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Purpose

To excite entrepreneurs, executives and graduate students about immense opportunities in green business.

Dr. Devi Shetty's 5 Mantras to Transform India's Healthcare

By J Shiruti

India needs healthcare reforms urgently if it wants the poor to get better access to it. It is easy and universal healthcare can be achieved in just five years with a few financial innovations. What are we waiting for? Excerpts of Dr. Shetty's talk on 'A Path to Transform Healthcare in India' at ICFAI's Leadership Conversation series recently.

a. Government funded universal healthcare not feasible for India
b. Rs. 10,000/- annual health insurance by 300 million middle class can transform India's healthcare
c. Through basic insurance healthcare modern healthcare can be accessed by all
d. Insurance, hospitals, patients need to trust each other for healthcare revolution
e. Tax free healthcare savings account can do wonders to a families' health security

In the 100th leadership conversation session titled "From Universal Healthcare to Universal Health Insurance" held on April 14, 2023, Dr. **Devi Prasad Shetty, Chairman and Executive Director of Narayana Health**, proposed a shift from universal healthcare to universal health insurance. The session, moderated by Prof. R Prasad, Director-Academic Wing, ICFAI Group, and Mr Sudhakar Rao, Director-Branding, ICFAI Group, provided a platform for a nuanced discussion on the healthcare challenges in India.

According to Dr Shetty, millions of Indian families are on the brink of financial ruin due to medical bills. India, as a nation, requires 65 million surgeries a year, but only 25 million are performed. This deficit of 40 million surgeries threatens the quality of life and survival of many Indians. The surgeries in question are not complex procedures, but essential ones such as caesarean sections for obstructed delivery, appendectomies, and surgeries for compound fractures.

Discussing the limitations of the existing healthcare system, Dr Shetty pointed out that "since independence, people in need have the right to get free access to healthcare with the taxpayer's money. But if you go deep down in order to understand or analyse, free universal healthcare to every citizen through taxpayer's money happened in very few countries successfully." He identified the traits common to these countries: a small population, high tax-to-GDP ratio, and considerable healthcare spending—factors that India currently lacks.

Dr. Shetty firmly believes in the potential of universal health insurance, stating "Most middle-class families in India are ready to pay at least the premium cost of a typical health insurance which cannot fund surgery without insurance but can avail healthcare insurance at minimal cost with no fuss." **He emphasized the need for the three stakeholders in the healthcare industry – hospitals, insurance companies, and patients – to foster mutual trust.**

Dr Shetty envisages a **more inclusive health insurance model**, stating "What I am saying is we need to come up with an affordable health insurance with a premium of 10,000 rupees per year which will cover primary, secondary, and tertiary healthcare." Theoretically, this would generate more funds than the current central government's healthcare budget and cater to a large segment of the population.

Looking ahead, Dr Shetty suggested the implementation of **health savings accounts**, a tax-free scheme for healthcare expenses. Such an initiative would provide a flexible route for the middle-class population to pay insurance premiums.

In Dr Shetty's vision, India has the potential to become a global leader in healthcare by **dissociating healthcare from affluence.** He confidently stated, "I believe that India can become the first country to dissociate healthcare from affluence and will prove to the world that the wealth of the nation has nothing to do with the quality of healthcare. It will not take a lifetime but only 5 years if implemented."

Dr Shetty's insightful leadership conversation session provided a fresh perspective on the healthcare challenges in India and a potential roadmap for transforming the current healthcare narrative. His advocacy for universal health insurance and health savings accounts could potentially shape the future of healthcare in India, ensuring that quality medical care is accessible and affordable for every citizen.

https://youtu.be/fezaS7ylV1w

Indian IT services firms set for robust growth, attrition a concern. Business Standard

Half of Millennials Ready to Quit Over Value Misalignment

By SN Staff

The pressure on businesses to be more responsible is growing. Surveys indicate employees are ready to quit if there is value misalignment with their employers. This is good news for all stakeholders.

- **51% of Millennials will quit or look for another job because of value misalignment.**
- **Tech ranked as the top societal issue demanding business action in India**
- **83% of Indian knowledge workers want to have a say in the societal issues**
- **89% agree businesses need to do more in addressing waste and pollution**

Atlassian Corporation, the maker of Jira, Confluence and Bitbucket, had commissioned the Return on Action research in India to examine the impact of the action, or inaction, of businesses in tackling pressing social and environmental issues. The research, undertaken by PwC Australia with support from PwC India, reveals an overwhelming majority (97%) of knowledge workers expect action from businesses on issues related to the environment, health & wellbeing, the economy, technology, human rights, and equality, and 82% believe businesses should be just as concerned with their social impact as they are with their financial performance.

Crucially, there are high risks if an employer's actions don't align with the values held by their employees. Half (50%) of knowledge workers would go so far as quit their job or start looking for employment elsewhere as a result of value misalignment – it goes up to 51% amongst Millennials, the core workforce, and 53% of women knowledge workers who are also more likely to admit feeling pressure from their employer to support causes they don't believe in.

As well as losing staff, there is a danger of a negative impact on workplace culture, performance, and organizational reputation if employer and employees' values do not align. Nearly half (49%) would discuss discontent with their colleagues and over one-third (34%) with people outside of their organisation, while 43% would be "disengaged" at work.

Jessica Hyman, Head of Sustainability, Atlassian said, "Our inaugural Return on Action research in India sends a clear message to businesses that speaking up and acting on social and environmental issues is non-negotiable. It's no longer a decision on whether to act, it's a matter of *how*."

"But before making that leap, the research highlights the crucial need for businesses to *consult* with their employees from the outset, with over three-quarters (83%) of knowledge workers wanting to have a say in the societal issues their employer acts on. From here, businesses must determine its approach in a way that aligns with both employee values and its business strategy."

