

Yes, says Paul Hawken, author of 'Drawdown - The Most Comprehensive Plan Ever Proposed to Reverse Global Warming' if most of the 100 solutions suggested in the book are implemented by 2050. The good news is, most of the solutions already exist

By Benedict Paramanand

he subtitle of the book, he says, is deliberately made to sound brash. "We chose that description because no detailed plan to reverse warming has been proposed. There have been agreements and proposals on how to slow, cap, and arrest emissions, and there are international commitments to prevent global temperature increases from exceeding two degrees centigrade over pre-industrial levels."

The book is not a hallucination of an environmentalist-entrepreneur. It is based on meticulous research by 70 leading scientists and policymakers around the world from 22 countries. They came together to offer a set of realistic and bold solutions to climate change as part of a three-years project.

The book's blurb states: "Drawdown maps, measures, models, and describes the 100 most substantive solutions to global warming. For each solution, it describe its history, the carbon impact it provides, the relative cost and savings, the path to adoption, and how it works. All solutions modeled are already in place, well understood, analyzed based on peer-reviewed science, and are expanding around the world."

FEATURES 1 - 15

Sustainability Services is \$ One Billion Opportunity
Hasiru Dala Turns Ragpickers into Entrepreneurs
Greater Malabar Initiative to Promote
Local Innovation for Local Problems
Carbon Masters Bio-CNG Outlet in Malur

NEWS 16 - 26

Yes Bank Raises Media Fellowships to 500
Isha Launches National Rally To Save Rivers
Project Tuymai Validates SANITECH Tool
Survey Finds Govt. School Teachers Highly Committed
Bookshelf / Courses / Events





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.

Editor Benedict Paramanand

Editorial Advisors

Pradeep Kashyap Founder & CEO, MART

Madan Padaki CEO, Head Held High

Vasanthi Srinivasan Faculty, *IIM Bangalore*

H.S. Ganesh Keerthi
Design

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

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

www.sustainabilitynext.in © Rishabh Media Network

Subscribe to sustainabilitynext

from



http://www.magzter.com/IN/ManagementNext-Media-/ Sustainability-Next/Business/

Blueprint Already Exists

During the research process the author says: "We found a plan, a blueprint that already exists in the world in the form of humanity's collective wisdom, made manifest in applied, hands-on practices and technologies. Individuals, communities, farmers, cities, companies, and governments have shown that they care about this planet, its people, and its places. Engaged citizens world over are doing something extraordinary. This is their story."

Surprisingly, the author makes one believe that reversing global warming doesn't seem like a mega effort. "The solutions exist, are economically viable, and communities throughout the world are currently enacting them with skill and determination. If deployed collectively on a global scale over the next thirty years, they represent a credible path forward, not just to slow the earth's warming but to reach drawdown, that point in time when greenhouse gases in the atmosphere peak and begin to decline. These measures promise cascading benefits to human health, security, prosperity, and well-being—giving us every reason to see this planetary crisis as an opportunity to create a just and livable world."

Highlights

- The number one solution, in terms of potential impact? A combination of educating girls and family planning, which together could reduce 120 gigatons of CO₂ - equivalent by 2050 — more than on and offshore wind power combined (99 GT). It is the 1.1 billion fewer people that are going to do the carbon work?
- Reduced food waste and plant-rich diets on their own, beat solar farms and rooftop solar combined.
- Farmland restoration: There's over a billion hectares of abandoned land all over the world. They can be regenerated using animals, using cover, using no-till. It could become the big carbon sink.

Despite the 100 workable solutions, one thing not in the researchers' hand is assessing the carbon benefit of absence of war or peace in the next 30 years.

What about the Trump effect? Hawken says federal governments in the US have had little impact on climate issues.

Top 10 solutions to climate change

Total gigatons of CO2-equivalent emissions that could be reduced by 2050

SOLUTION		PLAUSIBLE SCENARIO		DRAWDOWN SCENARIO		OPTIMUM SCENARIO
Refrigerant Management	1	89.74	2	96.49	3	96.49
Wind Turbines (Onshore)	2	84.60	1	146.50	1	139.31
Reduced Food Waste	3	70.53	4	83.03	4	92.89
Plant-Rich Diet	4	66.11	5	78.65	5	87.86
Tropical Forests	5	61.23	3	89.00	2	105.60
Educating Girls	6	59.60	7	59.60	8	59.60
Family Planning	7	59.60	8	59.60	9	59.60
Solar Farms	8	36.90	6	64.60	7	60.48
Silvopasture	9	31.19	9	47.50	6	63.81
Rooftop Solar	10	24.60	10	43.10	13	40.34

Source: Project Drawdown



"States have led; cities have led, but never the federal government. It's just that people in the United States think that they're the leaders on this stuff. They're not. It's Germany, China, France, Denmark."

Drawdown 2

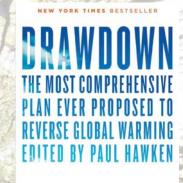
Even before the shock of the author's brazen optimism sinks in, Hawken has announced a sequel. He has started work on Drawdown 2 and expects to add 60 more solutions – "things that are nascent, on the horizon or just below the

horizon. They are game-changers, a lot of them. Some of them will fail. It's hard to say which will or won't," He said.

"It's unrealistic to think that this is our portfolio for the next 30 years. It's not true. That's why the next book is important — one out of five or six of these [future solutions] is really going to make a difference." Paul Hawken told David Roberts of Vox in a recent interview.

Paul Hawken is an environmentalist, entrepreneur, author and activist. He has dedicated his life to environmental sustainability and changing the relationship between business and the environment. He is one of the environmental movement's leading voices, and a pioneering architect of corporate reform with respect to ecological practices.

His work includes founding successful, ecologically conscious businesses, writing about the impacts of commerce on living systems, and consulting with heads of state and CEOs on economic



development, industrial ecology, and environmental policy. Paul is Executive Director of Project Drawdown, a non-profit dedicated to researching when and how global warming can be reversed. The organization maps and models the scaling of one hundred substantive technological, social, and ecological solutions to global warming.

His new book entitled Carbon; The Business of Life is going to be published by Penguin Random House in 2018.

