

iMPACT

Insights & Inspiration for Social Innovation

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SUSTAINABILITY: The Biodiversity Imperative



SUSTAINABLE AGRICULTURE SUMMIT AFRICA 2019

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- E-Agriculture and Online Market Places
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By Geography

African Countries	65%
Europe	10%
India	10%
Middle East	5%
Asia	5%
Americas	5%



By Industry

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Commodity Traders	20%
Non-Government Organisations	8%
Government & Industry Associations	5%
Fast Moving Consumer Goods	5%
Technology & Solution Providers	5%
Certification	3%
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1
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ONCE UPON A TIME,
THERE WAS AN ADVENTURER



24 THE BIRDS AND THE BEES: LESSONS FROM A SOCIAL ENTERPRISE

Last Forest Enterprises is a social initiative based in South India that supports communities dependent on biodiversity for their livelihood. iMPACT traces their journey, and some lessons they learned along the way.



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PHOTO CREDITS

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- Verywell Health



18 WINDS OF CHANGE

Renewable energy, despite its promise of a cleaner planet, is not without its problems. Meera Rajagopalan explores wind energy and its effect on bird fatalities, and how organizations such as Birdlife International promote clean energy from a biodiversity prospective.



37 FACE-OFF: END-OF-LIFE IDEAS FOR PLASTIC

Plastic pollution is putting countries in danger, yet improper waste disposal continues. iMPACT takes a look at three possible solutions for reincarnated plastic.



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52 SHORT FICTION: MONARCH BLUE

"Monarch Blue", the prize-winning entry in the 2018 Everything Change Climate Fiction contest, allows us a peek into a world where Brie, a pregnant young woman, is forced to work as an artificial pollinator, a job made necessary by the near-extinction of butterflies.

Editor's Note

Dear reader,

At the outset, the entire iMPACT team wishes you a very happy 2019!

As a new year rolls around, the dust on the Intergovernmental Panel on Climate Change (IPCC) report, warning of the impacts and costs of a rise in global temperatures of just 1.5°C (2.7°F) has settled somewhat. The fact that it might be closer than we had imagined—as close as 11 years—was a sobering wake-up call, but not entirely unexpected.

If we care to look hard, we can find our future reflected in that of some of the ecosystems that have already faced the negative impacts of global warming: the Polar regions have been rapidly melting, and the ecosystems that support it have started to face the effects. African Lions' habitats have shrunk, and they live in closer proximity than ever before.

Biodiversity is affected by many a factor, including, most frequently, a loss of habitat, deforestation, and, of course, climate change.

However, biodiversity has received little to no attention at the policy and government levels, even within climate change discussions. For instance, the recent meeting of the U.N. Convention on Biological Diversity (COP14) held at Sharm el Sheikh in Egypt received very low attention, compared to counterparts in climate change.

Even as countries promised to at least halve the loss of natural habitats in 2010, under the Aichi Biodiversity Targets, precious little has been implemented. And when it has, it has merely been on paper.

Hopes are now pinned on the 2020 Beijing COP, where the hope is that the Aichi targets are looked at closely, and that the heads of countries rally around the issue of biodiversity in a more cohesive manner.

This issue of iMPACT looks at biodiversity and how it intersects with other areas of development: wind energy and bird fatalities, for example. This issue also takes a deep look at one social enterprise that ensures the well-being of the communities that are most dependent on biodiversity for their livelihood.

We also feature the winning entry of the 2018 Climate Fiction Short Story contest conducted by the Imagination and Climate Futures initiative of the Arizona State University. It allows us a peek into a dystopian world where human being try to fill the vacuum caused by the extinction of species—in this case, the Monarch Butterfly.

We hope you enjoy this issue.

Warm regards,



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Meera Rajagopalan
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Hong Kong Chemical, Biological & Environmental Engineering Society (HKCBEEES)
- 2 3rd International Conference on Food and Agriculture Technologies**
Langkawi, Malaysia | January 12-14
Journal of Advanced Agricultural Technologies
- 3 World Future Energy Summit**
Abu Dhabi, United Arab Emirates | January 14-17
Reed Exhibitions
- 4 18th International Electronics Recycling Congress 2019**
Salzburg, Austria | January 16-18
ICM AG
- 5 EarthFest 2019**
Singapore | January 20
The Center for a Responsible Future
- 6 EmTech Asia 2019**
County Hall, Riverside Building, Belvedere Road, Singapore | January 22-23
MIT Technology Review
- 7 Asia Financial Institutions Forum**
Bangkok, Thailand | January 22-23
USAID, Cardano Development
- 8 5th Biomass & BioEnergy Asia**
Bangkok, Thailand | January 23-24
Centre for Management Technology
- 9 8th Annual International Conference on Sustainable Energy and Environmental Science**
Singapore | January 28-29
Global Science and Technology Forum
- 10 Education Innovation Conference**
New Delhi, India | February 1
World Bank
- 11 Global Summit and Expo on Power & Energy Engineering**
Dubai, United Arab Emirates | February 18-20
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- 12 International Conference on Sustainable Development**
Dhaka, Bangladesh | February 19-20
World Bank
- 13 Australian Waste to Energy Forum 2019**
Victoria, Australia | February 19-21
Australian Industrial Ecology Network
- 14 EduTECH Philippines 2019**
Manila, Philippines | February 20-21
Terrapinn
- 15 6th Sanklap Africa Summit 2019**
Nairobi, Kenya | February 21-22
Intellectap
- 16 4th Annual AIDF Africa Summit**
Nairobi, Kenya | February 26-27
Aid & International Development Forum
- 17 3rd World Congress on Climate Change**
Prague, Czech Republic | February 27-28
EuroSciCon





18 Energy From Waste Conference
London, United Kingdom | February 27-28
Mark Allen Group

19 2nd Annual Renewable Energy Week
Singapore | March 11-14
IBC Asia

20 Vietnam Wind Energy Summit 2019
Hanoi, Vietnam | March 18-19
Neoventure

21 The Bond Annual Conference and Awards
London, United Kingdom | March 18-19
Bond

22 World Agri-Tech Innovation Summit
San Francisco, USA | March 19-20
Rethink Events Ltd

23 Future Food-Tech
San Francisco, USA | March 21-22
Rethink Events Ltd

**24 Land and Poverty Conference 2019:
Catalyzing Innovation**
Washington DC, United States | March
25-29
World Bank

25 10th ADB Business Opportunities Fair 2019
Manila, Philippines | March 27-28
Asian Development Bank

**26 The Asian Conference on Education &
International Tokyo, Japan | March 25-27**
The International Academic Forum

27 Smart Energy Conference & Exhibition
Sydney, Australia | April 2-3
Smart Energy Council

28 The Wind Show Vietnam 2019
Ho Chi Minh City, Vietnam | April 3-4
Terrapinn

To include your event in this section, please email
details of the event to editor@asiango.org

Blockchain and AI Could Help Protect the Planet: Study

Emerging technologies such as blockchain could help solve the world's biggest environmental issues, according to a report by the World Economic Forum.

According to the report, "Building Block(chain)s for a Better Planet," technologies such as blockchain, artificial intelligence and Internet of Things (IoT) are deemed as "transformative game-changers", and have the potential to address climate change, biodiversity loss, and water scarcity.

Blockchain, for example, can be utilized to support a new policy on preserving biological diversity of the world's oceans by tracking fishing activities on the high seas and identifying illegal behavior.

"If you take the law of the sea, you absolutely need that framework and negotiation, a set of principles, but how do you police and enforce it?



Technology," said Dominic Waughray, head of the World Economic Forum's Centre for Global Public Goods.

Besides saving Earth's waters, researchers predict that blockchain could allow next-generation sustainability monitoring, reporting and verification potential, automatic disaster preparedness and humanitarian

relief and earth-management platforms such as blockchain-enabled geospatial platforms which are currently being explored.

AI, on the other hand, is projected to promote smart agriculture, improve energy storage and efficiency, and encourage eco-driving through AI-guided autonomous vehicles. 

USAID Body to Boost Resilience of Disaster-Prone Areas



The U.S. Agency for International Development (USAID) confirmed its plans to establish a new body, to better resilience of disaster-prone areas, so that aid programs become more effective.

The proposed "Bureau for Resilience and Food Security" will have an estimated 180 staff and will combine USAID's food security work with programs aligned on water and climate change to promote better resilience against natural disasters and health threats.

Experts hope that if the U.S. Congress approves the new body, it will help strengthen the momentum behind the global poverty-reduction approach and open doors for longer-term finance for resilience programs.

Earlier last year, U.S. President Donald Trump ordered cutting of the U.S. budget for foreign aid as part of the 2019 Federal Budget, while also identifying countries that are "most deserving" of humanitarian aid. 

Malaysia: The New Dumping Ground in Asia

Malaysia has become the world's rubbish bin despite its strong stance against plastic pollution, according to Greenpeace Malaysia.

From January to July 2018, Malaysia imported 754,000 tons of plastic waste, equivalent to the weight of approximately 100,000 adult elephants. The US, Japan, and the UK were named three of the biggest waste exporters, accounting for 53% of the total waste.

Other countries such as Japan, Spain, Hong Kong, Australia, Belgium, France, and Estonia also made the list of top waste exporters.

According to "The Recycling Myth" report, the total value of Malaysia's



waste import accounted to more than RM 48 million (USD 11 million). Despite the overwhelming influx of waste import, only 9% of the plastics can be recycled. About 12% are incinerated while 79% end up in landfills.

The new data comes after China, previously the biggest plastic waste importer, banned all plastic waste import last January, effectively shifting the junk crisis to Southeast Asia. As response, the Malaysian government

ordered a permanent ban on plastic waste import, but foreign waste continue to penetrate the country, especially in poorly regulated areas.

In Selangor alone, about 500 illegal plastic waste facilities were discovered by Greenpeace Malaysia. These illegal facilities and their indiscriminate burning of unrecyclable waste cause several environmental problems and threaten the health of residents. **i**

£35m UK Fund to Mitigate Afghan Food Crisis



In response to the alarming food crisis and drought in Afghanistan, the UK government announced that it will pledge a new £35m fund to provide food, shelter and clean water to affected Afghans.

Over 250,000 people are reportedly displaced brought by the ongoing drought and conflict. According to the Afghan Ministry of Agriculture, the drought has caused a 45% decrease in agricultural output last year, which resulted in widespread malnutrition in children.

Through the assistance fund, tents and blankets will be provided to support up to 260,000 Afghans who left their homes ahead of a severe winter. Food or cash transfers to buy essential items will be also given to more than 600,000 people, with a monthly allowance of highly nutritious food to prevent malnutrition in young children for every household.

Drought-affected individuals will be provided access to healthcare, clean water and sanitation to keep them safe in their homes over winter. **i**

Sustainability is no longer about doing less harm. It's about **doing more good.**

Jochen Zeitz
Founder of the Zeitz Foundation for Intercultural Ecosphere Safety

The sustainability train has left the station. **Get on board or get left behind...** Those who fail to bet on the green economy will be living in a grey future.

António Guterres
Secretary-General of the United Nations

You can make a lot of speeches, but the real thing is when you **dig a hole, plant a tree, give it water and make it survive.** That's what makes the difference.

Wangari Maathai
Kenyan Environmental Political Activist

The **Earth** is not dying, it **is being killed**, and those who are killing it have names and addresses.

Utah Phillips
American Labor Organizer and Folk Singer

There is no such thing as 'away'. When we **throw** anything away it **must go somewhere.**

Annie Leonard
Creator and narrator of the documentary, *The Story of Stuff*

When you are doing the right thing for the Earth, she gives you the right company.

Vandana Shiva
Indian Environmental Activist

Destroying rainforests for economic gain is like burning a Renaissance painting to cook a meal.

E.O. Wilson
American Biologist, Naturalist, and Author

The **worst** environmental decision you can make as a human being is **to have 14 kids.**

Jane Velez-Mitchell
Social media journalist and founder of #JaneUnChained, a digital news network for animal rights and the vegan lifestyle

LIFE IN PLASTIC, IT'S NOT FANTASTIC

A total of
8.3 billion
metric tons of plastic has
been produced since the
1950s.

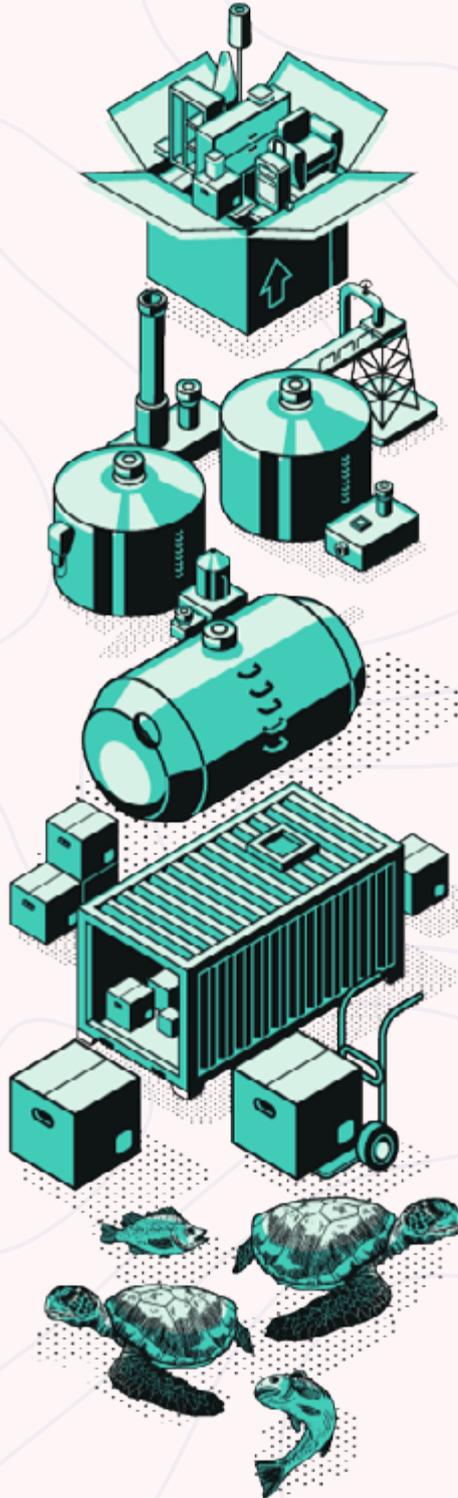
91%
of plastic waste
isn't recycled.