The business case for considered action is clear with the research revealing a strong correlation between satisfaction with the actions of an employer and overall job satisfaction, which is crucial for employee retention and attracting talent in an increasingly competitive market.

Technology

Companies looking to compete in technologies like AI, Machine Learning and cloud have a big opportunity to prove they are adopting these technologies responsibly.Almost one-third (31%) of respondents agree that businesses have the primary responsibility for addressing issues related to technology pertaining to digital privacy, responsible use of technology and data and digital infrastructure, even more so than the government (18%).

When asked the top issues businesses should act on, technology issues topped the list across all age demographics – specifically, digital privacy for Gen Z (86%) and Millennials (84%), responsible use of data for Gen X (88%) and digital infrastructure for Baby Boomers (91%).

The Environment

According to the 2022 World Air Quality Report, India was eighth globally in its rankings of PM2.5 concentration, i.e., harmful

air pollutants, and 12 of the 15 most polluted cities in Central and South Asia are in India. Atlassian's study found environmental pollution placed at the highest relative importance by respondents. 89% agree businesses need to do more in addressing waste and pollution, and 87% agree they should take full responsibility for their environmental impact e.g., renewable energy and zero waste.

The Economy

Over half (56%) of knowledge workers believe issues related to the economy, such as unemployment, corruption, and poverty, are more important now compared to the past 12 months, and 43% believe businesses need to do more to address these issues. In the current economic environment, unemployment ranked fourth in relative importance of social issues overall.

Empowering Employees

"There are many ways a business can demonstrate to employees its commitment to an issue, from setting public facing goals, reporting out progress against them, investing in external partnerships and advocating for critical policy," Jessica Hyman added. "But above all, knowledge workers expressed a desire to be empowered to act themselves, such as through education programs or opportunities for fundraising or volunteering. This is a powerful way for businesses to work alongside their employees creating the time, space, and support for them to lead the change they want to see, rather than dictating the path ahead."

The survey was conducted Pan-India by PwC Australia with support from PwC India between 10th February and 23rd February 2023 with a sample size of 2,406 knowledge workers across a range of states, industries, and demographics. The data in this report is significance tested to a 95% confidence level with a margin of error of 2%.

Link to the Return on Action Factsheet

https://www.atlassian.com/

Tenacity – The Inside Story of Akshayakalpa Organic

By Benedict Paramanand

In 2010, 27 Wipro engineers set out to transform the Indian dairy sector. Instead, the dairy sector ended up transforming them. They almost went bankrupt six times yet they clung on to their dream. Today, Akshayakalpa is India's first and largest certified Rs. 120-crore organic dairy enterprise serving 40,000 customers mainly in and around Bengaluru.

Akshayakalpa is much more than a dairy company. It is deeply engaged in transforming the Indian farming ecosystem or the agriculture model, in which dairy is one of the key elements. The centre of change is the farmer, mostly women farmers, how well the cow is cared for, improving soil quality, improving the quality of homegrown organic fodder, pricing and distribution, and much more.

Unlike regular dairy companies like Amul and state-run dairy companies, which are supply-led, Akshayakalpa is a production-led enterprise. The firm works with nearly 1000 highly trained farmers and plans to double that number soon.

With capital from private equity last year, the company is on an expansion spree. It is setting up dairies near Chennai, Haveri and Hyderabad.

It is diversifying into other agricultural products like honey, to shore up its revenue stream.

Benedict Paramanand, Editor of SustainabilityNext went on a field trip to the 24-acre lush green Akshayakalpa farm in Tiptur (150 km from Bengaluru), where it has a 200,000-ton-a-day milk processing facility, a lab and a model farm for training farmers. He met **Shashi Kumar**, co-founder and CEO for a chat. *Edited Excerpts:*

At the outset, my visit to your farm was an awesome experience. Could you share your perspective on the market potential for organic dairy products in India?

Well, in reality, a formal market for organic dairy products is very small. This is due to a lack of consumer awareness regarding organic dairy. We've seen over the last 12 years that it requires considerable education to explain our approach to cow rearing, soil treatment, and feeding. Nonetheless, considering that we sell about 35,000 to 40,000 litres of milk daily in Bangalore, we can estimate that organic dairy has a potential market share of approximately 1% of the overall dairy market.

How can the organic dairy market be created?

Creating the market requires extensive education. In the past year, we've taken 10,000 of our consumers to our farm to demonstrate our processes and practices. We also run campaigns on social media platforms and produce explanatory videos. But, in my opinion, the most effective way to communicate our vision is by taking consumers to the farm.

Can you explain how other dairy farmers can transition to organic farming?

The transformation to organic dairy farming involves a localized approach and curbing external inputs to the farm. Here are three critical steps:

Stop external inputs: This means not purchasing feed from outside and providing cows with a freer range environment.

Understand how to feed cows organically: Farmers must grasp how to nourish cows in an organic system by growing their feed.

Learn how to raise cows: This involves understanding how to raise both milking and young cows in an organic production system.

Bear in mind that this is a long process that can take three to five years and needs consistent commitment from the farmers.

What role does price play in attracting farmers to organic dairy farming?

The issue in India, not just with organic but general dairy farming as well, is profitability. The costs can be quite high. If we examine a non-organic milk production system, the cost is about 32 to 33 rupees per litre, with 40%

As part of its branding strategy Akshayakalpa announced the 15-year-old **Chess Grandmaster Nihal Sarin** as its brand ambassador recently. Nihal is the youngest Indian ever and third-youngest player in history to break the 2600 barrier in chess. This is considered to be among the biggest sponsorship deals for an Indian chess player after Viswanathan Anand.

of that cost dedicated to buying feed from outside. When a farmer begins to grow their feed, they can save about 15-20%. This cost-saving, along with our slightly higher payment rates, can make organic dairy farming more profitable.

Can you share some of your personal journeys and experience in the dairy industry?