In 2014 he was named one of the three Pioneers of Sustainability along with Professors Peter Senge and Michael Porter.

http://www.drawdown.org/the-book

8th Annual

SICI 2017

Sustainability in Design & Construction India

17 - 18 August 2017; Conference | 16 - August 2017; Workshop Vivanta by Taj, M.G.Road, Bangalore

Researched & Developed by



Confirmed Speakers



Ashok B Lall **Principal Architect** Ashok B Lall Architects



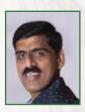
Sanjay Seth Senior Director of the Sustainable Habitat Division The Energy and Resources Institute (TERI)



Tan Szue Hann Council of the Singapore Institute of Architects **Chairman of Sustainability**



Saurabh Diddi **Energy Economist Bureau of Energy Efficiency**



Mr. Selvarasu **Managing Director LEAD Consultancy** Services



Henriette Faergemann Counselor Environment **Energy & Climate Change EU Delegation to India**



Anup Naik Director - Architecture **Space Matrix Architects & Planners**

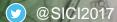


Ajit Sabnis National President **Association of Consulting** Civil Engineers (India)

For attending, call:

Jaisimha Das, DID: +91 80 4933 1001 | Email: Jaisimha.das@nispana.com

www.nispana.com/sid





• 5 DAYS • 1 CONFERENCE • 6 WORKSHOPS • 1 VENUE

13 - 17 November 2017, Singapore

Designed for the global electric power & energy industry, POWER WEEK provides 5 days of networking opportunities, consisting of 2-day conference as the focal event, 6 workshops, multiple case studies, expert views, and valuable insights on market outlook.

Meet your industry peers from electricity regulators, national power companies, renewable & IPPs, investors and suppliers - all at one platform. It would serve as an opportunity to engage with top industry players from around the globe. With the vast range of participants at this exclusive event, learn about the success strategies and pitfalls of well-known power projects, through our intense case studies. With valuable insights on power market economics, policy & regulations, technology transfer, environmental impacts, fuel supply sources, renewable / hydro / gas to power developments, PPAs, investment & financing, energy efficiency, smart grid, energy storage, power contracts and many more from C-level expert speakers & attendees, POWER WEEK is certainly an event not to be missed!

This year's conference will address cutting edge topics with **Real Examples** and **Case Studies** including:

Date	Program
14 – 15 November 2017	Power Week Main Conference
7 – 10 November 2017	Workshop A: Power Purchase Agreement (PPA)
13 November 2017	Workshop B: Energy Storage & Smart Grid – Technologies and Solutions
13 November 2017	Workshop C: Solar Financing – Improving Liquidity to Solar PV Projects
16 November 2017	Workshop D: Power Market Economics – Modelling Tools and Value Drivers
17 November 2017	Workshop E: Understanding Electric Power Contracts
20 – 23 November 2017	Workshop F: Mastering Renewable & Alternative Energies

www.power-week.com

Our Supporters & Partners

Produced by

















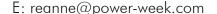


















Sustainability Services Ready for Take-off

As spending on sustainability engagement is expected to touch \$1 billion by 2019, Nitin Kalothia, Director, Sustainability Initiatives Practice, Frost & Sullivan, discusses opportunities and challenges with SustainabilityNext

What's Frost's view on how India is tackling Climate Change? What are your suggestions to make it better?

Climate change is one of the greatest challenges of this era. The consequences of this threat, if not we, will certainly be borne by the future generations. Combating climate change is therefore foreseen as the top priority globally. India in this regard has long been committed to United Nations (UN) towards tackling climate change and has taken certain serious steps to address its own greenhouse gas emissions – *Pledge at Copenhagen, Ratifying Paris Climate Change agreement*. Back home, the focus has been towards creating robust policies and action plan.

The National Action Plan on Climate Change (NAPCC) is a comprehensive action plan outlining measures on climate change related adaption and mitigation while simultaneously advancing development. Studies suggest that with the existing policies and measures, India is set to achieve its Nationally Determined Contribution (NDC) emission intensity target. With the continued expansion of renewable capacity and implementing the draft Electricity Plan, India could even overshoot the non-fossil capacity target set in the NDC and it is expected to achieve 57% against 33% target by 2027.

As India moves into the implementation phase to meet the commitments, the key areas to be looked at are one the active participation from multiple stakeholders, both business and government sectors coming together to put solutions into place. For renewable energy, affordable and available financing is the key to enable renewable energy to compete with fossil fuels. India further needs to strongly push for Climate Technology Centre and Network (CTCN) in order to have improved capacity that would help in generating good adaptation action plans to combat climate change.

What are the trends in how Indian businesses are addressing sustainability – why is the uptake so lukewarm?

In simple terms, sustainability for businesses means improving their bottom line results and at the same time not harming the society or the environment in which they operate. Businesses in India across industry sector (*lead by the automotive, oil & gas, engineering, IT/ITES sector*) are emphasizing sustainable operations to optimize their processes and leverage the advantage in the form of revenue growth, cost reduction and tackling regulatory risks. Over the last decade, there has been an increasing trend in sustainability performance disclosure by Indian enterprises, which is an indication of how the companies are looking at evolving as sustainable enterprises. **Under**

the Carbon Disclosure Project (CDP), India saw a 55% increase in the reporting from Indian companies in the periods from 2007 to 2015, similarly the Global Reporting Initiative (GRI) received 88% more sustainability disclosures from Indian businesses, in the same period.

While on one hand we see growth in companies believing in sustainability, on the other hand there is still a very large mass of businesses in India that are yet to employ sustainability methodologies into their operations. The main reason for the low acceptance could be of two-fold, one the lack of understanding on how to collect, collates and report the data. Although CSR initiatives are included in their annual reports, the environmental data gathering is still at a nascent stage. The second reason is the limitation of the existing internal systems to effectively measure, track and assimilate the sustainability impacts into corporate strategy and operational objectives.

Should the government – SEBI make it mandatory for all listed companies to start filing integrated reports?