Plastic takes
450 years
to decompose.

Globally,
1 MILLION
plastic bottles
are bought
every minute
and is expected to
rise to trillion by
2021.

An estimated
100,000
turtles and marine
mammals which include
dolphins, whales and
seals, die every year due
to plastic marine litter.

An average person eats
70,000
microplastics each year.



Top 10 Biggest Plastic Polluting Companies

- 1  Coca-Cola
- 2  PepsiCo
- 3  Nestlé
- 4  Danone
- 5  Mondelez International
- 6  Procter & Gamble
- 7  Unilever
- 8  Perfetti van Melle
- 9  Mars Incorporated
- 10  Colgate-Palmolive

Beating the Bottle Know Your Recyclables

-  Aluminum and Tin Cans
-  Papers (Newspapers and Magazines)
-  Plastic Bottles
-  Batteries (Car and dry-cell batteries)
-  Electronics (Computers, televisions, mobile phones)
-  Cardboards
-  Glass Bottles

Sources:

- Production, use, and fate of all plastics ever made, Science Advances Magazine, 2017
- Marine Debris Is Everyone's Problem, Woods Hole Sea Grant, 2018
- Low levels of microplastics (MP) in wild mussels indicate that MP ingestion by humans is minimal compared to exposure via household fibres fallout during a meal, ScienceDirect, 2018
- Factsheet: Marine Pollution, Division for Sustainable Development Goals
- 10 Shocking Facts about Plastic, National Geographic
- These 10 companies are flooding the planet with throwaway plastic, Greenpeace, 2018
- Various Recycling Facts, Conserve Energy Future
- What Can I Recycle, Waste Management Inc.
- How Do I Recycle? Common Recyclables, United States Environmental Protection Agency

One Man's Infection is Another's Energy!

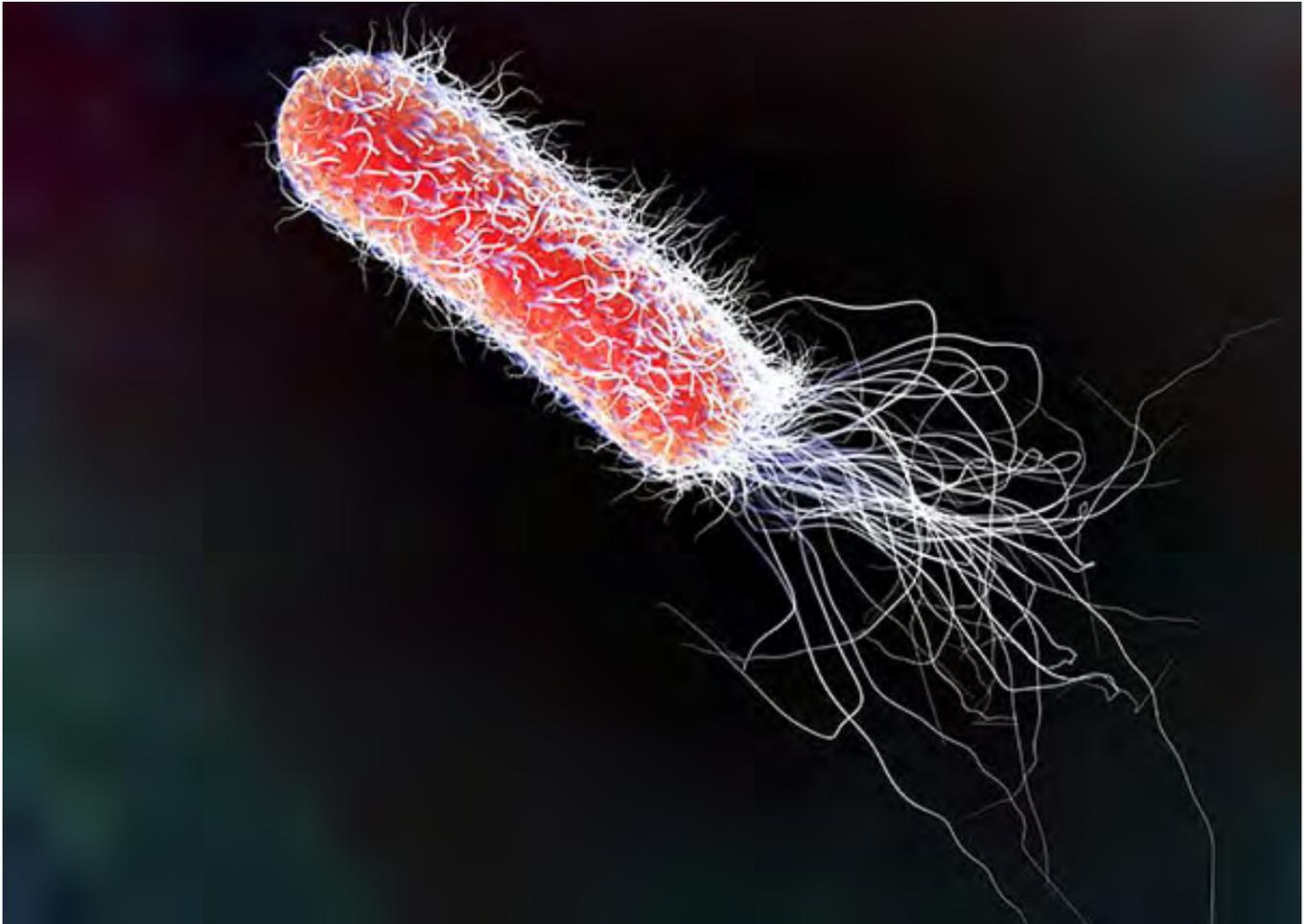


Image courtesy of BioCote

A genetically-engineered bacterium could power solar cells without drawing energy from the sun, according to the latest study conducted by a team of researchers from Canada.

E.Coli, known to cause several diseases including urinary tract infection and pneumonia have been tested to produce affordable yet sustainable solar cells called “biogenic cells”, made of live organisms.

Behind the innovation is the bacteria's natural ability to convert sunlight into energy through photosynthesis. Researchers from the University of British Columbia developed an idea involving the extraction of the natural dye produced by the bacteria for photosynthesis to create biogenic solar cells. However, the process was costly and harmful due to the presence of toxic solvents, leading the team to create a revamped solution.

The dye is now left in the bacteria, which are then induced to produce huge amounts of lycopene, considered effective at collecting light and converting it to energy.

A mineral that acts as a semiconductor is then coated with the bacteria before applied on a glass surface. The result is a generated current density of 0.686 milliamps per square centimetre—nearly double the 0.362 produced by other cells in the field.

The technology is, however, in its nascent stage, as most bacteria die during the process, leading to less efficiency. Researchers hope the technology can be used in industries such as mining and deep-sea explorations where equipment is used below the ground with little to no ambient light. 

Ancient Art as Future Saviours

Tai-Chi is more effective in preventing dangerous falls in the elderly compared to regular exercises, according to a study in JAMA Internal Medicine.

The Tai-Chi form “Tai Ji Quan: Moving for Better Balance (TJQMBB)” had a 58% reduced risk of falls compared to stretching, and 31% compared to multimodal exercises (MME), which incorporates a mix of balance, aerobics, strength, and flexibility movements.

A total 670 participants who were either considered at risk for falls or who had impaired mobility were tested for the study. The participants were randomly placed into one of the three groups; and advised to attend a twice-weekly 60-minute session in Tai Chi, stretching, or the MME program for 24 weeks.

The stretching group recorded a whopping 363 falls, while the MME group registered a total of 218 falls as compared to the 152 falls of the Tai-Chi group.



Image courtesy of Verywell Health

According to the Centers for Disease Control and Prevention, falls are the leading cause of injury-related deaths in ages 65 or older. Research says that when an adult between the ages of 65 and 84 breaks a hip, the risk of death triples in the next 2 years.

TJQMBB was developed by Fuzhong Li, Ph.D., a Senior Scientist at Oregon Research Institute, and uses an eight-core exercise which aims to stimulate and integrate the skeletal muscles, the senses, and the brain to prevent falls in older adults. 

Walking Down the (Plastic-Free) Aisle

The world’s first plastic-free supermarket aisle has opened its doors in Netherlands, marking a new milestone on the planet’s war against plastic pollution.

Launched by the environmental group, A Plastic Life, more than 700 plastic-free products—dairy, rice, fresh fruit and vegetables—are arranged in a special aisle in a metro-sized pilot store by organic supermarket chain Ekoplaza.

The campaign saw further roll-out across 74 other branches of Ekoplaza in Netherlands and will be used as a testing ground for new compostable bio-materials, and use of traditional materials such as glass, metal, and cardboard for packaging. 



Image courtesy of Pixabay

Quenching Thirst Through Mist

With climate change predicting a thirstier future, a sustainable innovation hopes to provide water to the world's driest regions by harnessing the power of nature. More than 2 billion people do not have access to clean water, according to the World Health Organization.

Pioneered by a Canadian NGO, Fogquest utilizes salt and sunlight to extract water from sources such as fog and store it into collectors for later use. Behind the science is the ability of salt such as copper chloride, copper sulphate and magnesium sulphate to harvest water from air with relative humidity as low as 15%. When exposed to sunlight, even the weakest rays can help release the water and produce fresh water.

By collecting water from mist, Fogquest aims to provide potable water to some of the Earth's most arid



Image courtesy of Dan Carlson on Unsplash

regions such as sub-Saharan Africa. Several fog collectors were also installed in countries such as Peru, Guatemala, Eritrea, Namibia, Chile, Oman, and Nepal to combat drought due to the rising heat.

While deserted areas do not experience regular fog, Fogquest says that the salt can still absorb water from the atmosphere during the night and create water after dawn. [i](#)

Songs from Marine Plastic

An environmental campaign in Australia is literally making a song and dance of ocean trash! As part of "Beat the Bottle", an environmental campaign organized by Sydney Water in partnership with creative agency Republic of Everyone, volunteers collect litter along beaches and in waterways. Plastic bottles collected are cut into smaller pieces before being pressed into a working vinyl through special equipment installed at the clean-up site.

The limited-edition vinyl is made of 90% recycled sea litter and contains the energetic track "Come Clean", inspired by the sounds of marine plastic and created by emerging Sydney musicians Chaos Emerald and Jayteehazard. [i](#)



Photo from: B&T Magazine



Beyond Basic Instincts: Focus on Socio-Cultural Ties for Better Conservation

Conservation campaigns may be more successful if the emphasis were on local cultural and social ties of wildlife to local communities, suggests Diogo Verissimo.

Image courtesy of Unsplash | AJ Robbie

It is often said that the poor cannot afford to care about nature. After all, they are too busy trying to survive. This seems pretty intuitive. If you are hungry or thirsty, everything else is secondary. But reality is a little more complex, at least in the three following ways.

First, we often have an old-fashioned conception of what poverty looks like at the global scale. When we think of the world's poor, we often think of those in extreme poverty, defined by the World Bank as living with under USD 1.90 a day. If we go back 25 years that would have included nearly half of the world, but it currently includes only 10% of the global population. While this is no doubt still too many people, it represents a remarkable improvement, especially if we consider the rapid increase in the Earth's population. It also means that less people have a livelihood focused solely on daily survival.

Second, just like any top Bollywood actress or Hong Kong businessman, those that live in poverty have needs and aspirations that go beyond basic survival, and that means their decisions are not always about basic needs. This notion that basic needs always trump any other consideration comes from Maslow's "hierarchy of needs", which posits that people strive to fulfilled key needs such as food, drink and shelter, before considering needs such as friendship and belonging as well as self-esteem and reputation. The trouble is that little evidence has been found for the ranking of needs that Maslow defined, or even for the existence of a definite hierarchy at all.

It seems instead that needs function much like vitamins, with the need for fulfilling each of them being rather independent of the status of the others. It should also be added that Maslow's work assumes an individualist world view, where



Chico Mendes. Image courtesy of National Wildlife Federation

the success of the individual is the end goal of a lifetime. This is quite different from the dominant worldview of many Asian countries which has a much stronger focus on community and collective goals.

Third, accepting that the world's poor have broader goals and ambitions in life means recognising that their decisions about how to use and manage a natural resource such as water or timber are not always about short-term gain. This recognition opens up avenues for promoting environmental stewardship among this group.

The world's underprivileged are more directly reliant on natural resources than wealthier citizens, which means that they have the largest incentive to use natural

resources sustainably and are most affected when environmental degradation occurs. That is why so many of the world's frontline environmental activists, such as Indra Pelani in Indonesia, Chico Mendes in Brazil, or Saw O Moo in Myanmar, are from low-income countries and disadvantaged backgrounds.

While necessity is a strong argument to support the sustainable use of resources, there are often other key motivators, linked to the need for social interaction and belonging, which can also be powerful. These are often clearly seen in the ways that nature and wildlife take on important cultural and social meanings, leading to a much higher acceptance and

tolerance of restrictions of resource collection and livelihoods disruption in the case of human-wildlife conflict with animals such as elephants or tigers. Only in this way can we explain the existence of more than 27,000 elephants and 2,000 tigers in India, one of the ten most densely populated countries on Earth but also one with a large number of poor people.