I have been with Akshayakalpa for 13 years now. What I've realized in my journey is that the problems in farming is massive. We initially thought we could change farming practices by providing resources and guidance. Instead, we found ourselves changing more than the farmers.

There's a pressing issue we're facing – the dwindling population of farmers. In 30 to 40 years, there may be no farmers in India to produce food. We work in around 900 villages, and in half of these, no population under 45 years old is willing to take up farming.

The critical task at hand is to make farming sustainable and attractive to younger generations. We must move away from idealized notions of farming and acknowledge its challenges. Our goal with the 800-900 farmers we've worked with is to make them role models in their villages, showing others that farming can be profitable and fulfilling.

How has the journey been for you and what has made you stick to this path?

Despite disillusionment, the main thing is that we have stuck along. Now, our future seems very promising. We were fortunate enough to come from the technology industry and had savings, which we depended on. Additionally, the 27 of us wanted to make change happen and had no intentions of making money out of

this. In times of crisis, we came together and funded Akshaykalpa. During the 12 to 13-year journey, we have come close to bankruptcy six times, but we managed to keep our motivations higher and continued to fund to keep the company afloat.

How did you manage to build a successful company?

I believe that luck played a significant role. For instance, our milk product was accidental. We initially intended to work on improving soil conditions but ended up in the dairy industry. Consumers started to like our milk, which was a lucky break. Furthermore, during a difficult phase from 2017 to 2019, we explained our situation to a hundred farmers we worked with and asked if we could make one payment per month instead of two for the next two years. All hundred farmers agreed without hesitation, which I also attribute to luck.

Is there a price point resistance for your product?

Yes, there is resistance. Our products are expensive, limiting our consumer base to about 1% of potential customers. This will continue to be the case. There is a perception problem that needs to be addressed – people need to understand that they should pay a premium for good food.

What's the future of Akshay Kalpa in five years?

In three to four years, we expect to be profitable. We're expanding our product range into honey, greens, and vegetables. The diversity of our farm products needs to go up and the efficiencies of our operations should also increase. This way, we can increase the farm income and make our operations profitable.

Do you have any big thoughts on how to make the Indian dairy industry profitable for farmers?

Farmers need to make dairy farming a science. Currently, they are feeding animals with concentrated feed, which is profitable for feed companies but not for farmers. Farmers should grow their own fodder – what's required for the cow. This way, dairy farming becomes profitable. Whether it's organic or conventional farming, farmers should not buy anything from outside.

For More Details, **visit**

Edited by J Shruti

ACT Invites Fellowship 2023-24 for Aspiring Social Change-Makers

By SN Staff

The ACT Fellowship Program, a venture philanthropy initiative of ACT, is accepting applications for its 2023-24 cohort. The program invites young professionals who are passionate about creating social change and are looking to embark on a journey in the social impact sector.

The nine-month, full-time program provides a unique opportunity for aspiring change-makers to learn how venture capital principles can be applied in philanthropy to catalyze social impact on a larger scale. This learning will be facilitated by leading investors, founders, and social impact leaders.

On successfully completing the program, each Fellow will receive a monthly stipend of Rs. 60,000 and a letter of experience. The program is fully-funded and offers an immersive experience in one of ACT's four focus areas: ed-tech, public healthcare, climate action, and gender inclusivity. The Fellows will work on a wide range of live projects, including sector research, deal-flow sourcing, due diligence, investment pitches, portfolio management, impact assessment, and more.

The 2023-24 cohort will consist of five Fellows. The minimum eligibility criteria for applicants include being a resident Indian citizen, holding a graduate degree from an accredited university, and at least two years of experience in start-up, investing, consulting, or social sector work.

The deadline for applications is on 7th August 2023.

The Power of Remanufacturing

By Ranjan Kumar

Remanufacturing is part of SKF India's Journey towards a low-carbon future. It has untapped potential for reducing environmental impact, lowering costs, increasing profitability, and creating jobs.

Climate change remains one of the most pressing challenges that necessitates urgent action from individuals, organizations, and governments alike. As the consequences of global warming become increasingly apparent, companies across diverse industries are stepping up to reduce their carbon footprint and contribute to a more sustainable future.

SKF has been committed to sustainability for several years, making it an essential component of our business. We are decarbonizing our operations and also helping our customers achieve their sustainability goals.

SKF started its operations in India in 1923 and today provides industry leading automotive and industrial engineered solutions through its five technology-centric platforms: bearings and units, seals, mechatronics, lubrication solutions and services. Over the years the company has evolved from being a pioneer ball bearing manufacturing company to a knowledge-driven engineering company helping customers achieve sustainable and competitive business excellence.

SKF has a pan India footprint consisting of 6 manufacturing facilities, 12 offices, a supplier network of over 300 distributors and an

employee base of more than 2600 dedicated professionals.

In line with this, SKF India has embarked on an inspiring journey towards pursuing a low-carbon future. With a strategic focus on clean technology and sustainability, the company is leading the way in reducing its environmental impact and aiding the industry's transition towards a carbon-free, circular, and clean economy.

Globally, SKF has set ambitious targets to achieve net-zero. We have a proven track record, and we are confident that we will reach our climate goals:

- By 2030, all our production facilities, all over the world, will have net zero greenhouse gas emissions.
- By 2050, our full supply chain, from materials to the delivery of our products and solutions, will be net zero.

Reaching these goals requires major focus and commitment from people within our operations and from those working at our suppliers throughout the full value chain. And we are off to a good start. SKF's plan to achieve the 2030 goal is based on continued measures in two main areas.

- **Improving energy and resource efficiency within our operations**

SKF has a good track record in energy efficiency improvement. We are one of the first to adopt the ISO 50001 energy management standard. Currently, the energy performance of each facility is monitored on a monthly basis. As electricity accounts for 97-98% of the total energy use at SKF India and most of our scope 1 and 2 emissions, optimizing electricity use is a key focus area. To drive consistent optimization of electricity use, SKF India aims to achieve a year-on-year improvement in energy efficiency by 5%.

