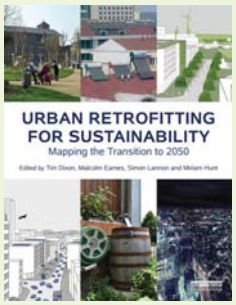


Climate Change and Global Equity

By Frank Ackerman, Elizabeth A. Stanton, Anthem Press, June 2014

Ambitious measures to reduce carbon emissions are all too rare in reality, impeded by economic and political concerns rather than technological advances. In this collection of essays, Frank Ackerman and Elizabeth A. Stanton show that the impact of inaction on climate change will be far worse than the cost of ambitious climate policies.

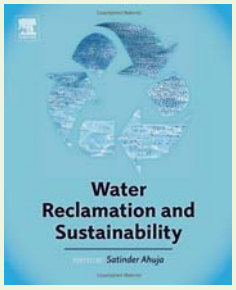
After setting out the basic principles which must shape contemporary climate economics, Ackerman and Stanton consider common flaws in climate change policy - from mistaken assumptions that dismiss the welfare of future generations and anticipate little or no growth in low-income countries, to unrealistic projections of climate damages that dismiss catastrophic risks - and offer their own insightful remedies. They question the usefulness of conventional integrated assessment models (IAMs) that model the long-term interaction between economic growth and climate change, and propose an alternative in their Climate and Regional Economics and Development (CRED) model.



Urban Retrofitting for Sustainability: Mapping the Transition to 2050

By Tim Dixon, Malcolm Eames, Miriam Hunt, Simon Lannon, Routledge January 2014

As concerns over climate change and resource constraints grow, many cities across the world are trying to achieve a low carbon transition. Although new zero carbon buildings are an important part of the story, in existing cities the transformation of the current building stock and urban infrastructure must inevitably form the main focus for transitioning to a low carbon and sustainable future by 2050. *Urban Retrofitting for Sustainability* brings together interdisciplinary research contributions from leading international experts to focus on key issues such as systems innovation, financing tools, governance, energy, and water management. The chapters consider not only the knowledge and technical tools available, but looks forward to how they can be implemented in real cities by 2050.

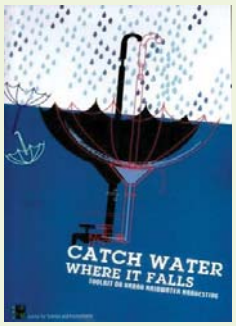


Water Reclamation and Sustainability

By Satinder Ahuja, Elsevier Science Publishing Co Inc, June 2014

Many hydrological, geochemical and biological processes associated with water reclamation and reuse are poorly understood. In particular, the occurrence and effects of trace organic and inorganic contaminants commonly found in reclaimed water necessitates careful analysis and treatment prior to safe reuse. Water Reclamation and Sustainability is a practical guide to the latest water reclamation, recycling, and reuse theory and practice. From water quality criteria and regulations to advanced techniques and implementation issues, this book offers scientists a toolkit for developing safe and successful reuse strategies. With a focus on specific contaminant removal techniques, this book comprehensively covers the full range of potential inorganic/organic contaminating compounds and highlights proven remediation methods.

Socioeconomic implications related to current and future water shortages are also addressed, underscoring the many positive benefits of sustainable water resource management. * Offers pragmatic solutions to global water shortages* Provides an overview of the latest analytical techniques for water monitoring* Reviews current remediation efforts* Covers innovative technologies for green, gray, brown and black water reclamation and reuse



Catch Water Where It Falls - Toolkit on Urban Rainwater Harvesting

By Gita Kavarana, Sushmita Sengupta, Centre for Science and Environment

This is Centre for Science and Environment's new hands-on-book, based on a survey with exhaustive case studies on how rainwater harvesting (RWH) is being implemented, across India – in residential, institutional, and industrial and commercial segments.

The book includes cases that you one can relate to with all the details needed to implement RWH, right from helping to prepare water budget, harvesting for storage/ recharge to maintenance and beyond.

Water is what urban India is fighting for today. Cities across the country are facing the crippling effects of acute water scarcity. There is hardly any city that can boast of a 24-hour water supply. Groundwater tables are falling rapidly, centuries-old water bodies have disappeared or are severely polluted. Urban floods are becoming a regular phenomenon during monsoons. In addition to this, most of our rivers have become carriers of urban filth.

This is giving rise to a nightmarish scenario in which urban populations, mainly the urban poor, are at the receiving end. The toolkit also helps to re-train and re-skill a generation of Indians who have lost touch with nature's most precious gift – rain.

The book has also documented the experiences of diverse segments, and most importantly, the new innovations adopted, from the design of filters to rainwater harvesting sumps etc. This innovation is what the society needs as it rebuilds its knowledge of living with nature.

The book offers easy solutions to address this serious issue, and many are already implementing them

Global Agro Meet

06-07 November 2014, Adlux International Convention Centre, Cochin

http://www.cii.in/

2nd International Conference on Improving Water Use Efficiency in the Urban Sector to Address Climate Change

14 November 2014, Jacaranda Hall, India Habitat Centre, New Delhi

http://www.cii.in/

7th Annual Manufacturing Conference 2014 "Make in India: Rejuvenating Indian Manufacturing"

14-15 November 2014, Hotel Vivanta by Taj, M G Road, Bangalore

www.cii.in

Greenco Best Practices Award and Waste Management Summit 2014

20-22 November 2014, Pune

www.cii.in

CII Agro Tech 2014 India's Premier Biennial Agro Technology & Business Fair

22 - 25 November 2014, Parade Ground, Chandigarh, India

http://www.cii.in/

EnviroTech 2014

03 December 2014, Chandigarh

http://www.cii.in/

Tropical Ecology Congress-2014

10th to 12th December 2014, New Delhi

http://www.jnu.ac.in/conference/tec2014/

International Conference on Energy, Environment, Materials and Safety

10th to 12th December 2014, Kochi

http://iceems.cusat.ac.in/index.php

International Conference on Environment and Energy

15th to 17th December 2014, Hyderabad

http://www.icee2014.in

Waste Management Summit 2014

16-17 December, 2014, Mumbai

http://www.cii.in/

Commodity Supply Chain 2014: Agriculture, Metal and Precious goods

23 January, 2015 India

http://www.cii.in/

Training Programme on Clean Air and Sustainable Transportation Strategies for Livable Cities
November 10 – 12, 2014
http://www.cseindia.org/content/training-prog-clean-air-sustainable-transport-strategies-liveable-cities

Training Programme for Environmental Managers
November 10-14, 2014
http://www.cseindia.org/content/training-programme-environmental-managers

One Week Advanced Training Program on Pollution Monitoring Techniques and Instrumentation
November 17 – 21, 2014
http://www.cseindia.org/content/one-week-advanced-training-program-pollution-monitoring-techniques-and-instrumentation

Training Programme on Urban and Industrial Wastewater Treatment
November 24-28, 2014
http://www.cseindia.org/content/training-programme-urban-and-industrial-wastewater-treatment

CSE's short-term EIA training programme on EIA of road and highway projects
November 10, 2014
http://www.cseindia.org/content/cse%E2%80%99s-short-term-eia-training-programme-eia-road-and-highway-projects

Science and Management for Sustainable Living
www.bhoomicollege.org

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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