Focusing on the social and cultural dimensions that make up the fabric of communities worldwide and emphasizing the role of interactions with nature in shaping their collective identity can be a powerful way of communicating the value of sustainable use of natural resources.

Examples of these strategies are already being used across the developing world. In the West African island country of São Tomé and Príncipe, local NGO Associação Programa Tatô is reframing the sea turtle as the “mother of the sea” in a national level campaign to reduce the consumption of sea turtle meat and eggs. In a country where most people who have the chance to see a sea turtle come into contact with females that come to nest on the beach, this new frame establishes a link between the animal and family and belonging needs that are commonly not associated with wildlife. The reduction in number of sea turtles poached across the country suggests this is having a positive impact.

This sense of belonging is key to supporting the challenges that any system aimed at managing natural resources faces in the short term, as new constraints imposed by

“**Focusing on the social and cultural dimensions that make up the fabric of communities worldwide and emphasizing the role of interactions with nature in shaping their collective identity can be a powerful way of communicating the value of sustainable use of natural resources.**”

new management rules inevitably create winners and losers. Thus, by balancing these costs with social and emotional benefits, conservationists are able to make a compelling case for conserving biodiversity in many communities around the globe.

Still, it is clear that achieving sustainable management of any natural resource is a challenge, and these connections will become harder in an increasingly urbanized and globalized world where interactions with nature are more limited and the social and cultural links to nature often weakened. The key will be to empower communities worldwide to gain ownership over the resources that they depend on, and in this way enable many of the world’s poor to take their future in their own hands. **i**



Diogo Veríssimo is a postdoctoral researcher at the University of Oxford, UK. He works at the intersection of marketing and biodiversity conservation, in particular the design and evaluation of behaviour change campaigns. He can be reached at verissimodiogo@gmail.com.



WINDS OF CHANGE

The wind energy industry is roiled by accusations of not being bird-friendly, but fortunately, help is at hand.

By Meera Rajagopalan

Image courtesy of TPSW | Miguel Soriano

In a 2016 YouTube ad promoting wind energy, the setting cannot be more idyllic. A wind turbine seems to guard a field of bright yellow sunflowers, and after a few shots of onshore and offshore turbines, standing in a row like soldiers about to go to war, there is a close-up of the blades, exhorting the viewer to “use wind power.”

Somewhere between the following comments that speak of the supremacy of wind power, and a few that talk about its adverse effect on local bird population lies the irony of renewable energy: in the race to get to sustainable energy, we may be ignoring another important piece of sustainability: biodiversity.

Wind energy is one of the most

sought-after renewable energy sources today, and Asia is surging ahead in the quest for renewables. According to estimates by the Global Wind Energy Council, the global installed capacity of wind energy stood at 539 GW in 2017, with nearly 10% of it added just that year. China leads the world in wind power generation and India is at fourth place. However, low-income



Image courtesy of www.pexels.com



countries are seeing tremendous growth over the last few years, with Argentina, Peru, Egypt, Vietnam, and Iran showing the most increase in 2018, according to a report by Windpower Intelligence.

What is often left out of the statistics is the danger that wind farms pose to bird and bat populations, injured or killed by the large blades of the turbines. Estimates peg 300,000 yearly fatalities of birds and bats in the United States alone. There are no comprehensive estimates for countries in Asia, but pilot studies have shown similar fatalities in China and India.

Consequently, organizations such as BirdLife International, a partnership of bird conservation

groups, find themselves walking a thin line: that of advocating an in-depth look at wind energy projects from a biodiversity lens, and seeming to oppose renewable energy.

While countries such as the U.S. and U.K. have developed a detailed set of guidelines for the siting and working of wind energy projects, other countries are slow to respond, yet others have simply not brought that to the table.

BirdLife International has worked on the issue for years, and its various projects have created resources and advocacy to ensure that in the fight against climate change, birds do not end up as collateral damage.

Consequently, under the aegis of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), the Energy Task Force (ETF) initiative was constituted in 2015 to reconcile

the two: the soaring development of renewable power against its attendant damage to birds and other migratory species, including marine ecology, in case of offshore power. Coordinated by BirdLife International, the Energy Task Force helps government and business to effectively identify cost-effective and wildlife-friendly sites for renewable energy development. While the focus has thus far been on West Asia and northern Africa, the ETF is now looking to expand its footprint in Asia.

Ashton Berry, global climate change programme coordinator at BirdLife International, and global coordinator of ETF, says this is the right time to set in place policies and processes, considering the growth in the region.

“The key thing to remember is that we are not against renewable energy. Far from it. We are saying that in certain circumstances, there

“Unfortunately, most developers currently choose a site because of the ability to acquire the land and/or the wind resource. The environmental suitability of a site is often a lower priority for developers.”

Edgare Kerkwijk
Board Member
Asia Wind Energy Association

is conflict with wildlife, and there are cases where these problems can be quite severe. Through appropriate strategic thinking, we can find locations that are not harmful to local bird and bat populations,” says Berry.

BirdLife International created the Soaring Bird Sensitivity Mapping Tool, the first regional sensitivity mapping tool centred on the Rift Valley and the Red Sea flyway. It has since been expanded to cover much of the Mediterranean, North Africa and the Middle East. BirdLife has also collaborated with various other organizations to launch the iBAT—the Integrated Biodiversity Assessment Tool, to provide information on all aspects of biodiversity of a particular region.

Tris Allinson, senior global science officer at BirdLife and ETF member, says that the tools are ready, as are many other resources, but the need is for them to be used, and that’s where the ETF comes in.

Part of the mandate of the ETF has been to promote the idea of considering biodiversity to the planning stage of any renewables project, and to influence governments and policy makers to do the same. The ETF works with organizations like the World Bank and governments such as Japan’s, which has undertaken development of a sensitivity tool especially for the country.

In the years since its founding, the ETF has proven an enabling environment, helping governments and policymakers understand how the renewables sector can be more robust, says Berry.

The ETF performs other functions too, apart from advocacy and spreading the word. It is a hub of research on the topic, and also provides guidelines and other assistance, including mitigating measures for commissioned projects.

One wind farm in Altamont

Pass in California in the U.S. worked collaboratively with conservationists to work toward mitigating existing danger to raptor populations, including the Golden Eagle. However, replacing wind turbines once environmental issues are discovered can be a very costly affair. A few turbines in the U.K. have also been asked to be taken down, because of damage to the environment.

However, the juggernaut of the renewable energy sector does not pause for clauses. Edgare Kerkwijk, board member of the Asia Wind Energy Association, an industry association for the Asia-Pacific region says that it is a sad fact that in many countries, there is little or no regard for the environmental implications of the renewable energy sector.

“Unfortunately, most developers currently choose a site because of the ability to acquire the land and/or the wind resource. The environmental suitability of a site is often a lower priority for developers,” he says, adding that offshore wind could be a solution where there might be lesser impact on ecology.

In the U.S., efforts to mitigate impact on wildlife have been underpinned by decades of research, says Jocelyn Brown-Saracino, of the Wind Energy Technologies Office of the U.S. Department of Energy. In fact, there are several technologies for the same, she says, including automated detection of eagles flying around wind turbines, with the ability to either trigger a warning signal or shut the turbines down if necessary.



Image courtesy of TPSW | John Orville Ragsac

The ETF and its mandate, in the meantime, are gaining traction. The Government of India is poised to release a set of guidelines to be followed by all wind energy companies to ensure the protection of birds. Several governments have submitted their reports to the CMS, including their measures to mitigate possible danger to birds and bats due to wind projects and electrocution, another common cause of bird deaths.

However, mandating use of conservation tools is unrealistic, says Allinson. “What we advocate is making sure that the message is sent that these tools are there to help the wind energy industry,” he says. “We are all about building partnerships, to ensure that we develop green energy the right way.” 

“Through appropriate strategic thinking, we can find locations that are not harmful to local bird and bat populations.”

Ashton Berry

Global Climate Change, Programme Coordinator
BirdLife International, Global Coordinator of ETF



Image courtesy of www.pexels.com

Catching the Small Fry: SMEs and Sustainability Reporting

Simpler processes and regulations for disclosure will encourage small organizations to disclose environmental and social impacts, writes Tim Mohin.



Tim Mohin is chief executive at GRI, the leading standard-setting organization for sustainability reporting.

Twenty years ago, it was very uncommon for companies to disclose non-financial information along their annual reports. The Global Reporting Initiative (GRI) grew out of the conviction that engaging in sustainability reporting would bring benefits to society, the economy and the environment, and to companies themselves.

In the intervening two decades, sustainability reporting has gone from a voluntary exercise that mostly large companies could afford to engage in to a mainstream activity that can provide actionable business insight. Today, more than 90% of the largest

250 companies in the world report sustainability information and 75% of them use the GRI Standards.

With the establishing of the Sustainable Development Goals (SDGs), it has become imperative for companies of every size to contribute to sustainable development, and to be able to measure their contributions. But there are 169 targets within the 17 goals, so even the most experienced reporting organizations miss the forest for the trees. Companies can produce a wealth of data, but they may end up forgetting the prize: consistent, current and comparable data that helps them along their sustainability journey of continuous improvement.

“By reporting on their sustainability impacts, SMEs can improve risk management, foster responsible business practices and unlock new opportunities in global markets.”

And some companies, especially Small and Medium-sized Enterprises, often think of sustainability reporting as a cumbersome and resource-intensive process they cannot afford to engage in.

Reporting Mandates on the Rise

When talking about perception, sustainability reports are still seen by many as easy wins when it comes to reputation for companies. However, beyond the PR exercise, more and more financial reports, regulatory filings and investors are asking for sustainability information to better inform their decisions regarding companies, in a more holistic manner.

And with renewed interest on sustainability and sustainable development, there is increased interest in looking into the wealth of non-financial data that sustainability reporting makes available to stakeholders. Further, those stakeholders are better informed to make a case for advancing sustainable development from different angles. For example, the interest of investors in interest of investors in Environmental, Social and Governance (ESG) information continues to grow, as it illuminates the economic and social sustainability

of companies and can help highlight long-term investment risks.

Government regulation is also on the rise. GRI is currently monitoring some 450 policies in more than 100 countries that require some level of ESG disclosure; about 150 of them are capital-market listing requirements.

Small and Medium-Sized Enterprises and ESG Reporting

The wide range of instruments, from guidance to hard legal requirements, and from awards to encouraging stakeholders to demand data, shows that transparency is becoming a growing point throughout global supply chains.

But, while ESG reporting is common practice amongst larger firms, it still needs to be more widely adopted by small and medium sized (SME) companies. The practice is perceived as being too complex and costly for many SMEs. And while government regulation encourages reporting, SMEs are often exempt, as there is a perception that sustainability reporting can be very taxing on SMEs.

Yet the contribution of SMEs is crucial, because they account for approximately 90% of businesses, and are key engines of job creation and

economic growth, particularly in low-income countries.

In 2015, SMEs accounted for only 10% of the total number of sustainability reports captured in the GRI Sustainability Disclosure Database. GRI and its partners are working on ways to both simplify the process and add more value, in the belief that by reporting on their sustainability impacts, SMEs can improve risk management, foster responsible business practices and unlock new opportunities in global markets.

Both trends—one that helps smaller companies engage in sustainability reporting such as the work done by GRI, and the other, regulation that addresses the concerns that small businesses have about sustainability reporting—can help incorporate these important drivers of job creation to the growing list of report preparers.

While the work that is being carried out around the world is a step in the right direction, much remains to be done. Past progress rests on a voluntary system that relies on disclosure standards that are often not fully understood or endorsed by those actors whose contribution we need the most. Regulation can help lead the path towards the maturity of ESG disclosure. 

A person is climbing a rope on a cliff face. The person is wearing a light green shirt, shorts, and a white shawl draped over their shoulders. They are surrounded by a large number of bees, which are flying around them and landing on their clothing. The background is a blue sky with some clouds.

The Birds and the Bees: Basic Lessons from a Social Enterprise

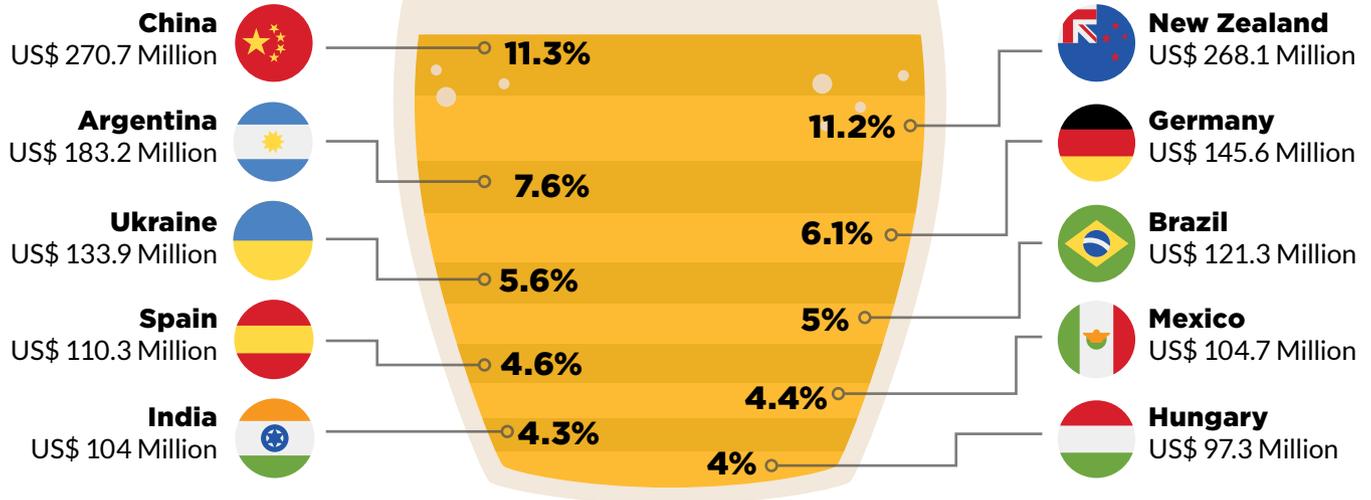
Last Forest Enterprises, based in the Nilgiris Biosphere Reserve in South India, traces its journey along the path of bringing the value of markets to tribal communities.