- **Switching to renewable energy sources**

We have been working to source or generate an increasing share of energy from renewable sources for several years. By increasing the share of renewable electricity used at our facilities to nearly 40%, SKF India is making significant progress in reducing its carbon footprint.

Enabling Decarbonisation of Customers

At SKF, we want to integrate sustainability in our business – in our products, services, and customer solutions. SKF provides products, services and solutions which help customers improve safety, reduce friction, improve process efficiency, reduce waste and use of material, extend service life, and achieve other sustainability benefits. We also contribute to the growth of the renewable energy industry and the electrification of vehicles.

For the automotive industry, where SKF is a strong partner, we are developing innovative products to support the electrification journey. Through the optimization of product design, SKF India develops lighter, more efficient, and long-lasting solutions that improve the

performance of customers' products. For Industrial Business, SKF offers a range of services, such as condition monitoring, reliability services, and asset optimization, which can help customers improve the efficiency and performance of their equipment.

Remanufacturing

For many medium- to large-size bearings in a number of demanding industries, remanufacturing can offer considerable benefits, including lower life-cycle costs and less unwanted downtime, especially if remanufacturing is combined with other SKF services and technologies. In addition, remanufacturing supports company's efforts in the growing importance of sustainability in value chain. This is because remanufacturing not only significantly reduces CO2 emissions compared to producing new bearings but also consumes up to 97% less energy. Remanufacturing has untapped potential for reducing environmental impact, lowering costs, increasing profitability, and creating jobs.

Managing Scope 3

We understand from our carbon footprint studies, that embodied carbon in the steel and steel components plays a major role in our value chain. In simple terms, steel is the most carbon and energy intensive material. With this as the background, SKF India have started to work with steel mills to seek information and monitor specific CO2 emissions for producing SKF material. The company also prioritizes understanding the impact of other direct materials, such as rubber and plastics and continues to explore opportunities for reducing emissions throughout its logistics activities. This collaborative approach demonstrates SKF India's commitment to drive industry-wide transformation and reduce emissions throughout the value chain.

SKF globally launched a tool to help the industry to better understand the carbon emissions for SKF products. With this tool, users can access a dashboard where they can explore how CO2 emissions related to the production and use phase of bearings are distributed in different industries. The dashboard provides illustrative examples based on how emissions differ in various positions across industry applications.

Users also have the option to get a more detailed estimation with SKF's Bearing Select software tool by adding a few data points. The tool also offers the opportunity to engage with SKF's expert application engineers, who can provide a detailed view of the specific carbon emissions for the bearings and how the customer's application can be optimised to reduce energy consumption and corresponding emissions in the future.

Looking forward, SKF is in a strong position to improve the sustainability of customers, own operations, and suppliers as the products and solutions provided to aim at reducing friction. By prioritizing sustainability in its operations and throughout the value chain, SKF India is leading the way toward a low-carbon future.

Ranjan Kumar
Director – Ethics, Legal, Corporate Affairs & Sustainability, SKF (India & Southeast Asia)

Fungi grown in a Canadian rainforest

Fungi offer 'Jaw Dropping' Climate Solution

By J Shiruti

In a ground-breaking revelation, researchers have uncovered the potential of fungi to fight climate crisis. We need to focus on protecting and growing more fungi networks and not focus only on growing forest cover for sequestring carbon

A new study published in **Current Biology** found that fungi consume over a third of the world's annual fossil fuel emissions, equivalent to offsetting the yearly carbon pollution from China, the world's largest carbon emitter1.

Fungi, often associated with their fruiting bodies like mushrooms, are sprawling organisms that reside beneath the surface. These unique life forms, more similar to animals than plants, form symbiotic relationships with plants. Termed as 'mycorrhizal fungi', these organisms have been providing plants with mineral nutrients in exchange for sugars for nearly half a billion years. The sugars, derived from carbon dioxide by plants, essentially make fungi a growing 'carbon bank'.

It is estimated that globally, the world's plants pump approximately 13 gigaton of carbon dioxide into underground fungi each year. Some fungal networks are expansive, such as a giant fungus in Michigan's Upper Peninsula that sprawls across 37 hectares or 91 acres.

However, these critical subterranean fungal networks face continual disruption due to human activities, including agriculture, mining, and industry. The United Nations last year warned that 90% of the earth's topsoil could be at risk by 2050. The implications are not only dire for food production but also for climate, as this interference compromises the ability of fungi to act as carbon sinks.

Despite their significant role in carbon sequestration, fungi are often overlooked in favour of more overt conservation efforts, such as forest protection.

Heidi Hawkins, the lead author from the University of Cape Town, noted that our understanding of carbon storage in mushrooms is still limited and requires further research. Fungal structures retain some carbon while they are alive and even after they die, but the stability of this stored carbon is yet to be determined.

This new understanding of the role of fungi in carbon sequestration underscores the need for more focused research and conservation efforts to protect these unsung heroes in the fight against climate change.

Image Credit - https://ifsmalta.org/courses/award-in-environmental-social-and-corporate-governance-esg/

Route 2 – ESG Investing is Currently Ineffectual

Despite much hype the sustainability movement globally is painfully slow. Daniel Lopez Dias, CEO and Founder of Route2, in a freewheeling chat with Benedict Paramanand, Editor of SustainabilityNext, reflects on various issues, concepts and trends that are dominating these days.

Daniel did a PhD in Ecological Economics, which involved advising President Obama's Climate Action Plan. In California he worked on Enterprise Resource Planning (ERP) software where he got a patent for integrating business processes with environmental considerations. He taught business sustainability – the construction of Carbon Efficient Stock Indices – at the Tel Aviv University.

Can you explain a bit more about Route2, what do you do?