The concept of integrated reporting is being discussed at various international forums. Today, an investor seeks both financial as well as non-financial information to take a well-informed investment decision. **SEBI in its recent circular in February 2017 is underpinning the top 500 listed companies to voluntarily adopt Integrated Reporting (IR).** The agenda is to provide shareholders and interested stakeholders with relevant information that is useful for making informed decisions. This is foreseen as the next step to move away from companies making separate financial and non-financial disclosure statements. Experts see this as pathway for policy-makers and regulators who are seeking to induce the corporate sector to acknowledge and manage the environmental and social externalities of their business operations and to make their governance processes more robust and transparent. This would also create the need to adopt responsible business practices in the interest of the social set-up and the environment which is vital for financial and operational excellence.

What is the size of business opportunities emanating from sustainability services in the next 5 years?

A decade ago sustainability services didn't exist as a separate category of engagement. The main reason being, top emerging economies like India and China were not big spenders on sustainability. However, today with the sustainability solutions providing unique, data driven insights, the market is transforming. The forecast show that the spending on sustainability engagement will grow from \$877 million in 2015 to \$1 billion in 2019 (reported by Verdantix).

Today, the entire business value chain is interconnected, and with the focus on new technology, innovation and product stewardship, sustainability engagement is perceived as an emerging service offering. Further, the push from regulatory policies and **government mandate will provide an impetus to the trend of adopting sustainability as a competitive advantage tool.** As more businesses become informed, and experience the value from sustainability solutions, the market adoption of sustainability engagements will grow tremendously.



Where Wastepickers Become Entrepreneurs

By Marwan Abubaker

Been engaluru's Citizens have looked at wastepickers, popularly called ragpickers, with disdain. Even if some acknowledge their constribution to the city's cleanliness they don't think wastepickers have or need an identity of their own. Nalini Shekhar, Shekhar Prabhakar and Marwan Abubaker thought otherwise. They set up Hasiru Dala – green brigade in 2011. Today, they are a force to reckon with – they even won the 2016 Environment Award from the Karnataka government. The team brings rich experience in community service, management and operations.

Apart from their regular chore of picking up waste that has some value, Hasiru Dala believes that wastepickers have a good potential to unleash their entrepreneurial potential if right amount of training and support are provided to them. It undertakes skill upgradation through multiple training programs.

The focus areas of training is upgradation of skills in management and technical competencies in organic waste management, mushroom farming, terrace gardening services, providing professional waste management service for large and small events, zero waste events service and drivers' training for commercial vehicles. In collaboration with Jain University and Waste Wise Trust, Hasiru Dala has developed a **Scrap Dealer Certification program**, a first of its kind training program.

It also offers managerial support for Dry Waste Collection Centres (DWCC). The dry waste (paper, plastic, metal, glass) is brought to their respective DWCC in every ward.

The Bangalore Municipal body is in the process of setting up 180 such centres shortly. They have created 50 entrepreneurs who have employed 500 people.

All waste pickers have government issued ID card that includes Adhaar card. With this they are able to access healthcare facilities and even loans for the expansion of their trade.

Library

The objective of BUGURI, Hasiru Dala's Community Library initiative, is to create a comfortable space for dialogue with children through the written and illustrated words. It is a medium to bring the world to them, help them understand it in their way, and in the process, build their unique voice.

The library houses over 600 books in four different languages (English, Hindi, Kannada and Tamil). It caters to 200 kids and has weekly read aloud sessions, arts-based activities, game time, and theatre workshops.

Policy Advocacy

Hasiru Dala has been advocating inclusion of informal waste workers in solid waste management services at municipal and state level. Through Hasiru Dala's effort more than 7000 wastepickers have been enumerated and given BBMP identity cards. In addition, Hasiru Dala advocates for inclusion of waste workers in various central and state government schemes in collaboration with Alliance of Indian Wastepickers. In 2017, Social Justice Department through National Safai Karmachari Development Corporation (NSKFDC) has included wastepickers as its beneficiaries to avail all the schemes set up by them

Passionate Founding Team

Nalini Shekar has had the experience of working with waste pickers in Pune before her venture in Bengaluru. She is a pioneer in advocating for wastepicker rights. She has trained hundreds of waste pickers, municipal officials and elected representatives on zero waste practices and integration of informal workers in solid waste management. Nalini lived in the US for a decade working on human trafficking and child labor issues.

Shekar Prabhakar, an IIT Madras and IIM Calcutta alumnus, has extensive experience in teaching and product and solutions development. His mandate is to scale up Hasiru Dala's operations.

As a co-founder I am responsible for management of the Waste Picker Franchise teams. I have twelve years experience across diverse sectors including agriculture, waste management and community radio services. I'm an active member of the Solid Waste Management Roundtable (SWMRT) in Bangalore that works to promote decentralized waste management in the city. I have co-authored a paper on the 'Informal Waste Workers Contribution in Bangalore', to determine their economic contribution to the city.

Future Prospects

Hasiru Dala decided to start providing waste management services to bulk generators by forming wastepickers franchises for providing waste management service, what started as a small demonstration project with 4 apartments reached 60 by end of 2015, and we kept growing. The demand for services came just with word of mouth. It was time to scale up it was very difficult to bring in business and operations rigor as a non-profit so, Hasiru Dala Innovations Private limited was initiated in 2015.

From then on, the company has grown to over 200 clients servicing over 175 residential complexes covering over 22000 households. The business has spawned 16 waste picker entrepreneurs and created over 85 jobs with the franchisees till Feb 2017.

>7500

>13000 🔀

500

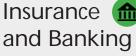
>50 Tons •



Wastepickers have a sense of occupational identity

Households have access to waste management services

New jobs created Of waste sent for for waste workers recycling or composting



provided to waste pickers and workers

Scholarships. educational loans

for children of waste pickers and informal waste workers

Wastepickers

managing municipal. waste aggregation and processing facilities

To operate DWCC, we trained wastepickers and small waste traders to become entrepreneurs to manage the Dry Waste Collection Center. Today the city of Bangalore sees model as most sustainable method of managing its source segregated waste and given all their centers (180) to give DWCC operations only wastepickers.

On 30th June 2017, the Bangalore city council has passed resolution. When completely implemented will have 198 entrepreneurs with a potential of hiring 2000 wastepickers to sort, grade and convert dry waste into tradable commodities. Hasiru Dala supports more than 40 centers.

We create many unique, creative space for citizens to interact with wastepickers that has created positive image of wastepickers in the city.