By Meera Rajagopalan

Talking to Mathew John, managing director of Last Forest Enterprises (LFE) can be a bit like watching a Quentin Tarantino movie: there are multiple intersecting storylines that he weaves in and out of effortlessly.

Image courtesy of Last Forest Enterprises

Top Honey Exporting Countries



Sitting in his well-ventilated office, he talks about the issue of the latest standards for honey from FSSAI (Food Safety and Standards Authority of India) that does not include honey with more than 20% moisture in it. “It’s ridiculous,” he says, transitioning from the story of how he and his friends got interested in honey, “this is a tropical country and of course our moisture content will be more.”

Leapfrogging on to other pieces of his work, the conversation encompasses LFE, Keystone Foundation, honey, the markets, tribal communities, fair trade and organic movements, and his own personal journey as the leader of a “social enterprise” that has been doing the rounds for well over two decades.

The 25-year-old story of The Keystone Foundation is a bit like that, though: constantly evolving, splitting, and coalescing into entities, but eventually hurtling towards a singular

stated goal, the well-being of the communities and ecosystem of the Nilgiris and beyond. What started as a single non-profit organization is now an ecosystem of many interlocking and symbiotic organizations that work on biodiversity, water, livelihoods, health, and rights, primarily in the Nilgiris Biosphere Reserve, in South India.

One of them is LFE, a social enterprise working in the space of fair trade and organic products, which has made quite a name for itself as a successful business, a term that still seems a bit out of place within the foundation’s premises. The figures speak of its success, though: In 2017-18, LFE’s revenue was 3.21 crore, with about a 9.14 lakh profit before taxation. Just over half of the revenue was from honey, and if beeswax products are included, honey and allied products make up about 71% of their revenue.

Now, LFE runs three stores in NBR, and one in Coimbatore, also in South India. Apart from that, LFE’s products are also sold through about 80 partners.

Those are not the only numbers that matter, though: last year, the company impacted more than 20,000 people across the country in their quest for fair living, and their products have reached around 13,000 customers through their own stores and 10,000 people through their partners.

LFE’s transparency is apparent in its November newsletter which begins with a note about an intended software upgrade that did not work out. “After struggling for 7 months, the decision to dump the software, was a heartbreak for the entire team - the effort and money that was lost, has been a setback...” the newsletter explains with a candour that is rare in the non-profit space.



Image courtesy of Last Forest Enterprises

Along various points in its existence, decisions were made and paths chosen, and some of those worked out wonderfully (and some not) and that is the beauty of social change, according to John. “We’re still learning so many things,” says John. “We’re constantly adapting, experimenting.”

Twenty-five-year-old Keystone Foundation is the brainchild of three friends—Mathew John, Sneha Lata Nath, and Pratim Roy—from different parts of India. It was born out of a deep understanding of honey hunters and tribal peoples. The friends, who worked on a beekeeping project for a year with the Palani Hills Conservation Council, backpacked for about six months in the Western Ghats in 1993 to understand honey hunters and their economic ecosystem.

The initial thrust of the organization was on poverty alleviation in the honey hunter community, by providing them with a readymade fair market for their

products. “One thing we were clear about was that we did not want to interfere with the process of [honey] collection at all,” says John. “That was something the community understood, and they have the knowledge they have passed on for centuries.”

Keystone started work in 1995 in Kotagiri and put out word that they would buy wild honey for Rs. 50 a kilo (in 1995 exchange rate, just over USD 1), when the prevailing market rate was only Rs. 15 a kilo (about 40 cents). With all the honey at their disposal, the quartet (Robert Leo, who had worked in the Kodaikanal project, joined them) then tried to peddle the honey: mostly selling it on their bikes or through the phone.

Their retail space took off, and soon, producers asked Keystone about whether they could sell other products they produced: for instance, coffee and pepper.

“So, here was a question for us. How do you, as an institution, work with the resources the communities have? Because at the end of the day, you have resolved to help them,” says John. Some products, such as silk cotton, were market-worthy, but simply not retail material. John admits to having the struggle even today.

Around the same time, it became apparent that the health of the local communities was also deteriorating. Keystone would often help, and when one of the doctors said that they were working reactively, not proactively, a bulb went off.

“That’s when we came upon millets,” says John.

Like a word-building game, as the needs of the communities dovetailed one another, the organization got into health, nutrition, organic farming of millets and traditional foods, Non-Timber Forest Produce (NTFPs), water and ecology, biodiversity, and community well-being. Each branch of work adhered to the main theme of Keystone Foundation, with its own *raison d’être*.

As each founder took up the threads of their interest and passion, John, who was most interested in markets, took over what was then (as now), primarily a honey business. While he retains interest in the

Point to ponder: Informal set-up of personal sales led to a lot of credit and cost of chasing payments.

Last Forest Take: Permanent retail space, in 1997, backed by a loan from SIDBI

foundation's work, the bulk of his time is spent with LFE—to market the products of the region and beyond.

It's nearly eight years since LFE was uncoupled, to form its own identity. Sometimes, says John, it needs a different perspective to see what has been staring at you for years. As the portfolio of their products grew, the ecosystem became very tangled.

Point to ponder: Present in all aspects of the value chain: procurement, quality control, markets, and sales, leading to multiple conflicts of interest.

LFE Take: Uncoupling the procurement and the marketing. Formed two entities: Aadhimalai Pazhangudiyinar Producer Co. Ltd. (the procurement company owned completely by the producers themselves) and Last Forest (for marketing).

In 2007, an intern who worked with Keystone Foundation suggested that the front end and the back end be split.

"There are just too many points in the value chain that need expertise. And it's not workable for a small organization," he had said, and the founders knew that it made sense. The seeds of Last Forest and Aadhimalai were sown.

LFE would be the social enterprise and would not concern itself with procurement, which would remain with Aadhimalai, a producer company whose members were all from tribal communities.

The process of separating the entities and making boundaries clear began. With initiatives intersecting each other at various points, unravelling the individual threads of work became a major exercise.

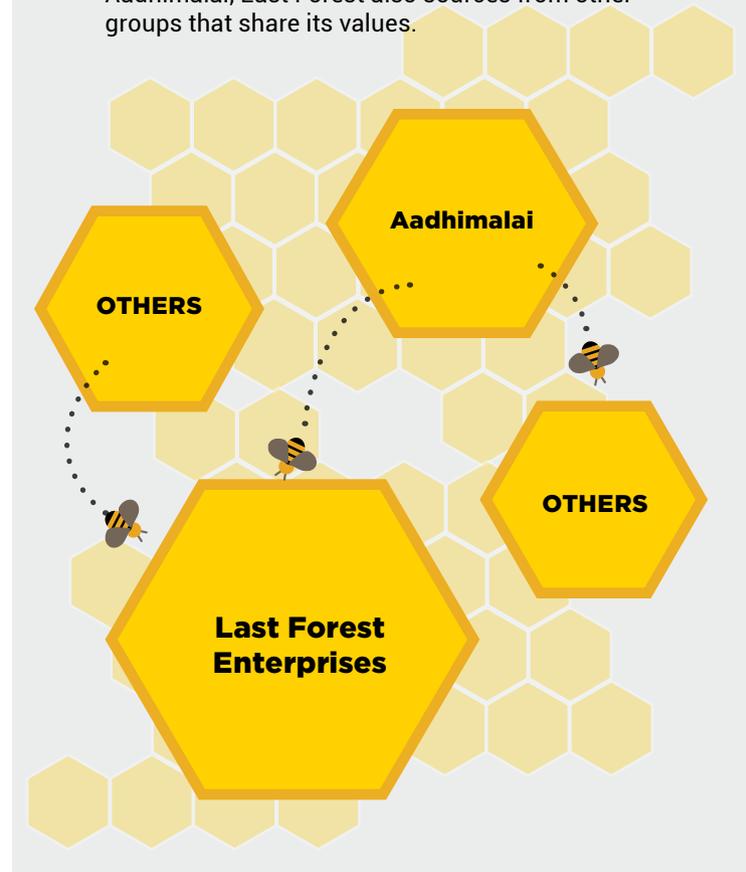
However, the cord is not completely severed, and a symbiotic relationship continues between LFE and Aadhimalai. Last year, LFE shared their profits with Aadhimalai's producers, who received a bonus with some funding from Keystone Foundation.

However, Sudhir Kumar Addanki, CEO of Aadhimalai, is clear that the relationship must be based on sound financial sense. His plans include expanding into

the wholesale market, as well as fabrication of machinery for the community. However, he is realistic about the co-dependence of Aadhimalai and LFE, in light of the fact that 60% of Aadhimalai's products are sold to LFE and the majority of LFE products are sourced from Aadhimalai.

"For LFE is not a partner, but a client. If there is any decision to be taken at any point, Last Forest has a right to start procuring as well as we have the right to start selling outside. We can bite into their pie and they also have the same privileges," says Addanki.

In effect, Last Forest is a client of Aadhimalai, which now sources the honey and other products by the communities of the Nilgiris directly, and sells it to Last Forest, among other entities, and while a large part of its sales is from products sourced from Aadhimalai, Last Forest also sources from other groups that share its values.



Place to Bee

This restaurant in Ooty, Tamilnadu, India, was born out an erstwhile Bee Museum, and was inspired by the Slow Food movement, the restaurant gives importance to locally produced "good, clean and fair" food. A small kitchen garden serves as the source for some of the ingredients on the menu. The restaurant's World Disco Soup Day too has caught on: it is an event where soup made from vegetables that are about to be thrown away is distributed free.

A Few Keystone Activities

Incubator for:

- Last Forest Enterprises
- Aadhimalai
- Nilgiris Natural History Society

Runs:

- Nilgiris Water Portal
- Non-Timber Forest Products promotion
- Community newspaper: Seemai Suthi
- Community Radio: Radio Kotagiri
- Apiculture
- Community well-being
- Environmental Governance



Images courtesy of Last Forest Enterprises

Some of LFE's non-honey products include Toda Embroidery products, local chocolates, jams and pickles from Ecosphere (a Himalaya-based social enterprise), and garments. There is a separate team that looks into the entire marketplace, constantly seeking out and working with organizations and products with a similar ethos.

Point to ponder: Consistency of supply may be difficult for smaller groups. For instance, a flute from Bastar, India came in once, and then simply disappeared. Customers still ask for it.

LFE Take: It's tough, especially in case of suppliers who are ethical but unable to meet demand. The call to take them off the shelves must be made, if necessary.

Keystone (and LFE) clearly understood the value that external board members bring to the table, and even within six years of incorporation, Keystone Foundation brought in four external board members. "One lesson that we have learnt in governance is that when you start as founders, you can't make the rules for yourself," says John.

Point to ponder: Expanding the board of trustees.

LFE Take: An independent board not only brings oversight, but also brings together people as partners, who are as invested in your ideas as you are.

One of the most difficult things about being a social enterprise is balance between the good and the profit, to put it simply.

"What happens with a social enterprise is that there are opposing forces, and you have to remain balanced. We are already loaded with ethics, and now we have to create a full-fledged business as well," says John.

Point to ponder: How do you create a balance between the good and the business?

LFE take: Must understand that you are no longer serving as an NGO—the focus must change to the customer. The staff is constantly told this: think about how many customers' lives you are changing. On the ground, it must be run like a business—an ethical business, but mainly a business. For example, employees were promised double pay if they worked on Diwali, a traditional holiday.

John says that while it is a struggle, especially when times are tough, there are certain cardinal principles that LFE operates under, chief among them being this: least negotiation with the supplier.

"Our value is that we deal with the market, and we take care of it. If the price is high, we put the onus on ourselves to sell it at an appropriate rate," says John.

The "doing good" bit was emphasized internally as well, as senior team members had to commit to two non-financial targets for the year. They responded with measures such as visiting suppliers regularly, and helping build fair trade principles into internal processes.



Part of that process, says John, is realizing whether you have the bandwidth to cater to all market segments. “At some point, you have to start thinking like a business, and zero in on your market segment,” he says. “You simply cannot sell to everybody.”

Wolfpack Outdoors Pvt. Ltd. is an outdoor adventure and apparel company that has stores in 15 Club Mahindra and Sterling Holidays resorts in India, and Last Forest has a branded counter at all of them, accounting for sales of more than Rs. 13.65 lakh last year (about USD 20,000).

Rajesh Ramakrishnan, founder of Wolfpack says their relationship with LFE is more of a partner than that of a client. “LFE’s products do very well [at the resorts] because it’s the crowd that is looking for more natural things— middle-aged ladies who are looking for lip balm or natural honey, for example,” says Ramakrishnan.

One of the most important decisions Last Forest had to take was separation from the parent organization Keystone Foundation. Part of that discussion was the form that the new entity would take: a private company, a Section 8 company, or a Society, among other options. When the decision was made to create Last Forest as a private company, it did not seem like the right choice to some, but eight years later, the company has proved its detractors wrong.

Point to ponder: When you evolve as a social enterprise as part of an NGO, do you register it separately? If so, how?

LFE Take: For complete bifurcation, best to register as a company. The division is clear on paper and in the mind.

Born from experience: John’s advice to social enterprises

- Be there for the long haul.
- You will have problems. After the initial euphoria, you must settle down to actual business.
- Hire resources who understand money and markets.
- Separate the business and the cause inside your head.
- Keep the ethics at the top of everything you do, otherwise it is very easy to get distracted.