Route2 collaborates with businesses, investors, and governments to quantify their Value2Society. We forge the links between business performance and sustainability, by quantifying societal impacts through our **Value2Society™ Accounting Software**. We also offer strategic advisory.

I set up Route2 to do its very best to shift the global economy. We have an aspirational goal, to introduce new signals to economy that direct capital to sustainable outcomes.

Once companies effectively integrate sustainability considerations into decision making, to navigate business risks and build

Daniel Lopez Dias, CEO and Founder of Route2

resilience into business strategy, then long term change can take place.

What are the key trends these days?

We are still early in this movement to understand the financial implications of ESG or sustainability performance – for example, what does gender inequality, or a ton of CO2 mean – both in terms of cost to society and cost to business. Companies are still grappling with how to integrate sustainability into the day-to-day running of business, and the trend is, for the majority, to be reactive. It is imperative that the trend changes to a more strategic approach.

So, what phase are we in, in this? One a scale of one to ten?

I would say three.

That's bad.

I've been working in this space for about 25 years. The pace of change is very, very slow. The recent report issued by the UN on the progress of the UN SDGs noted that we are failing miserably. **Only 12% of the 169 targets are going in the right direction.** So, when you think about that, you would argue that countries like the UK, Europe, and North America are obviously not doing enough.

Do you think it is easier for countries like India which do not have these legacy problems to leapfrog in this area?

I'd love to think that is true. I do not know India as well as other countries, but my impression is that there are some fundamentals that are still being worked upon, but I think from a business perspective, once those are stabilized, yes, why not? Why not reach for, or aspire to, something that is an improvement to what is happening in Europe? I think it is a great aspiration to have, and certainly there is the ingenuity amongst the population to do it.

What are the three reasons for the slow pace of change?

Firstly, there is still the primary goal of private profit. That is the core purpose of business and although you are hearing terms like 'purposeful business' it is still very much a label. So there needs to be the primacy of a societal profit. Only this approach can accelerate change.

Secondly, you must put the data systems in place that will allow you to manage your business to drive the non-financials, as well as the financials. This is slowly beginning to take shape, but it is still slow.

And then, thirdly, we have a landscape of haphazard policies that do not give business and the investment community the right signals to make the right investments (to deliver sustainable outcomes). Yet, if you ask me, I blame the government least. I think businesses, particularly in Europe, need to take the initiative and stop using the slow

pace of policy change as an excuse. Businesses still have a lethargic and reactive approach to sustainability, which needs to change.

Talking of systems approach, do you think that artificial intelligence is going to help businesses get better at Sustainability metrics?

AI tools will help but they are not a panacea. It will certainly help in data synthesis when we are looking at big macro datasets. For example, we are currently working on a project where we are integrating Earth Observation Technologies for quantifying impact. We are using AI to help synthesize data and information within remote sensing imagery.

A lot of steps have to happen to accelerate change, but definitely, the advances in these areas will help.

It is interesting that you have done a PhD in Ecological Economics. So, what are the top of your mind trends today in relation to this subject?

The biggest thing for me is the infatuation with GDP growth, as the single barometer of societal progress. This needs to change. We need to promote alternative measures of progress for example, Genuine Progress, Green GDP, Gross National Happiness etc.

The 'De-growth' concept seems to be popular these days?

I think it is an extremely poor term. What we are looking for is a reduction in the material and fossil fuel throughput in an economy combined with an increase in output in qualitative value terms. So, if we can keep on progressing as an economy whilst reducing the material and fossil fuel energy throughput, then we will be in a much better place. I personally do not like the term 'de-growth,' as I believe it is confusing for people. What we should be talking about instead is a reduction in material throughput.

Then, is the 'de-growth' concept closer to 'Green GDP' concept?

There are similarities. Yet, what I do not like about 'Green GDP' concept is that it places emphasis on the natural environment and tends to neglect social issues. So, of these more common alternative macro measures, the Genuine Progress Indicator is favorable.

What are the three drivers that can accelerate the Sustainability movement?

Firstly, and ultimately, it is the consumer. It is me, and you, going into a shop and making choices that send the right signals to the market economy. And then, secondly, you have the investments which have a huge role to play. ESG investing is currently ineffectual, typically using partial, self-selected, disclosed metrics to make performance comparisons and direct capital. Investors need to better understand and compare the totality of impacts, throughout the value chain. Equipped with the right information investors have a huge role in delivering sustainable outcomes. And then the final one, obviously, is the policy landscape.

How can we get consumers to play a bigger role in the transition to a green economy?

Societies and governments need to offer smarter incentives to both rich and not-so-rich consumers to help them make decisions in favor of the planet in all kinds of products – essential and luxury. Only then will consumers drive change.

Wind turbines have an image problem but silent, bladeless designs could change all that - Euronews

Green Building Strategy – Integrating Innovations from East and West

By Ram Ramprasad

Globally, the built environment accounts for 40% of **greenhouse gas emissions (GHG)**. Three materials—concrete, steel, and aluminum—are responsible for 23% of GHG emissions, as reported by Architecture 2030. This has led to the emergence of green building councils and numerous NGOs worldwide, disseminating green building guidelines to professionals in the field. Buildings can now receive platinum awards for achieving full sustainability. While this positive trend deserves our support, there is still room for improvement in integrating the science of architecture from the East with green building technologies worldwide. Going green in construction involves developing a comprehensive water usage strategy, an efficient energy strategy, and a zero-carbon material strategy, all aimed at addressing climate change.

Ancient Science of Architecture

Ancient India's seers developed an advanced science of architecture called "Vastu Shastra" or "Vastu." In short, Vastu aligns structures in a way that creates balance with cosmic forces/energies. The layout design suggests the right placement of kitchen, bedrooms, bathrooms, dining and living rooms, as well as the preferred direction of sleep. Natural materials are used for construction, and the science is based on magnetic forces, the rotation of the Earth, movements of the sun, the five elements of the Earth, cosmic energies, and more. The interior and exterior designs embrace the green building strategies mentioned earlier. The seers believed that Vastu-compliant structures contribute to the well-being, happiness, and prosperity of the people who dwell in them. Similar to good diet, exercise, and positive thinking, living or working in a Vastu-compliant building is considered equally important.