Nalini Shekhar says: "Clean Bengaluru can be achieved when waste is managed beyond just visual cleanliness. Integration of the workers from the informal waste economy, appropriate space and respect for sanitary workers of the city. Circular economy principles, space for recycling is enhanced by the state.

http://www.hasirudala.in; www.wastenarratives.com



Greater Malabar Initiative to Promote Local Innovation for Local Problems

By Naga Prakasam

appad, 12 kilometers from Kozhikode a quiet place that witnessed the historical event that changed the histroy of India forever - the place Vasco Da Gama landed in 1498. It was a mixed feeling visiting there on the way back from Areacode (yes, it's how Ariakode is pronounced) an hour from Kozhikode with entrepreneur Shamil.

It was very sad to hear during my last visit to Kannur that the tender coconut is coming from Karnataka, since harvesting coconut is not economically viable as the daily wages have gone up. Around ₹800 /day daily wages in Kerala is reaching developed state status! This provides great opportunities for entrepreneurs to bring technology to address this, as farmers are giving up on coconut. Shamil Salam, a mechanical engineer, the founder of Kenzon from Areacode, has done exactly that. With his brother, they have designed a simple coconut tree climbing machine, which improves productivity as well as enables anyone to climb and harvest coconut.

He has sold over 300 units so far. The design is very simple and affordable at ₹2800 a piece, and is easy to carry. The brothers are also designing similar machine for climbing arecanut trees.

The Kerala State Industrial Development Corporation (KSIDC) organized Startup Kozhikode on 6th July. It's good to see the focus on more impactful ventures.

On 10th June, the Greater Malabar Initiative (GMI) also launched its startup initiative.

GMI focuses on bringing Malabar region into the tourism map with homestay, and other facilities.

We visited Rubber plantations near Kozhikode in the backdrop of beautiful Wayanad foothills. Rubber plantations also provide plenty of opportunities for automating the cutting and collection processes. It is always good to move up in the value chain, as it protects the farmers from price volatility. There are value-addition opportunities in rubber as well. It's important to create



Rubber Plantation, Kozhikode

a local investor community that would support these entrepreneurs as they can connect with the problems better. We had a good discussion with a few high networth Indians in Kozhikode around this.

At Irinjalakuda, the train arrived at 6:30 am welcomed by the Monsoon. Hailing from a rain shadow region of Tamil Nadu, never seen this much rain. I was joking with entrepreneurs in Kerala about bottling the Monsoon rain and selling it. With this much natural resources, I was told Kerala gets vegetables from outside.



Renjith Ravindran, Young Farmer, Ashtamichira, Mala, Kerala

After visiting Kodakara, we proceeded to see this young farmer, Renjith Ravindran in Ashtamichira, Mala, Kerala. He leases the farmland and grows vegetables using safe-to- eat practices. Last summer he made a profit of ₹3 lakhs growing cucumber.

Great to see a few more younger farmers like Sreejith, Vijith. Joseph Pallan, an ex-military man, seems to be the inspiration for some of them growing vegetables profitably since 1998. Joseph says, "he never hesitates to share his wealth by paying his laborers/farmers. They earn around ₹800 /day and have been with me for more than 8 years. Whereas others use the migrant employees from states like Orissa and West Bengal."

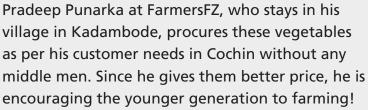
Alex, who is from Orissa says, he earns ₹9000/month and gets ₹7000 after food deduction. He is looking forward to go home during Christmas. For just ₹7000 he is migrating. Economics is the main reason of migration in India, which is sad - one prosperous state is getting people at cheaper wages from another low-income state, while Kerala is loosing its people to the Gulf. Interesting



Pradeep, FarmersFZ, Kodakara, Kerala

cycle - How long this will continue?

Young entrepreneur,



Entrepreneurs like these are the ones the country needs today.



Alex from Orissa in Kerala



Subscribe to







http://www.magzter.com/IN/ManagementNext-Media-/ **Sustainability-Next/Business/**



Carbon Masters to Set Up First Bio-CNG Unit in Malur Soon

arbon Masters, a Bangalore based energy start-up, has raised an undisclosed amount from Indian Angel Network and Sangam Ventures, a pure play clean tech venture fund. This round was led by IAN investors Nagaraja Prakasam, Mridula Ramesh and Karthik Chandrasekar from Sangam Ventures. Nagaraja Prakasam and Karthik Chandrasekar will join Carbon Masters as Board Members to strengthen the leadership team.

Established in 2012 Carbon Masters has pioneered the development of India's first bottled bio-CNG brand Carbonlites. Launched in 2014, Carbonlites is bio-CNG produced from the biomethanisation of organic waste streams, diverts waste from landfills mitigating methane emissions, displaces LPG for commercial cooking, and other fossil fuels for transport and backup power generation.

India is the 4th largest market for LPG in the world. Carbonlites provide India with a lower cost, carbon neutral alternative to the use of fossil fuels. It provides a more sustainable way of managing organic waste streams in Indian cities and makes it a unique carbon mitigation solution.

The company is planning to utilize the funds in product developments, senior, marketing and engineering level hiring and project developments.

The company has entered into a partnership agreement with the Mahindra & Mahindra for building large scale waste to energy plants. The first such plant will be operational soon in Malur, Karnataka.

Carbon Masters is an innovative energy start up that has successfully developed India's first branded Bio-CNG product for commercial cooking. Carbon Masters is exploring two captive transport solutions – running trucks and a fleet of auto rickshaws using carbon neutral gas.

Nagaraja Prakasam, IAN investor said: "Carbonlites enables conversion of Bangalore waste to renewable energy that can be used both for commercial cooking displacing LPG and to power vehicles. The by-product of the

process also produces organic fertilizer which

will be sold to Freshworld farmers. Thus,



through our association with the company, we aim to help the company unlock the vast market potential for its products, possibly on a global scale."

As an active angel investor of IAN Impact, Naga has lead Uniphore, GoCoOp, Freshworld, Saahas, SP Robotic, Neurosynaptic, Nativespecial and serves in their boards.