John says that in spite of being in the business for many years, there is still a lot of learning. “Each day brings new challenges, and we are feeling our way through a lot of this stuff,” he says.

Last year was not very good sales-wise, admits John, for reasons including and beyond the implementation of Goods and Services Tax in India. A few hard decisions regarding products and suppliers had to be taken as well.

John is also a leader in the fair-trade movement and the movement towards participatory guarantee systems (rather than centralized third-party standards) for organic products. LFE promotes products that adhere to the concepts, a fact that is organic to LFE as an entity. The latest buzz around social enterprises is something that feels alien in the precincts of Keystone Foundation, where these principles have been in vogue for 25 years.

In fact, the day that I am there, the sales team is back from a visit to a prospective customer, who did not even ask about the stories behind LFE’s honey. All he asked was this: how much do the products cost, and what is the cost of something comparable in the market?

In John’s ideal world, all business transactions will be fair trade, and with ethics that support the producer. Consequently, that customer would be everyone, and LFE would be all organizations. 🌱

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South Asia Can Become the Strongest Region in the World:

Sunil Motiwal, CEO, SDF

Image courtesy of SDF. Village action plan under WASH project.



Sunil Motiwal, chief executive of the SAARC Development Fund (SDF)

When you speak with Sunil Motiwal, chief executive of the SAARC Development Fund (SDF), you must be prepared to take quick notes. For the man who heads the financial institution that is the “umbrella financial mechanism” for all projects across the countries of the South Asian Association for Regional Cooperation (SAARC) has many an innovative project that he rattles off when you ask him what is new.

“This is what is happening now,” he says, as preface to a list of initiatives that are soon to be launched. He takes a breath, and when you think he is done, he talks about a few more projects that are ready to begin. One might be tempted to think this is a recently launched fund, but SDF is, in fact, eight years old.

SDF was born out of its predecessor, South Asian Development Fund, in 2010. The Bhutan-based chartered body is governed by a Board comprising



Image courtesy of SDF

representatives from the Ministry of Finance of the Member States.

Just recently, SDF approved three projects: purchase of aircraft for Drukair, Bhutan's carrier; and a hydroelectric power project and a transmission line project for Nepal.

The idea behind the fund is to explore cooperative projects that span countries under three broad heads: Social, Economic, and Infrastructure projects. With over 12 approved proposals for a total of over 70 projects in the Member States, the Social window is one of the few that easily lends itself to replication across borders. The other two—economic and infrastructure—are yet to soar, and Motiwal is interested in soliciting applications for the same, including PPP projects.

In this quick chat with iMPACT, Sunil Motiwal talks about his plans for SDF, the importance of the SAARC region, and much more.

iMPACT: What is the relevance of a SAARC-focused fund in today's interconnected scenario?

Sunil Motiwal: The SAARC region is one of the fastest growing in the world, with a high GDP. Investment opportunities are large, and we also have the largest young population in the world. But there is hardly any interface between the countries of the region. Less than 3% of the trade is between these countries. Once we start doing business together, we will see tremendous growth in the region. There are, of course, challenges.

The success of this, to be honest, depends only on one factor. If the political will is there, this region can become the strongest in the world.

Can you explain what the social vertical of the SDF is all about?

The social window helps us identify and fund projects that will help the grassroots of our countries. It has been going pretty well so far. It was

the first window that took off. We have approved more than 70 projects worth 75 million dollars and already disbursed about 48 million dollars.

What kind of projects do you look for, when funding?

When it comes to social projects, we look at projects that create large-scale impact in three or more member countries. We do have themes that we focus on (see box). We generally look for projects that come with some support, in terms of co-funding. We are right now funding on a 50-50 basis and are looking to transition to a loan-grant combination in the future. Our focus has always been on the grassroots, and we will maintain that.

What is new with SDF?

As far as the Social Window is concerned, we are launching the Social Enterprise Development Program from January 2019. The program is structured in consultation with the

“We are very interested in projects that leverage the capabilities, available infrastructure, and networks of one country to work in another. The whole idea is cross-border cooperation.”

Focus areas for the Social Window



Poverty alleviation



Education



Health



Human resources development



Support to vulnerable/
disadvantaged
segments of the society



Funding needs of
communities



Micro-enterprises



Rural enterprise
development

World Bank, with the Bank serving as the technical and knowledge partner.

Under this program, we are trying to promote start-ups and social enterprises by funding pilots. The idea is that the project can then be replicated across SAARC countries, where feasible. We are looking to fund projects under the four areas of agriculture, health, livelihood, and renewable energy, with a planned budget of 10 million dollars per country and about 64 projects per year, at the minimum. We are really trying to push sustainable local innovations in the region.

What about other windows?

SDF is poised for expansion. We are not just expanding in the social space, but we are also launching a program

for MSMEs (Micro, Small, and Medium Enterprises). The idea is to fund initial clusters in industrial areas. We have also approved a couple of projects in the energy space, with a commitment of USD 30 million. We plan to ramp up our funding in the two windows economic and infrastructure.

We have several other ideas and want to be able to expand our capital base as well.

How will that happen? What can we look forward to, in the future?

Right now, we are a small fund—over 500 million dollars. We are funded by a line of credit from various banks. However, we have an authorized limit of over 115 billion dollars, and we plan to build up that capital.

We have always tied up with

international banks, and many of them are our strategic partners. We are working on building a consortium of lending agencies to act as a catalyst of infrastructure development in the region. We have strong relationships with banks such as Asian Development Bank (ADB), AIIB (Asian Infrastructure Investment Bank), EIB (European Investment Bank) and plan to be able to co-fund some of the projects that come to us. Eventually, we want to be able to build a strong portfolio.

We are very interested in projects that leverage the capabilities, available infrastructure, and networks of one country to work in another. The whole idea is cross-border cooperation.

For more details, e-mail Sunil Motiwal at ceo@sdfsec.org 



1 WATER.
Women return from a stream in Adaklu Dawanu, Ghana.
Photography by Misper Apawu and Florence Geyevu

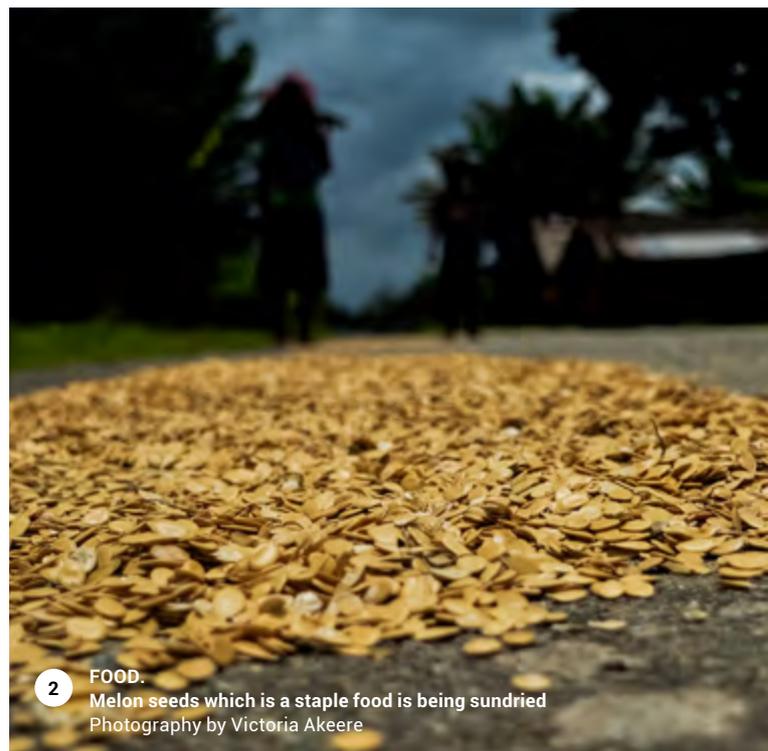
Women & the Environment

By Lucile Stengel & Hannah Wilson at Lensational

When Lensational was created in 2013, we had the intimate conviction that giving women the tools and agency to share their own stories would help shift the conversation not only about development, but about gender equality more widely. This belief was supported by worrying statistics, too: a study found that as low as 6% of the photographs showcased by leading publishers were taken by women.

Five years thence, Lensational's photographers have inspired change by exposing unheard narratives of women leaders, migrants, micro-entrepreneurs, factory workers, activists, athletes, and many others across Asia and Africa. Present in all their work was one invariable thread, regardless of time and place: the environment.

Women's lives are intricately linked to the natural environment in ways that men's lives often aren't. And as the environment degrades in many parts of the world, women have become the primary witnesses of its degradation, and important actors in the fight for its conservation, too. Lensational's upcoming photo book, releasing in early 2019, compiles the work of women photographers across the continents of Asia and Africa on the topic, in an effort to document women's often unknown experience, and interaction with the natural environment.



2 FOOD.
Melon seeds which is a staple food is being sundried
Photography by Victoria Akeere



3 **POLLUTION.**
A mother and child stand amongst trash in the Mathare Slums in Nairobi, Kenya.
Photography by Sharon Apondi



4 **WATER.**
Sarah, from Adaklu, Ghana, demonstrates the difference between water from the stream, and water from the polytank.
Photography by Misper Apawu and Florence Geyevu



5 **WATER.**
Soaking palm leaves in water is a traditional purification method used in Adaklu, often with indeterminate results.
Photography by Misper Apawu and Florence Geyevu

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End-of-Life Solutions for Plastic



Image courtesy of www.pexels.com

Plastic and waste have been under the spotlight for quite a while now. Most sustainability conferences have substantial time devoted to plastics and ways to mitigate use. However, it is important to note that plastic is being praised and vilified for the same properties: its durability and indestructibility.

According to a 2017 study, “Production, use, and fate of all plastics ever made,” around 381 million tonnes of plastic were produced in 2015, up about 200-fold from the measly 2 million tonnes in 1950. Even as more

plastic began to be recycled, in 2015, the percentage of plastic recycled was just about 20% and the percentage incarcerated was at 25%, leaving more than half the plastic discarded. This percentage is even higher for low-income countries.

To add to the crisis, mismanaged plastic waste disposal is focused on low-income countries, according to a 2015 study, “Plastic waste inputs from land into the ocean.” According to 2010 data, China, Indonesia, Philippines, Vietnam, Sri Lanka, Thailand, Egypt, Malaysia, and Nigeria top the list of mismanaged waste by global total.

In this scenario, it becomes paramount that management of plastic waste be undertaken on a war footing by countries that leave much to be desired in terms of waste, and in particular, plastic waste management.

iMPACT looks at three possible solutions where plastic is put to good use after its initial life cycle.



Image courtesy of Miura Board



Alfredo Faubel
CEO, Athyrn, LLC, Texas, US
Makers of Miura Board

Alfredo Faubel's product, Miura Board, combines waste plastic and synthetic or organic fibres to make a durable alternative to wood. It positions itself as a product that takes care of two problems at one go: deforestation for timber products and increasing number of landfills for plastic.

In the U.S., where the company is located, the fibres are primarily carpet backing. However, various other organic material—paddy husk, peanut shell, straw, etc.—can also be used. The product, which the company refers to as being “somewhere at the intersection of plastics, metals, and wood” is easily mouldable and doesn't make use of virgin plastic or wood. Because there is no wood component, it is not susceptible to fungus or other microbial degradation.

This technology can make use of any kind of comingled plastic waste, cardboard, as well as aluminium foil (the only unacceptable material is PVC), saving time and labour required for segregation.

Faubel claims there is no harmful gases or effluents from the process. Changing the ratio of plastic and fibre changes the strength of the material.

What happens when the product is not needed anymore, a la

plastic? Faubel says the product can be completely recycled. Because the material is highly malleable, it can be used not just for construction, but also to create other products: house décor, for example.

“Miura Board exemplifies the idea of extracting value from waste plastics and agricultural or synthetic fibres to reduce both the need for timber and the use of landfills.”



Vidya Amarnath
Director, Paterson Energy,
Chennai, India

Pyrolysis has been one of the proposed ways to reuse plastic for a few years now. However, newer technologies have made it more viable. Pyrolysis converts plastic waste into plastic oil, a viable replacement for furnace oil. Pyrolysis simply refers to the chemical breakdown of plastic into oil, carbon black, and hydrocarbon gas, the last mentioned being used as fuel for the depolymerisation. The plastic oil thus generated can be used as fuel oil, and carbon black has its own industrial applications as well.

Paterson Energy, headquartered in Chennai, India, is a waste-to-energy start-up company with a processing capacity of 3-20 tonnes per day. Vidya Amarnath, director of Paterson Energy, says that they are circular economy start-ups rather than recyclers, because they are bringing back plastic to its original form, crude oil.

“This is zero discharge and zero effluent technique,” says Amarnath. While advocates of pyrolysis for plastic waste have been many, several stumbling blocks have deterred the growth of pyrolysis: unavailability of raw material for continuous batch processing, high sulphur content in resulting fuel, and varying quality of fuel depending on source material. Of late, however, many of these have been overcome, and Paterson’s next factory in Mathura, India, is soon to commence operations with a capacity of 6 tonnes/day.

“ Recycling only postpones the problem of disposal and might be good for the short run while this process of pyrolysis closes the loop. ”



Rajagopalan Vasudevan
Professor & Dean, Thiagarajar
College of Engineering, Madurai,
India

Waste plastic can be used to create infrastructure, says India’s “Plastic Man” Rajagopalan Vasudevan. The man best known for initiating the “plastic roads” initiative using a mixture of shredded plastic waste and bitumen has now discovered an interesting material called “plastone,” a synthetic granite that can withstand weights of up to 300 tonnes. Vasudevan suggests the material can be used to construct public toilets, pavements, canal linings, compound walls, etc., where the load is not too much. About half a tonne of plastic waste is required to construct one toilet.