Need for an Integrated Approach

While green building strategies are holistic, they do not explicitly encompass well-being, happiness, and prosperity. To learn more about the science and logic behind Vastu, you can refer to the **link**, which provides a description

written by an individual with a doctoral degree in the subject. Additionally, several books are available on the topic.

Strategy that Integrates Concepts from East and West

A transformative strategy for green buildings is to start with a Vastu template and then incorporate other holistic green technological developments. Some houses in India are already built based on these principles, where Vastu experts, architects, and interior designers collaborate to construct green buildings that are Vastu-compliant. Achieving a 100% Vastu-compliant green building will be possible once the cost of natural materials becomes competitive and the latest green technologies become more widely available. Existing structures can incorporate applicable concepts from Vastu and green building guidelines to make progress.

Rural Strategy for The Less Privileged

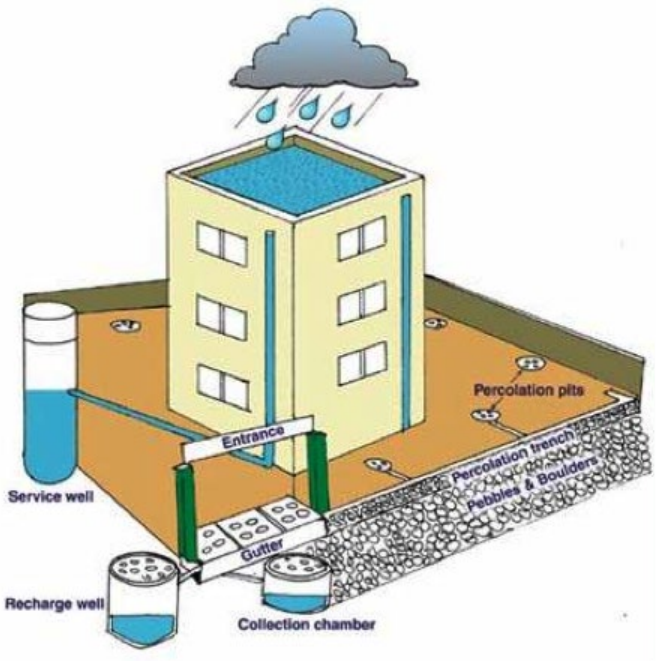
The Indian Green Building Council (IGBC) may need to develop a robust rural strategy for the approximately half of India's population living on less than $3.10 per day. Here are a few thoughts to consider:

- Thannal.com in Chennai provides resources on indigenous natural construction materials for this audience.
- Eco-villages offer interesting green concepts blended with sustainable living and community organization.
- Shigeru Ban in Japan constructs houses with recycled paper tubes for disaster zones at a cost of about $200.
- The central government and a few states have built houses for the poor with solar roofs. Consider converting old cruise ships into residential technical schools/ laboratories to train this segment of the population.
- Plans to rebuild the slums of Mumbai should be based on a low-cost green strategy.
- Models like Habitat for Humanity in the USA should be encouraged to build green and affordable housing for the poor across India.
- The goal for every built area should be to sustain itself independently, with zero reliance on external energy grids. Micro or mini grids can serve very small structures that cannot afford to be independent.

Now, let us explore some holistic technological developments that can be incorporated into a Vastu-compliant house.

Water Strategy

While numerous technologies have been suggested for efficient water use, rainwater harvesting, wastewater reuse, and water



Rainwater Harvesting | IndiaMart

conservation in line with green building guidelines, the following strategies need consideration to make our homes, high-rises, and roads greener:

A) **Liquid CO2:** Developing a new liquid CO2 laundromat industry, operating on a drop-off and pick-up model serving approximately 50-100 households, could make a significant impact. Liquid CO2 washer cum dryers already exist in the USA and serve the hotel industry. Liquid CO2 is biodegradable, recyclable, and non-toxic. India could save at least 5-10 billion gallons of water per day if a large majority of households, hotels, hospitals, and restaurants adopt the liquid CO2 model.

B) **Recharging Groundwater Levels and Making Roads Carbon Sinks:** Recharging dangerously low groundwater levels is crucial, as many houses in India depend on groundwater. Currently, the use of asphalt on roads does not recharge groundwater due to its impermeable nature. Porous asphalt, although slightly better in terms of permeability, falls short of desired outcomes. To recharge groundwater effectively, we should explore bio-asphalt that uses lignin, a plant-based waste product from the paper mill industry. Lignin has the potential to be grown in a lab with microbes, as demonstrated by MIT researchers who successfully grew wood in a lab. Further research is needed to assess lignin's ability to recharge groundwater. Our strategy should aim to develop a biomaterial for our entire road network that recharges groundwater and acts as a carbon sink by utilizing wastewater—a challenge for material scientists to create the perfect circular economy.