Karthik Chandrasekar, Founder & CEO, Sangam Capital Advisors said: "India has barely used its biogas energy potential and the sector has suffered from poor corporate and investor interest while European markets have saturated their potential. The Carbon Masters' team is focused on developing marketing and distribution linkages under the CarbonLites brand between producers of biogas (and organic-fertilizer) - farmers, municipalities and agro-industries (lot of whom flare the gas) and consumers for gas and fertilizer in both rural and urban markets. We believe they have found the key to institutionalization of the biogas sector in India!" It's first plant in Malur is capable of producing around 1.5 tons per day (547 tons per annum).

Carbon Masters recently won two Government of India tenders for their Carbonlites in a box product. Both tenders will involve waste to power as opposed to waste to gas for cooking.

Carbonlites is preferred by chefs for cooking costs less in use versus LPG and unlike LPG, or natural gas is Carbon Neutral in use. For instance, in Bangalore, there are 6000 restaurants and Hotels consuming on average 25kgs of LPG per day (54,750tons per annum.

The Indian Angel Network is India's first and world's largest business angel network with close to 450 members across the world. Established in 2006 to foster entrepreneurship with prime focus on nurturing and mentoring new generation entrepreneurs, IAN brought the concept of angel investment to India and has been instrumental in bringing India's start-up ecosystem on the global map. With investors from 10 countries, IAN's presence spans 7 locations, which includes cities in India and UK. The network is sector agnostic and has funded startups across 17 sectors in India and 6 other countries growing global footprint companies. Between 2014 and 2016 IAN has invested about over \$32 Million in approximately 60 deals.

IAN's portfolio has 120-odd companies 15 of which have already given cash exits and another 12 have raised next round monies. Some of its marguee investee companies include WebEngage (6x in 15 months of investment), Druva (289x over 7 years), Stayzilla (21x over 30 months), Box8 (~3x over 4 years), Consure (10x over 40 months) amongst many others.

Most mainstream Indian VCs like Sequoia, Nexus, Matrix Partners, Tenaya, IDG, Kalaari, USF, Accel, Inventus have done a follow on round in IAN's portfolio companies or co-invested with it.

Yes Foundation Fellowships To Go Up to 500

uvraj, a 19-year old youth saw a 66-year old man on a wheelchair selling incense sticks (agarbathis) on a busy road in Pune to support his parents and also part-fund a medical student's education. He picked him as his hero for the film he was doing as part of the 'Yes I'm the Change' film-making contest organized by Yes Bank.



Prerana Langa, CEO Yes Foundation

Contestants get a surprise topic at 6 am and are expected to submit a film on any social topic within 101 hours. The youth's short movie went on to win the contest. At the award ceremony, presided over by Amitabh Bachchan, he said it was great meeting AB but his experience of meeting this elderly gentleman was greater.

Kuljit has taken up animal rescue seriously. He works part time in Delhi and does animal rescue rest of the time. He built an app which has 1600 of his friends and youth singing up. Leena in Kolkota works on finding missing girls.

These youth represent what Yes Foundation, the social sector arm of Yes Bank, is aspiring to achieve through several of its outreach with youth who it thinks are powerful agents of social change. It's 'Yes I'm the Change Social Film Festival' has been a roaring success. In 2016, YES! i am the CHANGE engaged with over 13 lakh individuals from 2,500 cities and towns across India and received a record-breaking 29,500 social films for the free use of NGOs. "What was started as a thought has become a revolution across India," Prerana Langa, CEO of Yes Foundation, told Benedict Paramanand, in a chat recently. She has set up a Change Makers' Fund to support these initiatives.

"We focus on stimulating entrepreneurship and innovative use of media initiatives for social transformation, to enable India's inclusive growth," she added.

Media for Social Change

Buoyed by the phenomenal success of the social film initiative, the Foundation launched another ambitious initiative called 'Media for Social Change Fellowships' two years ago. In the first year 45 youth were selected to undergo 8 weeks of intense training on various sectors like working with NGOs, with social media among others. "We wanted a deeper engagement with the youth for creating more sensitive citizens, so we launched this fellowship," Ms Langa said.

This fellowship number rose to 200 in 2017. The plan is to increase it to 500 in 2018. The fellows get a modest fellowship of Rs. 10,000 and other expenses. They get a mentor for each of their projects. "If people are passionate they find their own resources. Many of them join NGOs and the corporate sector thereby enhancing the quality of their talent pool," she added.

Yes Bank has been a pioneer in responsible banking. It has consistently denied credit and loans to projects and organizations that harm ecology. Prerana Lamba is a veteran in the social sector. Before joining Yes Bank, she was part of the founding team of ICICI Foundation that has done pioneering work with bottom of the pyramid sectors.



B. Yadiah teaching at a Government School in Medipalli, Andhra Pradesh

Government School Teachers Absenteeism Only 2.5%

ontrary to popular perception and even that of the central and state government officials, a study finds Indian government school teachers as highly committed and that their absenteeism rate is highly exaggerated.

As per the findings of the research group at the Azim Premji Foundation released in March 2017, absence without reason is not more than 2.5% as against the popular perception of 25%. And the reasons that usually keep teachers out of school are "more to do with systemic issues that often require them to undertake other activities."

Table 1: Schools and teachers covered: state-wise

States	No. of Schools	No. of Teachers
Chhattisgarh	129	660
Rajasthan	199	1040
Uttarakhand	189	557
Others*	102	604
Total	619	2861

^{*} Across Bihar, Karnataka and Madhya Pradesh

The study took a sample of 619 schools and 2861 teachers across six states to analyze more closely the issue of teacher absenteeism. These schools are in the catchment area of the regions in which the Azim Premji Foundation works. As a disclaimer, the report observes:

"Although our sample is

not statistically representative of the whole of the country, this number is roughly in the same order of magnitude as in other studies. We also examine some potential correlates of overall absence from classroom and find that there are few obvious systematic differences attributable to the standard arguments."

The study was part of the university's efforts to improve the quality and equity of school education in India. "Our aim is to disseminate our studies to practitioners, academics and policy makers who wish to understand some of the key issues facing school education as observed by educators in the field."

http://azimpremjiuniversity.edu.in/SitePages/pdf/Field-Studies-in-Education-Teacher-Absenteeism-Study.pdf



Isha Launches Massive Rally to Revive Indian Rivers

ivers have always been the bedrock of our civilization and the lifelines of India. But in just one generation, most of our rivers have suffered dangerous levels of depletion. For a nation with 1.3 billion people, we cannot turn a blind eye to this grave crisis of our times." Sadhguru Jaggi Vasudev.