Vasudevan claims that the plastic roads built in 2002 are still crack-free. The requirement of plastic for these roads seems to be the deterrent, even as we are battling unmanageable amounts of plastic waste. To lay one kilometre of the road, one tonne of plastic waste (around 10 lakh carry bags) is required. Vasudevan calls plastic the “poor man’s friend” as it is affordable, durable and is used every day. “Banning it would be pointless,” he says. 📍

“ The solution to all plastic waste is not to ban but to plan. Plastic is in no way inferior. There is no question of banning, but there should only be proper planning. ”

Whose Altruism Is It Anyway?



Anoj Viswanathan explains why the online crowdfunding industry cannot operate without an attached fee in the near future

Image courtesy of Milaap



Anoj Viswanathan is president and co-founder of Milaap, India's largest crowdfunding platform for personal and medical needs.

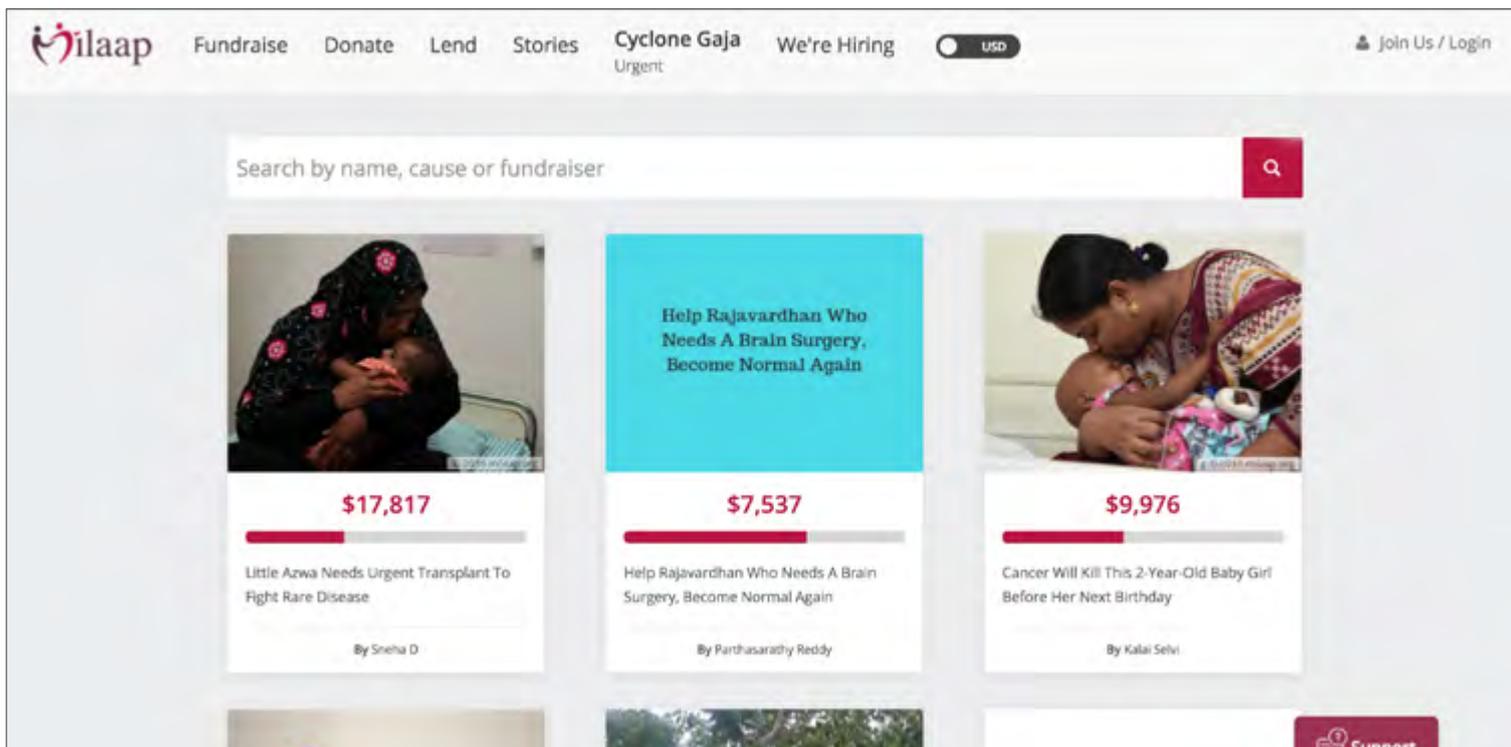
I was recently watching the “Make Google Do It” ad series. The tech giant had, ages ago, begun thinking ahead and come up with free storage space in the drive, an AI driven voice assistant, GPS and navigation, maps, search options in various languages and many other features that could help them find a space in a consumer’s daily life, whether they were tech savvy or not. Now, why the sudden need to advertise this?

Truth is, even if these services came neatly arranged in the G-suite, ready to be used, there

would still be people who would not know they have been living with these life-altering features that came to them absolutely free of cost. They would still be blown away by the idea of an Alexa.

In a vast market like India, word of mouth and ease of use are critical when breaking the big wall that keeps people away from new technological products and features. So, it comes down to creating the most seamless experience when they opt for it.

When Milaap started as a crowdfunding platform, the only idea was to enable individual giving



through technology, similar to shopping, calling a cab, or ordering food, in a clear, transparent way, with someone else taking care of all hassles.

This is where the challenge lies: when you're doing something "for good" it is often expected to be done for free. Or else, where does the altruism lie? The simple answer is: With the donor.

For a tech-based platform, the tricky part of this is that there is no end to the product you build. When we started off, we had only a verification process, a live ticker on each fundraiser showing the amount needed and raised, and a link that could be shared with friends and family members. Recipients could post updates to let people know how the money helped them, and that was it. The potential of social media sharing drove us to introduce the Facebook and Twitter share features. That rapidly evolved to a stage where we had to

have a dedicated team to analyse successful fundraisers, and today we give some promotional tools as a basic kit for every fundraiser. Improvements are constantly being made to the platform, whether it be through adding payment modes, or being available to smoothly guide people into the process.

With online funding, what we are selling is convenience. To campaign organizers, it is about a hassle-free way to ask for money with dignity. For donors, it is about finding a verified need, and being able to see the impact of their participation, with the ease of making a donation on the go.

Crowdfunding in developing countries remains quite utilitarian. We are still at a stage where most people would pick funding medical treatment over funding a research product. To keep up with the times and ensure we can take crowdfunding to anybody who needs it, every crowdfunding

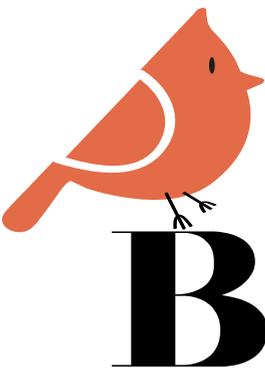
platform does charge a fee, mostly on the funds that are raised through the platform.

Today, the steep escalation of sophisticated treatment, especially in critical illness like cancer, has pushed crowdfunding as a mainstream mode of financing healthcare. When people fall short of money despite having exhausted their own networks, platforms often resort to paid channels to enhance outreach and take the need to a larger audience. In such cases too, platforms often charge an additional percentage on any funds raised via these channels.

Any technological product would cease to exist the day it stops evolving. All crowdfunding platforms are constantly attempting to make it something that can be accessed on the go, as part of everyday life. It is for exactly this reason that the online crowdfunding industry cannot be completely free to use in the near future. 

Special Species

Seven Campaigns that Made Us Sit Up and Take Note



Biodiversity is one of the components often overlooked in conversations around sustainability. Every once in a while, though, campaigns come along that make us go, “Wow!”

Here are a few creative campaigns that proved taking care of our co-inhabitants need not cost the Earth!



1. Tweet to Save

Those emojis can deliver more than just emotions! The #EndangeredEmoji campaign, organized by World Wildlife Fund, utilizes the power of social media, allowing people to donate €0.10 or £0.10 for every tweet or retweet of the hashtag with 17 emojis that represent some of the world’s endangered animals: for instance, the Asian elephant, giant panda, Galapagos penguin, and Sumatran tiger.



2. Bee-ware of the Hive Fences

Elephants are pestering African farmers by raiding their plant crops, and farmers are responding by poisoning them with poisons such as Furadan. A more humane way of avoiding this conflict is being piloted: a fence of beehives strung together with wires. This fends off the elephants, who are naturally afraid of bees. Even if the program does not include real bees, the familiar sight and smell of hives are enough to scare elephants away from crops. Now that’s a sweet solution!



3. The Age of Cryptopandas

Taking advantage of the new kid on the blockchain, Panda.Earth is a virtual pet breeding game. While the idea is to increase awareness of giant pandas, players also collect and breed pandas with “special characteristics” in the marketplace. Players get a chance to buy virtual offspring of real-life pandas identified by the China Conservation and Research Centre for Giant Pandas.



4. Insta-Rescue

Popular social networking platform Instagram has joined the pack towards fighting animal abuse. Using tools designed to tackle self-harm and suicide, Instagram will now inform users of any behavior that harms animals. That includes sending a pop-up message whenever someone searches or clicks a hashtag related to wildlife such as #slothselfie or #exoticanimalforsale.



5. Animals are Jewels Too

A jewel collection is making waves not only in the fashion industry, but also in the environmental scene. The “While They Await Extinction” collection created by award-winning Swedish designer Hanna Hedman uses designs that showcase endangered animals and plants which are merged into a unified design—seemingly creating a new life form.



6. A Dog's Purpose

The greater glider is currently tagged as a vulnerable species, and volunteers in Victoria, Australia are accompanied by their canine friends in an effort to preserve the possums. Domestic dogs are being employed to sniff out traces of greater gliders that have not been seen in parts of central Victoria for years. A dog's sense of smell is more effective in monitoring the glider population than spotlighting, which involves shining torches on trees to spot reflections in the animals' eyes.



7. One Text, One Life

In a race to protect elephants that are currently tagged as “near threatened” by the International Union for Conservation of Nature, Kenya launched a short messaging system that allows people to be alerted of elephant activity. By placing a mobile phone SIM card in an elephant's collar, the animal's movement is tracked on a minute-by-minute basis. A virtual “geo-fence” using GPS is used as a guide and every time an elephant walks near the virtual fence, the mobile SIM informs rangers through a text message. 



Not Missing the Forests or the Trees

CanopyStyle uses the power of the marketplace to save ancient, endangered and boreal forests.

By Meera Rajagopalan

Sumatra Eucalyptus Plantation. Image courtesy of CanopyStyle

The word “rayon” brings to mind factories and plastic, not forests and trees. However, it’s what is at stake, as global rayon production increases. As of 2015, the global viscose market was at 4.9 million tons, with more than 30% of the wood pulp sourced from ancient and endangered forests. Even designers and fashion brands were sometimes unaware of this, which is what led to CanopyStyle, a campaign from Canadian non-profit Canopy.

The trail of fashion leads one to the deep forests of Canada, Indonesia, and Brazil, where indiscriminate logging and replantation of water-

guzzling trees like eucalyptus have denuded large parts of Ancient and Endangered (AE) Forests . CanopyStyle uses the power of brands to ensure that forests are not affected in the pursuit of style.

Since its launch in 2013, more than 160 fashion brands and designers worth over USD 170 billion have pledged to source their fabric more responsibly, leading to policies and standards that help influence producers into compliance, and bringing transparency to an opaque supply chain.

Canopy founder Nicole Rycroft says the focus of all Canopy campaigns is approaching the problem from the

viewpoint of the marketplace. (In fact, Canopy was earlier called Markets Initiative.)

“Canada and the U.S. consume so much of the world’s resources that it placed me in a unique position to be able to harness the marketplace,” says Rycroft. “The idea also came from the recognition that NGOs are influencers but rarely the decision makers in the marketplace. It was very important for us to be as influential as possible.”

Canopy has also initiated a third-party CanopyStyle Audit (conducted by NEPcon) of six producers, a number that belies the concentration of the market where 11 companies represent more than 70% of the



Image courtesy of Andy Wright

market share. As of 2018, around 29% of the global viscose supply has been audited as low-risk to AE forests.

“Since 2018 and onwards, all products containing man-made cellulosic fibres that are delivered to C&A stores in Europe and China are sourced from producers that have completed the CanopyStyle verification audit with low risk findings,” says Jeff Hogue, chief sustainability officer, C&A, in a press release.

Birla Cellulose, the largest viscose stable fibre producer in the world, has been on board the CanopyStyle train for the past four years. Manohar Samuel, senior president of marketing at Birla Cellulose says that while the company was already sourcing responsibly, Canopy brought to the table a better understanding of the forests, with its evaluation tools and experience working in forest

conservation. Birla dropped one place to second in the Canopy’s 2018 report titled, “The Hot Button Issue” which ranks producers based on responsible sourcing.

Canopy has been working toward the conservation of forests since 1999 and is best known for ensuring that the Harry Potter books were greener than Slytherin: Over seven years, Canopy convinced various publishers to commit to using paper that was not sourced from Ancient Forests and provided them with viable alternatives.

The Initial Years

The CanopyStyle campaign was launched in 2013, and in the following year, signed on two major brands: Inditex/Zara and H&M, as well as fashion designer Stella McCartney, a pioneer in sustainable fashion.

There was a lot of education to be done in the initial years, and the

On Using the Marketplace to Effect Change

“As much as Canopy has had success with fashion brands, that model can be applied to a myriad of environmental issues. Obviously, it has to be tweaked and adjusted as different needs and nuances come into play. This model, I feel, can be used for climate change issues, and also or marine protection, as well as human rights issues.”

subsequent involvement of brands was what got the eyeballs of many of the producers.