Energy Strategy

For built areas, we can explore blade-less wind turbines, such as the ones developed by AerMINE, which do not harm birds and occupy only 1/10th of the space of a flat roof. They can be easily installed and are 50% more productive than solar panels.

https://bit.ly/3JGYz6l

If electricity storage is required, we do not have to rely solely on lithium-ion batteries for transportation or home us Scientists at Texas A&M University have discovered a 1000% difference in the storage capacity of metal-free, water-based electrodes. Their findings were published in Nature Materials in March 2023. Organic polypeptide and wood batteries also show promise. The goal for every built area, whether in urban or rural regions, should be to generate 100% of its energy needs. Technology already exists to minimize our dependence on fossil fuels. **An ideal energy strategy should have the lowest possible land, water, and resource footprint.**

HomeBiogas in Israel offers a unit that converts organic waste to biogas, providing greater self-reliance for built areas. Cambridge University in England has invented a plant-based film, a daytime radiative cooling (DRC) material that cools when exposed to sunlight and rivals air conditioning units in its cooling capacity. Emulating such decentralized and self-reliant strategies will enable us to achieve net-zero emissions faster than anticipated. Consider supporting a startup that offers an integrated and demonstrated cost-saving solution by combining wind, solar, cooking gas, and water usage. SolarSkyrise in the USA partially follows such a model. They capitalize on the finding that 2-3% of buildings with high square footage in major US cities account for 50%

of the emissions in that city (Source: Edward Mazria, Architecture 2030). Analytics can be a valuable tool for honing our strategies. Governments may need to create tax incentives for both startups and consumers to encourage faster adoption and uptake.

Materials Strategy

Biomimicry or biomimetics has inspired many efficient building designs, drawing inspiration from termite mounds, beetles, pine cones, lotus flowers, and more. Green concepts are evolving towards "living building materials." The idea is that if a coral reef can build and repair itself, we can develop materials that mimic this process. Self-healing concrete has been developed by Binghamton and Rutgers University, where dormant fungi spores in the concrete become active when cracks occur, repairing the damage. BioMason in the USA produces cement and bricks using microbes, boasting the lowest carbon footprint. Mycelium bricks have been used in building construction, and India's practice of burning crop residue can potentially be transformed to produce mycelium bricks. Ecovative in the USA creates everyday materials using mycelium. Green City Solutions in Germany offers a special type of moss that absorbs pollutants from the air and cools the surrounding temperature, making it suitable for use on fenced border walls in India. While not a living material, Boston Metals in the USA produces green steel with no emissions in its production. Carbon Limit in the USA licenses its green cement technology to any cement maker, as its concrete captures and stores carbon. Zaak Technologies in Germany upcycles waste from various industries to produce construction materials—for example, converting fly ash from coal plants into Lypors, an alternative to sand. New developments in bio-composites, materials science, biology, and the use of natural materials like bamboo, hemp, or flax can inspire individuals to become entrepreneurs and contribute to the green building movement.

Green startups and businesses of all types can scale up to enable cost competition against existing CO2-emitting materials such as concrete, cement, bricks, steel, etc. It is crucial to develop green and sustainable concepts for both the rural poor and the urban sprawl of India without further damaging the environment. By seamlessly integrating the scientific wisdom of Vastu from ancient India with novel developments in materials science, biology, and microbiology, we can effectively reduce greenhouse gas emissions and create a more sustainable future.

Ram Ramprasad, a sustainability advocate and graduate of Yale University and Madras University, has contributed several articles on sustainability to magazines in India. He also served as a Global Marketing Director for a Fortune 100 company in the USA.

https://mitbio.edu.in/specializations-offered/environmental-engineering/

Indian Parents are Turning Green

By SN Staff

A new global survey by HP reveals a strong inclination among Indian parents towards sustainable consumption, with 84% showing a preference for products from companies with sustainable practices. The study also showed that 98% of Indian parents have deep concerns about climate change, with rising temperatures and cost being the primary worries.

The survey, which included 1,000 respondents from India out of 5,000 globally, found that a majority of Indian parents (80%) are willing to pay more for eco-friendly products. Furthermore, 61% of Indian parents have re-evaluated their employment due to their employer's commitment to environmental and social issues.

Gurpreet Singh Brar, Vice President, **HP India** market "We are witnessing a remarkable transformation in the mindset of Indian parents when it comes to climate change. The fact that parents express such deep concern is a powerful testament to the growing awareness and urgency surrounding this global issue. It is truly heartening to observe a significant shift in consumer behavior, with an overwhelming majority of parents actively prioritizing sustainability."

Willing to invest extra in eco-friendly products from companies they trust

Indian parents exhibit a strong inclination towards sustainability, actively engaging in eco-friendly practices =and expressing a willingness to pay extra for environmentally conscious products. According to the survey, 80% of Indian parents do not mind paying more for items that are environmentally friendly.

Indian parents are actively seeking out businesses with sustainable practices (84%) and prioritizing purchasing sustainably sourced items (85%). This inclination may stem from the environmental challenges and pollution associated with population growth and urbanization.

Figure 1 HP's new findings

Navigate climate concerns: Rising temperature and cost take priority

Indian parents place a higher priority on rising temperature and cost as climate change concerns, with mothers (19%) expressing heightened worry over the impact of having children compared to fathers (8%). This prevailing apprehension has significantly influenced the perspectives of both mothers (63%) and fathers (56%), as well as the younger generation. Notably, 66% of Generation Z and 60% of Millennials feel that their concerns around climate change are making them rethink their plans for expanding their households.

Choose Place of Work that have Sustainability initiatives

61% of Indian parents consider companies' environmental practices as a crucial factor in their career choices, recognizing the importance of aligning their professional lives with their values. 66% of mothers and over half of fathers (58%) in India have reconsidered the company they work for or changed companies due to commitment to sustainability initiatives. This trend reflects a potential growing awareness among parents in India of the critical role that companies play in driving positive change.

The full report can be accessed **here**.