Sadhguru will drive from Kanyakumari to the Himalayas in September to create awareness for the urgent need to save rivers from extinction. He has warned that without a mass movement 25% of India is turning into desert. "This is a culture that never saw rivers and water as a commodity. We realized that this was a fundamental building block of life," he said.

The rally is only the beginning. Isha Foundation is proposing a comprehensive river rejuvenation plan to reverse this decline and revive major Indian rivers. The main proposal is to plant trees around 1 KM along the rivers. Native forest trees would be planted in government-owned land along riverbanks. Organic fruit tree cultivation would be taken up on private farmers' lands. This solution ensures that rivers are restored while also enhancing famers' livelihood by more than doubling their income in five years. The availability of fruit also improves nutritional intake among people.

The rally will be flagged off from Isha Yoga Center, Coimbatore on September 3 and culminate in Delhi on October 2, covering 13 states and 21 major cities. Sadhguru will be driving this entire stretch of 6560 km across India.

Project GreenHands (PGH) is a grassroots ecological initiative of Isha Foundation that has, since its inception on June 5 2004, enabled the planting of more than 25 million saplings by over 2 million volunteers across South India.

http://isha.sadhguru.org/blog/sadhguru/spot/saving-indias-lifeline-why-rivers-need-trees/

A 'Resustain IDEA' For SMEs

The Pune-based Treeni Sustainability Solutions has extended its 'Resustain' offering to mid-size and emerging firms. The offering handholds firms during their initial efforts in managing and reporting their sustainability performance

ustainability is increasingly becoming an important focus for SMEs as many of them take their first steps towards monitoring and measuring Environmental, Social and Governmental (ESG) risks and performance. SMEs often face budget constraints, bandwidth issues and

lack of subject matter expertise and look for outside support. Treeni enables companies to start focusing on sustainability as a core aspect of their business.

Ankush Patel, Co-Founder & CEO, Treeni Sustainability Solutions says, "Treeni was set up with a vision to reimagine sustainability and deliver effective, cost-optimal technologies to companies as they understand the importance and contribution of sustainability and CSR on their businesses."





Sustainability! From 100k waste bottles, our Igatpuri factory built the world's Biggest Plastic bottle Sculpture. A Guinness world record! pic.twitter.com/

Image source https://twitter.com/anirban007

Project Tuymai Validates SANITECH Tool



ANITECH is a pre-feasibility technology-choice decision-support tool. It has been validated in Warangal and through Project Tuymai. It is a part of the FSM Toolbox (www.fsmtoolbox. com), which is a one-stop knowledge and resource platform for Fecal Sludge Management projects, developed by the Asian Institute of Technology, CEPT University and CSTEP.

Users can

- View the sanitation situation in a city through a GIS-enabled interactive user interface
- Assess various technology options in sanitation in specific contexts
- Compare a portfolio of context-appropriate technology choices across the sanitation value chain
- Design context-appropriate systems from a repository of technology options
- Take various actions and examine their impact on the performance of specific indicators
- Build and compare scenarios on decision-support indicators.

Fecal Sludge Management (FSM) is a dirty business! But, this business is now becoming a priority agenda for national and local governments, investors and communities. While investments are flowing for FSM projects, challenges remain for initiating and implementing successfully planned and executed projects. Behind the shortcomings lie bottlenecks like knowledge gaps, procedures, professionals and most essentially, tools for a successful design and implementation. So, rely on our principal A-Z source for planning and execution of FSM-smart projects.

FSM Toolbox Training

CSTEP conducts capacity building activities to train users in effectively applying the AIT FSM Toolbox for their projects. A brief workshop can be conducted for users, either in person or through Skype. CSTEP can also provide handholding support if and when needed.

Publications

Technology Options for the Sanitation Value Chain: A comprehensive compendium of sanitation technologies, across the sanitation value chain, which provides readers information on the features, design, operation, cost, etc. of these technologies.

Sanitation Tool Compendium: A compendium of sanitation tools which aims to list all accessible and relevant tools in the sanitation sector, with focus on tools that take FSM into consideration. Factsheets, which cover the objectives, descriptions, advantages, limitations and details of the tool, have been developed for each of these tools.

Source: CSTEP's Sci-Tech News April 2017



SUSTAINABILITY 4.0 AWARDS

Frost & Sullivan and The Energy and Resources Institute (TERI) Initiative

Recognizing Excellence in Sustainable Development

2017 MENASA Edition





Congratulations to all the Award Recipients!

RECIPIENTS OF THE SUSTAINABILITY 4.0 AWARDS 2017						
AWARD TITLE	WINNERS	LOCATION				
Sustainable Corporate of the Year Award	Reliance Industries Limited					
Sustainable Factory of the Year Award	ITC Limited - India Tobacco Division	Bengaluru				
Sustainable Factory of the Year Award - 1st Runners Up	Mahindra & Mahindra Limited	Igatpuri				
Leaders Award - Mega Large Business	ITC Limited - India Tobacco Division	Ranjangaon				
Leaders Award - Mega Large Business	Bharat Aluminium Company Limited	Korba				
Leaders Award - Large Business	United Breweries Limited	Golconda				
Leaders Award - Large Business	Henkel Adhesive Technologies India Private Limited					
Leaders Award - Medium Business	Johnson & Johnson Private Limited	Mulund				
Leaders Award - Medium Business	UltraTech Cement Limited - Reddipalayam Cement Works	Ariyalur				
Challengers Award - Mega Large Business	Hindalco Industries Limited					
Challengers Award - Mega Large Business	Genpact India					
Challengers Award - Mega Large Business	Yes Bank Limited					
Challengers Award - Mega Large Business	Bharat Petroleum Corporation Limited - Mumbai Refinery	Mahul				
Challengers Award - Large Business	Hindustan Coca Cola Beverages Private Limited	Ameenpur				
Challengers Award - Large Business	ACC Limited - Gagal Cement Works	Barmana				
Challengers Award - Medium Business	Dr. Reddy's Laboratories Limited - CTO I	Hyderabad				

INNOVATE

ENGAGE

COMMUNICATE/

MITIGATE

MEDIA























For more details contact:

Srinidhi S. Rao Frost & Sullivan Tel: +91 - 75060 42992 Email: SrinidhiR@frost.com

Preeti Bathla The Energy and Resources Institute (TERI) Tel: +91 - 9818900764 Email: Preeti.Bathla@teri.res.in

Srishti Choudhury Frost & Sullivan Tel: +91 - 20 40778850 Email: srishtic@frost.com

For Media Queries:

Pallavi Singh The Energy and Resources Institute (TERI) Tel: +91 - 98731 91597 Email: pallavi.singh@teri.res.in

BOOKSHELE



Green Technologies and Environmental Sustainability

Edited by Ritu Singh & Sanjeev Kumar, Springer, 2017

The book covers cutting-edge research and recent advances in green energy, green chemistry, green economy, and sustainable industrial technology. It describes the development and expansion of processes, practices, and applications that improve or replace the existing technologies. It also proposes improvements in sustainability measurement for operational aspects of sustainable development

In the present scenario, green technologies are playing significant role in changing the course of nation's economic growth towards sustainability and providing an alternative socio-economic model that will enable present and future generations to live in a clean and healthy environment, in harmony with nature.

Green technology, which is also known as clean technology, refers to the development and extension of processes, practices, and applications that improve or replace the existing technologies facilitating society to meet their own needs while substantially decreasing the impact of human on the planet, and reducing environmental risks and ecological scarcities.

The concepts of Green Technologies, if endorsed and pervaded into the lives of all societies, will facilitate the aim of the Millennium Development Goals of keeping the environment intact and improve it for the civilization to survive. Green Technologies and Environmental Sustainability is focused on the goals of green technologies which are becoming increasingly important for ensuring sustainability.

This book provides different perspectives of green technology in sectors like energy, agriculture, waste management and economics and contains recent advancements made towards sustainable development in the field of bioenergy, nanotechnology, green chemistry, bioremediation, degraded land reclamation.

This book is written for a large and broad readership, including researchers, scientists, academicians and readers from diverse backgrounds across various fields such as nanotechnology, chemistry, agriculture, environmental science, water engineering, waste management and energy. It could also serve as a reference book for graduates and post-graduate students, faculties, environmentalist and industrial personnel who are working in the area of green technologies.





The Evolutionary Leap to Flourishing Individuals and Organizations

By Center for Evolutionary Learning, 2017, Routledge

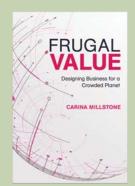
The last thing the world needs is yet another book delineating business-induced dangers and damages such as environmental disasters, social inequalities and unethical conduct.

And yet, success in achieving sustainable growth - whether for the individual, organization, or the social community - has mostly eluded us. Just as a compass needle moves to magnetic north, our deeply seated behaviors push us back to practices that are familiar and comfortable, even when we have sought to make a change to act in ways that are more sustainable.

How can we generate this deep and durable change in our values and beliefs, and thus both in our individual and collective decisions and behavior at work? How can we unveil the best of our human qualities by learning to raise our consciousness to a more profound perception of ourselves and our relationship with the whole? And what if such a change could lead to an 'evolutionary leap' to a lasting flourishing state for us and for our organizations?

This book describes how this shift in mindset and consciousness level can, and has indeed, taken place in organizations using meditative practice, not only for individual wellbeing (which is now well understood) but also for deep transformational change. Through this shift, we can move past a definition of sustainability as 'mere resource efficiency and long-term survival', to one of 'sustainability-as-flourishing'.

This book challenges many pre-conceived ideas about what a sustainably successful organization is and how it should be run. Based on a growing body of evidence - from neuroscience to business research - it maps out a path to empower all who wish to undertake this journey towards the realization of the highest potential in ourselves, our organizations, and our social and natural world.



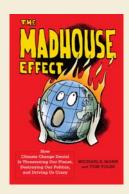
Frugal Value: Designing Business for a Crowded Planet

By Carina Millstone, 2017, Routledge

How should the private sector respond to the new risks and uncertainties of a crowded planet? *Frugal Value* contests the notion that companies can rise to the great challenges of our time by adopting so-called 'sustainable business' practices. Instead, the acute ecological crisis requires an all-round rethink of what business does, and how it does it. This book explores what business responsibility looks like today, and how it could be put into practice through far-reaching changes to companies, ranging from new approaches to product design and business models to reconfiguration of operations and innovative ownership structures.

Frugal Value provides practitioners and scholars with the perspective and tools they need to design companies that help drive the socio-economic changes so urgently required for a sustainable and just world.





The Madhouse Effect

Michael E Mann and Tom Toles Columbia University Press, May 2017

The award-winning climate scientist Michael E. Mann and the Pulitzer Prize—winning political cartoonist Tom Toles have been on the front lines of the fight against climate denialism for most of their careers. They have witnessed the manipulation of the media by business and political interests and the unconscionable play to partisanship on issues that affect the well-being of billions. The lessons they have learned have been invaluable, inspiring this brilliant, colorful escape hatch from the madhouse of the climate wars.

The Madhouse Effect portrays the intellectual pretzels into which denialists must twist logic to explain away the clear evidence that human activity has changed Earth's climate. Toles's cartoons collapse counter-scientific strategies into their biased components, helping readers see how to best strike at these fallacies. Mann's expert skills at science communication aim to restore sanity to a debate that continues to rage against widely acknowledged scientific consensus. The synergy of these two climate science crusaders enlivens the gloom and doom of so many climate-themed books—and may even convert die-hard doubters to the side of sound science.

About the Author

Michael E. Mann is Distinguished Professor of Atmospheric Science and director of the Earth Systems Science Center at Penn State University. He is the author of *The Hockey Stick and the Climate Wars: Dispatches from the Front Lines* (Columbia, 2012) and a fellow of the American Meteorological Society, the American Geophysical Union, and the American Association for the Advancement of Science.

Tom Toles is the Pulitzer Prize–winning cartoonist of the Washington Post. He has a particular interest in climate change science and has worked consistently to advance understanding of this subject, including its political context, since the 1980s.