“In fact, it was not until we publicly launched CanopyStyle that we actually got a call from a viscose producer,” says Rycroft.

What is the CanopyStyle audit?

The CanopyStyle audit includes, but is not limited to, information about policies and sourcing pertaining to Ancient and Endangered Forests, action towards adhering to the policies, development of alternate fibres, and carbon footprint reduction. The audit results are used by brands to choose their suppliers.

Indonesian Rainforest. Image courtesy of CanopyStyle

The Sector

Working with fashion brands has been rewarding, not in the least because innovation is part of their DNA, says Rycroft. It also gives visibility to the problem on a global scale, and linkages between the source and production is spotlighted.

Rebecca Watkins, CSR and quality manager of Gina Tricot, a Swedish fashion brand, says, “Producers are more aware that sustainable materials and traceability is important for us as buyers. We need this along with transparency to offer our customers a sustainable product.” Gina Tricot has been associated with Canopy since 2016, and stepped up efforts to make transparent all arms of its supply and production chain, after reports of fashion brands neglecting rights of workers in countries they produced in.

With some viscose producers, as might be expected, there is an initial reluctance to relook well-embedded supply chains and infrastructure. However, because it is an issue that will affect them sooner rather than

“ NGOs are influencers but rarely the decision makers in the marketplace. It was very important for us to be as influential as possible. ”



Nicole Rycroft

Founder
Canopy

later, there is a lot of interest in hearing Canopy out, says Rycroft.

With a 400% increase in consumption of rayon over the last 20 years, producers too are looking at the next generation of solutions.

Canopy also helps producers unpack producers’ supply chains and look at alternatives, including newer lighter fabrics, as part of their research and development.

However, the scale of the problem is apparent from the fact that of the top 10 producers of rayon, only three (Lenzing, Aditya Birla and ENKA) have received a “green shirt” denoting responsible sourcing. That is an indication of the long road ahead of CanopyStyle, to ensure that the campaign reaches its goal: that by 2020, no rayon or viscose will be sourced from ancient or endangered forests. 

Green and Grey: The Perfect Shield for a Perfect Storm?



A combination of natural and synthetic infrastructure may be the most efficient means to disaster resilience.

By Ian Jamotillo

Aerial photo of Bangkung Malapad in Sasmuan, Pampanga, Philippines. Image courtesy of Sasmuan Bankung Malapad Critical Habitat Ecotourism Area (SBMCHEA).

An average of 8 to 9 typhoons hit the Philippines every year, according to the Philippine Atmospheric, Geophysical and Astronomical Services Administration. With the country's proximity to the Pacific Ocean, millions of Filipinos, especially those residing in coastal areas, are most vulnerable to the effects of typhoons.

Super Typhoon Haiyan, locally known as “Yolanda”, was one of the strongest tropical cyclones ever recorded, and struck the Philippines in 2013 with devastating winds. It caused over \$4 billion worth of damage and claimed more than 6,000 lives but five years later, the scars left by the

calamity still remain, eliciting the age-old question: how can a country improve its disaster resilience?

The solution may lie in combining “green infrastructure” with “grey infrastructure”, two terms usually considered polar opposites. While green infrastructure refers to infrastructure that utilizes sustainable systems, usually localized, grey infrastructure is usually human-engineered infrastructure that is centralized.

While experts are divided on which methodology may yield better results, several projects have used both in tandem, especially in the field of disaster resilience, to good effect.

How do mangroves help?

Serving as the first line of defence during a storm surge, mangroves reduce the waves that pass through it by half a meter (1.6 feet). They are the natural habitat for a number of fishes and migratory birds, and also aid in carbon absorption and storage.



Image courtesy of Unsplash

Nurturing the Earth

An example of this is the Green-Grey Storm Shelters project by the US-based environmental organization, Conservation International (CI). Mangroves along the beachline in the province of Oriental Mindoro in the Philippines have decreased over the past few years. CI has worked with communities in Barangay Pulantubig to restore mangrove habitats by planting 300,000 mangrove seedlings.

Besides mangrove restoration, CI has also pioneered several grey projects such as building levees or floodbanks. To promote the livelihood of communities exposed to typhoons, CI has introduced sustainable fishing, which encompasses coral and marine biodiversity protection.

“The Philippines still has a lot of catching up to do in terms of disaster resilience. Some people are reluctant to accept that climate change is really happening, and one way to solve this is to start from small. Minding the mangroves,” said Maria Josella Pangilinan, program manager for CI.

In the small island of Silonay, CI has worked with residents to protect the mangroves through livelihood support. Watchtowers and a 900-metre (3,000 foot) bamboo boardwalk were built to boost tourism activities.

When Nature Meets Engineering

It’s not all glitter and gold though. Mangroves require ample amount of time to cultivate and is constantly threatened by coastal development. This is where grey infrastructure comes in, involving human-engineered solutions such as steel.

“Disasters are not going anywhere; they will remain part of the natural cycle. With that in mind, we will need to adapt continuously. Restoring mangroves and other green practices like rain gardens and eco-roofs are not enough. Taking advantage of today’s tech is crucial for us to survive,” Emily Corwin, a Green-Gray fellow at Conservation International said.

Several projects are paying heed and recognizing the value of the “other” type of infrastructure.

Ericsson has worked in countries such as the Philippines and Malaysia to reforest mangroves while using camera sensors to track their growth and activity. The Vietnamese Government, for example, has paired grey infrastructure involving the use of concrete dykes and seawalls with green infrastructure to boost coastal armouring against storm surges.

Disaster resilience, whether green or grey, cannot be led from outside. Eventually, the solution must be owned by the communities themselves.

“Disaster preparedness is best done as a joint effort, with the community and the people leading the exercise. At the same time, there should be more focus on public awareness on the importance of mangroves. Local governments must also continue to work hand in hand with the community, so that countries can be better prepared each time calamity strikes,” said Ellen Alarilla, program manager, sustainability and corporate responsibility for Southeast Asia, Oceania, and India at Ericsson. 



Human-Centric Design Makes for More Efficient Scaling

Designing a solution keeping the user at the centre of the process makes for more robust and successful solutions, especially as social change organizations look to scale, writes Namita Singh of Digital Green.



Namita Singh is a participatory media researcher and practitioner who has worked with several international organizations. She is interested in the use of ICTs for development and is currently Head of Training at Digital Green.

There's a revolution afoot in the social change space. Organizations are looking to nurture and promote innovative social change ideas, and the marketplace is flooded with ideas. The bottleneck, often, is in scaling up. While technology offers some solutions, they are few and far between.

That's where the challenge lies: in being able to replicate knowledge transfer/training at a large scale across different geographies.

At Digital Green, we scaled pretty quickly to different states in India and different countries in Sub-Saharan Africa, training agriculture extension workers. As we scaled, our concern was maintaining the quality of our training across the board. That is when we turned to the human-centered design (HCD) approach, to develop a scalable training system as a solution to our challenge.

The HCD approach keeps the user at the centre of the solution and moves through the process of

framing the (design) challenge, finding appropriate methods and tools to collect data, generate insights, develop quick prototypes, test, and iterate till you reach a solution that is appropriate for the user. Before you begin, it is important to ensure your organization or team adheres to the principles of HCD:

- **Being open to change:** Innovation is the cornerstone of HCD, and the solutions might require you to make big and small changes in the way you work. In non-profits it might be more difficult than imagined, given set rules and policies.
- **Being quick to change:** It is often helpful to keep a small team that can take decisions quickly on questions that appear before it. However, remember to not ignore questions that are difficult or those that have long-term social impact.
- **Keep trying:** Developing prototypes, testing them in the field, and improving them is what makes

HCD effective in reaching user-centered solutions. Each prototype and its test reveal better ways of doing something. This is not a quick-fix solution.

- **Getting the right human resource:** An interdisciplinary team is essential, and if there is someone in the group who has exposure to the HCD process, it can become much easier to navigate. We had people with training, research, and design experience in our team to take this process forward.



Framing your Design Challenge

The beginning of the process is framing the (design) challenge or the question as a “How might we.” The question should focus on the ultimate impact that you are trying to have, for instance:

“How might we train frontline workers to effectively engage with mothers of infants?”

It is also important to come with as many questions as possible and then, as a team, narrow down to the right question.

We found that this was pretty tricky and we went from very broad questions, such as “How can we have an efficient training system?” to very narrow and contextual ones, such as, “How can video be used to train field level workers?” till we reached the right one.

Our final design challenge was: How might we ensure that field level workers can operate ICT tools confidently?

Choosing the Right Methods

It can be a tough call deciding which methods would be the most appropriate to find the answers. From fairly traditional ones, such as interviews, to more creative ones, such as making collages, or even something you develop on your own!

We found that mapping methods against three main purposes can be rather helpful. These purposes are:

- Developing some basic knowledge about the challenge
- Thinking more creatively about the actual challenges and solutions
- Learning in-depth about the challenge from the people directly facing it

We used interviews with trainer and external experts and observed actual trainings to build our basic knowledge; analogous inspiration helped us get some creative ideas; and peer-to-peer activities helped us delve deeper into the issues that field level workers faced. This “mix-methods” approach helped us open our minds to the various possibilities of what solutions can look like.



Images courtesy of Digital Green

Developing Insights, Prototyping Solutions, Iteration and Messiness

Once all the information has been collected, the next step is for the team to get together, build out themes that will help solve the articulated design challenge, and start generating insights and brainstorming innovative solutions. For us, some themes were standardizing training sessions, creating participant-

Monarch Blue

By Barbara Litkowski

“Monarch Blue” by Barbara Litkowski is the prize-winning entry in the 2018 Everything Change Climate Fiction contest.

In a not-so-distant future, Brie, a pregnant young woman, is forced to work as an artificial pollinator, a job made necessary by the near-extinction of butterflies. The story exemplifies the power of stories by rooting the effects of climate change in a specific region and zeroing in on the experiences of multiple marginalized women working on the dirty, exploitative front lines of human adaptation in the face of environmental degradation.



She would kill for a Bartlett pear or, better yet, a ripe plum. Like the rest of the world, she'd been hungry for years, but now her cravings were insatiable, the despotic embryo in her womb demanding all manner of foods she couldn't afford. Even her name, Brie, a childhood derivative of Bridget, made her mouth water, evoking an aroma of better days. Her most recent meal, if one considered a pack of stale Day-Glo crackers nourishment, had come from a vending machine in the San Diego bus station at two o'clock on Sunday morning.

Now, hours later, Brie hoisted herself onto her knees and peered over the vinyl seat to the back of the bus where nighttime running lights illuminated her friend Carmen swaying and praying with the churchgoing crowd. When she held up Carmen's canvas carryall and pointed to her own mouth, her friend nodded.

They had met in the waiting room at the women's free clinic on Mesa Verde, the only ones there without the tumescent bulge of impending motherhood, exchanging shy smiles, first names, and brief histories as others came and went. Although Carmen was only five years older than Brie, she had already suffered three miscarriages. Despite, or perhaps because of those losses, she and her husband were desperate to conceive another child. At the sound of her name, Carmen stood up and crossed herself, and Brie gave her a thumbs-up. A moment later, she too was summoned. When Brie returned from the warren of examining rooms, Carmen was just emerging, pale and unsmiling. By unspoken agreement they left together. Coffee, while scarce, was still possible. They splurged, pooling their money.

"They won't give me fertility drugs." Carmen's lilting voice faltered. "They say it's too risky given my history." Her face brightened when she heard Brie's news. "Pregnant. That's wonderful. You must be ecstatic." Brie shrugged.

Sensing her mistake, Carmen reached across the table and squeezed Brie's hand. She withdrew it a second later, but not before Brie had observed the telltale blue knuckles of a pollinator. The skin around the joints expanded and contracted in ocean waves as the bones shifted.

When their eyes met again, it was Carmen's turn to shrug. "My husband hates them," she confessed, rotating her hands to show the inky

blue rivers—heart line, life line, fate line—that wound between lighter aqua callouses. "He says they make him look a poor provider. I tell him, 'We have to eat; besides, it's just a job.' He says, 'An insect. What kind of a job is that?'"

Pollinators. After the die-off a new underclass had sprung up to fill the role previously played by flies, beetles, wasps, butterflies, and other winged creatures. Culled from the ranks of the disadvantaged, a small cohort of females now earned their wages reaching, squatting, bending, dusting, turning their hands blue with electrostatic chemicals—all to ensure that the 1 percent of the population with money to burn on brandy and figs had access to cross-pollinated fruits and vegetables.

Brie's stomach growled an involuntary complaint. Carmen cocked her head, concern clouding her brown eyes. The next instant, she was on her way to the counter, returning with a child's carton of milk in one blue hand.

Gratefully, Brie accepted it. "Some mom, huh? Homeless. No money, no job, no skills."

"Skills?" Carmen snorted. "Skills make you too expensive. Here," she took out a pen, scribbled on the rough brown napkin. "You don't have to show any papers," she said, draining the last of her coffee. She wiped the paper cup clean and stowed it in her purse. "Although I suppose papers aren't a problem for you."

The reflection that stared back at Brie from the darkened windows of the bus was thin and tired. In another life she had been pretty. Now, except for the growing seed in her pelvis, she was gaunt and ugly.

The corn tortillas in Carmen's backpack had left a rancid taste in her mouth, and she wished she had a breath mint. She hated corn the

way she hated fish. Corn cereal, corn chips, corn on the cob, hominy, hush puppies, creamed corn, corn soufflé, corn bread, corn dogs (sans dog). In other parts of the world, it was rice. Wasn't it hard enough being pregnant without craving foods that existed only in memory? Artichoke boats dipped in butter, Chenin Blanc paired with pork roast and prunes, blueberries. When she closed her eyes, her limbic brain flooded her senses with Proustian memories of smoky almonds. She'd eaten her last tree nut in middle school when they could still be purchased by ordinary people, albeit at exorbitant prices.