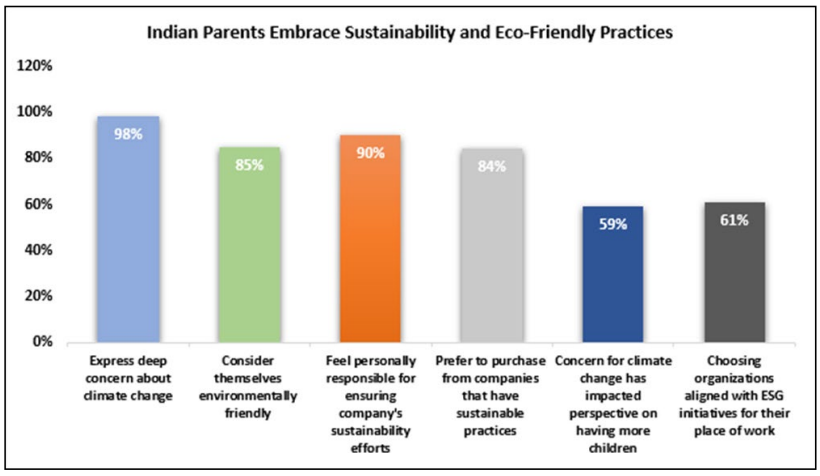


Figure 2 HP surveyed over 5,000 respondents globally, including 1000 from India

WEEC in Abu Dhabi in Jan 2024

By SN Staff

The 12th **World Environmental Education Congress (WEEC)** is to be held from 29 January to 2 February 2024 in Abu Dhabi. This year, the congress is accepting abstracts submissions in four languages – French, Spanish, Arabic, and English. The deadline has been extended to 31 August 2023.

This multilingual approach is a first for the WEEC, marking a significant step towards inclusivity and diversity in the field of environmental education. It reflects the congress's commitment to fostering international collaboration and exchanging innovative ideas from a broad spectrum of cultures and perspectives.

The WEEC had invited environmentalists, educators, industry leaders, and anyone passionate about sustainability to submit their abstracts and present their innovative solutions to a global audience.

View all congress themes:
https://lnkd.in/dyfiwDgJ

For more information, visit: **weec2024.org**

12th WEEC
CONNECTING PEOPLE
CREATING TOMORROW
29 JAN - 02 FEB, 2024 | ABU DHABI

We Only Have Human Words to Describe Non-Humans

By J Shiruti

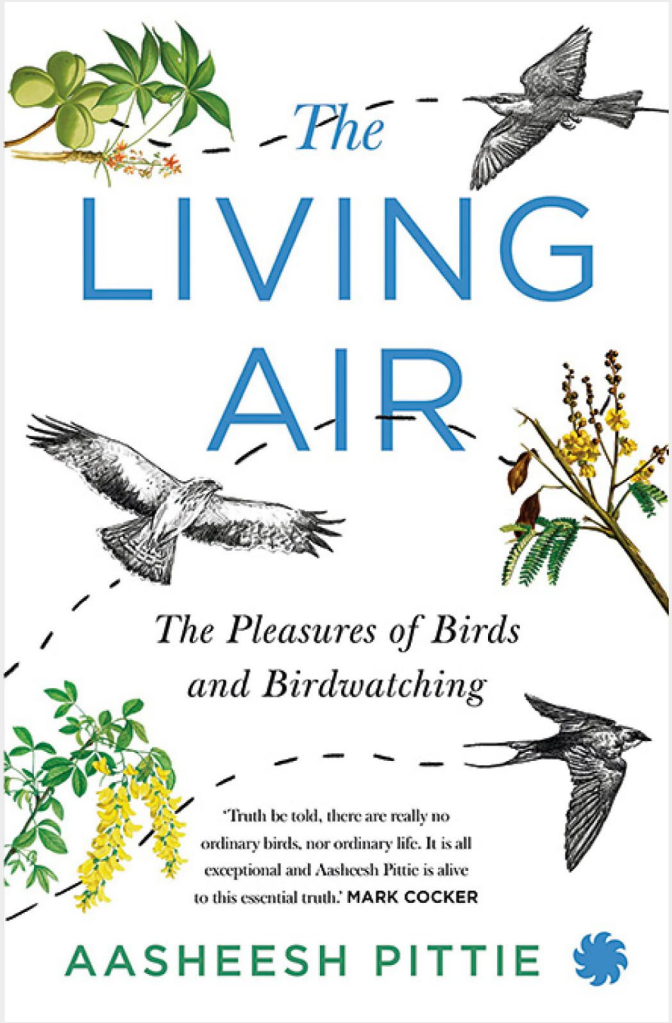
The much-anticipated book launch took place mid-June in Hyderabad. Pittie, known for his significant contributions to South Asian ornithology, including the editing of the ornithological journal 'Indian Birds'. His notable work includes 'Birds in Books', 'Three Hundred Years of South Asian Ornithology', and 'The Written Bird: Birds in Books.

The launch was followed by a lively discussion between the author and Sita Reddy, a writer, researcher, and curator, whose recent work on nature has focused on cultural histories of flora, trees, forests, gardens, landscapes, and ecosystems.

Pittie revealed that the title '**The Living Air**' was inspired by the inner eye of human beings, a poignant reminder to live in the moment. This concept, he explained, resonated throughout the book, creating a tapestry of thoughts dedicated to the art of mindfulness and presence.

GISS

General impression of size and shape" (GISS) is about reflection and understanding, and the identification of birds can be challenging based on their general look alone. The term GISS, derived from the concept of identifying aircraft, plays a crucial role in bird identification.



He stressed, "The more you are in the field, the more it gets easier for you to identify birds."

Anthropomorphism

"Anything we write is a form of anthropomorphism because we only have human words to describe non-humans. You can't cross the blood-plasma barrier." This insightful remark sparked a stimulating

discussion about the limitations and capabilities of language in understanding and describing the non-human world.

Pittie recommends listening to Nikhil Banerjee's 'Megh' during the monsoon, a personal ritual that helps him connect with nature and birds on a deeper level. He shared a list of book recommendations for the audience, fostering a shared spirit of discovery and learning. The event was not just a book launch but a platform encouraging continuous education and appreciation for the natural world.

The launch event nicely blended literature, ornithology, and environmental consciousness. With stunning visuals and personal insights Pittie highlighted the critical role that nature, and specifically birds, play in our understanding of the world around us and our place within it.

Aasheesh Pittie

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