Courses - Degree/Diploma

M.Tech (Water Science and Governance)

teri university

http://www.teriuniversity.ac.in/index.php?option=com_program&task=program&sno=33

M.Sc. (Water Science and Governance)

teri university

http://www.teriuniversity.ac.in/index.php?option=com_program&task=program&sno=34

LLM (LLM programme with specialisation in Environment and Natural Resources Law and Infrastructure and Business Law)

teri university

http://www.teriuniversity.ac.in/llm-programme

M.A. (Public Policy and Sustainable Development)

teri university

http://www.teriuniversity.ac.in/masters-in-public-policy-andsustainable-development

M.A. (Sustainable Development Practice)

teri university

http://www.teriuniversity.ac.in/masters-in-sustainable-development-practice

M.B.A. (Business Sustainability)

teri university

http://www.teriuniversity.ac.in/mba-business-sustainability

M.B.A. (Infrastructure)

teri university

http://www.teriuniversity.ac.in/mba-infrastructure

M.B.A. (Business Sustainability)

teri university

http://www.teriuniversity.ac.in/mba-business-sustainability

M.Sc. (Economics)

teri university

http://www.teriuniversity.ac.in/msc-economics

M.Sc. (Geoinformatics)

teri university

http://www.teriuniversity.ac.in/msc-geoinformatics

M.Sc. (Plant Biotechnology)

teri university

http://www.teriuniversity.ac.in/msc-plant-biotechnology

M.Sc. (Climate Science and Policy)

teri university

http://www.teriuniversity.ac.in/msc-climate-science-and-policy

M.Sc. (Environmental Studies and Resource Management)

teri university

http://www.teriuniversity.ac.in/msc-environmental-studies-and-resource-management

M.Sc. (Water Science and Governance)

teri university

http://www.teriuniversity.ac.in/index.php?option=com_program&task=program&sno=34

M.Tech (Renewable Energy Engineering and Management)

teri university

http://www.teriuniversity.ac.in/mtech-renewable-energy-engineering-and-management

M.Tech (Urban Development and Management)

teri university

http://www.teriuniversity.ac.in/mtech-urban-development-and-management

M.Tech (Water Science and Governance)

teri university

http://www.teriuniversity.ac.in/index.php?option=com_program&task=program&sno=33

Advanced PG Diploma (Renewable Energy)

teri university

http://www.teriuniversity.ac.in/apgdre4

MPhil/PhD in Disaster Studies

Jamsetji Tata School of Disaster Studies

http://www.tiss.edu/view/6/mumbai-campus/jamsetji-tata-school-of-disaster-studies/about-us-5/

M. A. / M. Sc. in Disaster Management

Jamsetji Tata School of Disaster Studies

http://www.tiss.edu/view/6/mumbai-campus/jamsetji-tata-school-of-disaster-studies/about-us-5/

M. A. / M. Sc. in Disaster Management

Jamsetji Tata School of Disaster Studies

http://www.tiss.edu/view/6/mumbai-campus/jamsetji-tata-school-of-disaster-studies/about-us-5/

Master of Health Administration

Jamsetji Tata School of Health System Studies

http://www.tiss.edu/academics/schools-centres/

Master of Public Health (MPH) in Social Epidemiology

Jamsetji Tata School of Health System Studies

http://www.tiss.edu/academics/schools-centres/

Events

SAMRAT (International Leadership Summit)

July 22, 2017, Bangalore, India

https://allevents.in/bangalore/samratinternational-leadership-summit/444686305891335

Global Education, Research, and Technology for Sustainable Development

September 22-25, 2017, Coimbatore, India subash.m@tauedu.org

Conference and expo on iOS, Android, App Development, Artificial Intelligence, Virtual Reality, Internet of Things, Deep Learning

October 5-8, 2017, Bengaluru, India

https://inomics.com/go/Conference-and-expo-/979741

ICIME 2017 9th International Conference on Information Management and Engineering

October 9-11, 2017, Barcelona, Spain http://www.icime.org/

Global Science, Technology & Innovation Conferences (G-STIC) 2017 - Student & Research Challenges

23-25 October 2017, Brussels

http://www.teriin.org/index.php?option=com_events&view=details&sid=917&Itemid=110

RDCAPE — 2017 Recent Developments in Control, Automation & Power Engineering

26-27 October 2017, NOIDA, India

http://amity.edu/rdcape2017/

CICT — 2017 Conference on Information and Communication Technology

03 -05 Nov 2017, Gwalior, India Http://cict2017.org

APPEC — 2017 IEEE PES Asia-Pacific Power and Energy Engineering Conference

08 -10 Nov 2017, Bangalore, India

http://www.ieee-appeec2017.org

3rd Economics Conference 2017

10-11 November 2017, Mysore, India

https://inomics.com/go/3rd-Economics-Confer/994075

POWER WEEK

13 – 17 November 2017, Singapore

www.power-week.com

iAIM — 2017 IEEE International Conference on Antenna Innovations & Modern Technologies for Ground, Aircraft and Satellite Applications

24 -26 Nov 2017, Bangalore, India

http://www.ieeeiaim2017.org

6th International Conference on "Paradigm Shift in Global Business Practices and Socio Economic Development"

9 Dec 2017, Hyderabad, India

conference@vsom.in

3rd International Congress on Human Rights & Duties

10 Dec 2017, Hyderabad, India

https://inomics.com/3rd-international-congress-human-rights-duties-hyderabad

ICTEE — 2017 International Conference on Transforming Engineering Education

13 -16 Dec 2017, Pune, India

http://www.ictee.in

59 ISLE Annual Conference

16-18 December 2017, Thiruvananthapuram, Kerala https://inomics.com/59-isle-annual-conference-thiruvananthapuram-0

ICPS — 2017 7th International Conference on Power Systems

21 -23 Dec 2017, Pune, India http://www.icps2017.in

Finance and Economics Conference 2017

28-29 December 2017, Kolkata, India

https://inomics.com/finance-and-economics-conference-2017-kolkata

World Sustainable Development Summit 2018

February 15-17, 2018, New Delhi

http://wsds.teriin.org/

RAIT — 2018 4th International Conference on Recent Advances in Information Technology

15 -17 Mar 2018, DHANBAD, India

https://inomics.com/

BioProcess International European Summit

April 24-25, 2018, Netherlands

https://inomics.com/go/-BioProcess-Internat/1026975