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She'd fallen for one of the oldest tricks in the book—food.

She had met him at a free open-air art show in Balboa Park she'd seen advertised on a flyer in the shelter's community room. It was early enough in the evening that the grass still felt warm under her feet as she strolled the grounds trying to act swanky, pretending she wasn't lonely. She could smell pine and eucalyptus, and when he came up beside her, she smelled licorice on his breath.

"What do you think?" He gestured toward an abstract sculpture on a pedestal a few feet in front of them.

Squinting, she saw an opaque pool of white glass topped by a floating yellow island. She closed her eyes, opened them, looked again. There was a gigantic fried egg, its white skirt curling and browning around the edges, its yolk a perfect sunny-side up. In her mind she added sizzling strips of bacon. She had skipped breakfast—and lunch. She sighed. "It makes me hungry."

"Me too." He grinned. "Say, I have eggs in my fridge. Brown sugar, a small

stash of pecans from the fat years. How about it? I make a mean pecan pie. We can wash it down with some Chianti I've been hoarding."

She had fond memories of family Thanksgivings as a child. After the first set of dishes had been cleared, her dad and assorted aunts and uncles and nebulous cousins who swept through at holidays like Kuiper Belt comets would sigh with contentment and pat their stomachs to the whirl of cream whipping in the kitchen. And then her mother would carry out the pies in ceremonial fashion: pumpkin and pecan—one each—the pumpkin pie's rich, sweaty face freckled with spices, the pecan's surface studded with sugar and nuts.

His apartment was near the ocean, once prime glass-and-stucco beachfront, now a dilapidated walkup in peril of being washed away by the next catastrophic storm. They waited until the pie was baked and eaten, then took what remained of the bottle to bed. Afterward, her tongue loosened by wine and pecans, she revealed her darkest secret. "I'm a killer," she said, grabbing the bottle and licking the last drops from its glassy lip.

The summer she turned six years old had seemed endless. In South Haven, Michigan, where she grew up, kids were still playing outside in shorts in September while their back-to-school sweaters languished in closets. Boats typically dry-docked at the end of the summer continued to float in their usual berths through October.

Life was good—until November 22, when meteorologists predicted a killing freeze. Suddenly everybody in South Haven remembered a presence they had taken for granted. Within hours of the dire prediction, an army of amateur entomologists could be seen combing roadsides, rustling through milkweed pods and dying goldenrod, trying to spot elusive orange wings. At her mother's urging, they had joined the crusade armed with one ancient, green collecting net between them. The holes didn't matter; the butterfly clinging to a muddy puddle, opening and closing its tattered wings, was too feeble to escape. Much of the lustrous orange power was gone from its wings. Brie lifted it gently, cupping the fragile creature in the palm of her hand for the journey home, transferring it to a plastic mayonnaise jar at the kitchen table. "I'll keep you safe," she promised, kissing the jar goodnight and setting it on her bedside table, where it was the last thing she saw before falling asleep. The next morning the butterfly was dead, one of thousands of Lepidoptera asphyxiated in a variety of Ragu, pickle, peanut-butter, and other wide-mouthed coffins. The delicate black legs that had gripped her palm so trustingly were curled in death.

Malnutrition was notorious for shutting down one's reproductive organs, and she had counted on her body rejecting the pie-man's sperm. "Not starved enough," she speculated one month later, bending over the toilet, retching.

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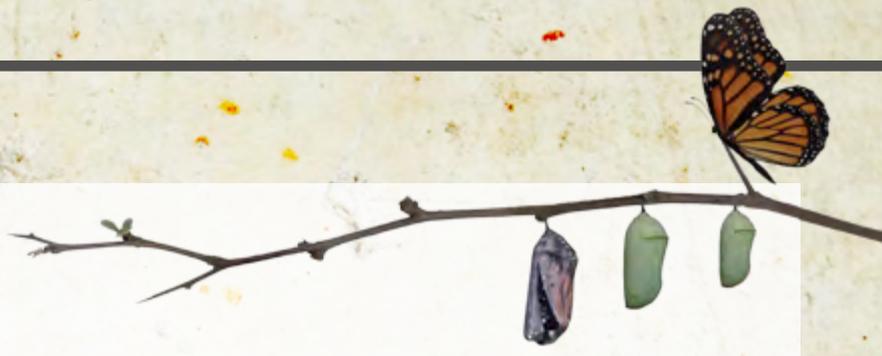
The bus slowed as the driver navigated a sleeping town's main street and turned into the parking lot of what appeared to be a municipal ballpark and playground. Brie could just

make out a Rotary Club sign. Denair, California: "Oasis of the San Joaquin Valley." Oasis was a misnomer, she decided, judging from a broken swing set silhouetted against a tangerine-and-aqua sky. The lot was empty except for a motor coach the size of two tractor-trailers parked in the northeast corner and a few scattered pickup trucks.

On the bus, the singing stopped. Frowsy women roused themselves: straightening, smoothing, patting, brushing sleep from their eyes and lips, gathering shopping bags and purses. Earlier, when they boarded the bus in San Diego, Brie had asked Carmen about the motley collection of pollinators. Some were nomads, Carmen said, following crop cycles like surfers searching for the perfect wave before the oceans turned brutal. But most were just down-on-their-luck gals who needed extra cash to get over a hump. "Tumbleweed women like us."

Brie climbed down from the bus yawning and stretching, tonguing the plaque on her teeth. She could just make out bodies moving around what looked like charcoal braziers beside some of the pickups. She sniffed, hoping for bacon, only to be disappointed by charcoal fumes and smoke. Watching Harvest of Shame in high school as part of a social justice class, she had pitied the impoverished mother who couldn't afford milk for her children. She half expected Edward R. Murrow to descend from the huge coach, cigarette dangling from the corner of his mouth, smoke spiraling into the dry air, eager to question this new breed of migrants. "What did you eat for breakfast today?" he would ask, thrusting a microphone into her face.

The air felt dry enough to combust spontaneously, although after the stinky bus even parched air was refreshing. A rogue sagebrush struggled through a



crack in the asphalt near her feet. Pale grit, sand or salt or possibly broken glass, crunched under her feet as she shifted. Behind her she could feel the bus cooling, its hot metal hardening like taffy.

When a second bus turned into the lot, she felt an insistent tug on her wrist. Carmen.

“Hurry,” Carmen whispered. “We have to be first in line.”

By common accord the pollinators coalesced into a queue that snaked across the lot toward the palatial coach. Meanwhile, a dozen well-fed prisoners in baggy orange shirts and trousers began disembarking from the newest arrival, followed by a handful of holstered guards. In contrast to the eager, hungry women, the prisoners’ steps were unhurried, their labor free, and therefore, presumably, guaranteed. Their faces were shuttered.

A man with a clipboard emerged from the motor coach.

“Go.” Carmen pushed.

The paperwork, as her friend had promised, was nearly nonexistent. In return for her signature, a curt woman wearing a California Almond Growers Association name badge handed her a five-gallon bucket, a pair of thin latex gloves, and a bag of what looked like blue flour. “You’ll get paid at the end of each day. In cash. If you run out of powder before tomorrow, it’ll come out your wages. Use the gloves for protection.” Without looking up, she motioned to the next person in line.

Killing the monarch had been an innocent mistake, although Brie still blamed herself for its death. It had been one of the first victims of the devastating die-off. Summer after summer, the number and variety of pollinators plummeted. Flowers bloomed ahead of schedule and their anthers, thick with fertile pollen,

“The next morning the butterfly was dead, one of thousands of Lepidoptera asphyxiated in a variety of Ragu, pickle, peanut-butter, and other wide-mouthed coffins. The delicate black legs that had gripped her palm so trustingly were curled in death.”

dried and withered untasted. Insects arriving too late for the connubial feast starved. Geneticists asserted that natural selection would soon reestablish the proper rhythm, given time and sufficient generations of offspring, but the world was still waiting. Spring continued to arrive earlier and earlier, and angiosperms continued to bud and flower before the dwindling supply of pollinators were primed and ready. Only insects that fed on human blood and skin, refuse and decay—of which there was a limitless supply—thrived. Blattodea, Culicidae, Cimicidae, Psocoptera. Cockroaches, mosquitoes, bedbugs, booklice.

She had committed a less innocent mistake her junior year in college. After a night of hard partying, she had awakened in bed with one of her boyfriend’s fraternity brothers. The subsequent messy breakup had triggered an emotional meltdown. She stayed up nights, sometimes crying, mostly drinking cheap vodka in an off-campus apartment she shared with a roommate she rarely saw. Days she slept in, missing lectures, forgetting to hand in papers, blowing off exams, withdrawing at the end of the semester. She went home to South Haven to a tepid welcome and a lecture about “maturity.” Adults, her parents informed her, were resilient. Adults didn’t lock themselves in their rooms, crying. Adults didn’t lose scholarships,

and if they did, they went out and found a job. A week later, a little after dusk, a deer leaped across the road as she was driving home from the mall. Her parents’ car was totaled.

Mexico sounded like a good place to do some growing up. The bus was almost to the Tijuana border when she ran out of money.

The shelter in San Diego where she found refuge was clean. On Sundays a succession of local churches delivered an evening meal, although eating with strangers only increased her loneliness. Calling her folks was out of the question. They’d tell her to come home.

The second bus, this one chartered by the California Almond Growers, had padded seats and an onboard toilet. The women perched on the edge of their seats, clutching their buckets. Glancing down, Brie read the label on the plastic bag: Warning: This product contains chemicals known to the State of California to cause cancer, or birth defects or reproductive harm. She lifted her chin and stared out the window.

The staging area for the almond offensive was an encampment covering several acres of parched grass. A cinderblock bathhouse stood in the center of the clearing, surrounded by several large canvas tents which gave the scene a circus-like feel. To one side, a fleet of bucket trucks waited, cranes collapsed over their backs like

# Literally, Stories of Climate Change

**Everything Change: An Anthology of Climate Fiction** is a project of the Imagination and Climate Futures initiative of the Arizona State University. iMPACT caught up with Angie Dell, associate director, Virginia G. Piper Center for Creative Writing and Joey Eschrich, editor and program manager, Center for Science and the Imagination, to know more.

Excerpts from the e-mail interview. The entire interview can be accessed online at [www.asiango.org](http://www.asiango.org).

**iMPACT: What does “Everything Change: An Anthology of Climate Fiction” aim to do?**

Our goal is to make the effects of climate change, which are often creeping, pervasive, and slow-moving, more visceral and emotionally immediate for our readers. We think stories are the best way to do this: they help us see the world through the eyes of people whose experiences and ways of being are very different from our own, and they root the sprawling, global, often abstract-seeming effects of climate change in actual, tangible places and communities around the globe.

We think stories can be a force for building empathy, bolstering understanding, and catalyzing conversations that lead to action.

**The apocalyptic nature of the climate change discourse might put away a lot of readers who are looking for life-affirming endings and an escape from reality. How do you situate fiction that touches and enlightens, within this framework?**

Climate fiction is certainly often a

“ In these stories there is little confidence in national infrastructures that are meant to manage disaster and trauma. ”

pessimistic genre, as it inevitably focuses on what we’re losing to climate chaos and how climate change affects people’s lives, introducing new stresses and exacerbating existing inequalities. But more hopeful strains of thinking are often present in these stories, when people apply their ingenuity to tricky problems or tough situations, or when mutually supportive communities form in times of crisis.

The destruction wrought by climate change is also an opportunity to apply human ingenuity to a whole new set of problems and to form new kinds of communities and networks of collective action.

**What are you seeing in terms of the concerns of writers from high-income nations vis-à-vis those that are traditionally seen as on the path to development?**

One thing is strikingly similar with regard to “more developed” and “less developed” settings: in these stories there is little confidence in national infrastructures that are meant to manage disaster and trauma. And though the winners of the contest hail from many different countries, their concerns and approaches are often quite similar, particularly with regard to class divisions that inevitably widen in the face of disaster and response. No matter how wealthy a country or

community is, a lower class will emerge to get pushed closest to the trauma and face the greatest risk of being left behind—it’s a concern we see a lot in these stories, and one that is difficult to imagine solutions to.

You can keep tabs on our work at our website, [climateimagination.asu.edu](http://climateimagination.asu.edu), or email us at [imagination@asu.edu](mailto:imagination@asu.edu) if you have ideas for writing projects that you’d like to see us experiment with. 



Angie Dell, associate director, Center for Creative Writing



Joey Eschrich, editor and program manager, Center for Science and the Imagination



prehistoric scorpions.

The assignment was to work in pairs: the person on the ground maneuvering the bucket truck and the person aloft “dusting” the flowers with a flexible wand dipped in pollen harvested the previous week and stained blue. Through line-hopping and luck, Brie snagged Carmen as a partner.

“Let’s get out of here,” her friend urged as soon as the pairings were made, eyeing the other pollinators with suspicion.

Brie hesitated. The metal boom made her uneasy. “But I don’t know how to work that thing.”

“I’ll teach you everything you need to know.”

Carmen drove fast, a map resting on the dash in front of her. Stretching ahead, as far as the eye could see, were rounded trees in regimented rows, each with its own halo of pearly blooms. Their assigned location was at the far end of the grove. Brie rode shotgun, fingering the wand like a child with a new toy, watching its filaments jiggle as the truck bumped over the rough ground. At first the flowering rows seemed lovely—almost magical—dark trunks and airy crowns stretching as far as the eye could see, but as they rode on and on, monoculture became tedious and then frightening, and she began to yearn for a coarse, sprawling pinyon pine.

True to her word, Carmen gave her a crash course in booms. Two sets of controls, upper and lower. Rotation. Elevation. Tilt. Emergency stop. The person on the ground maneuvered the metal arm, while the other played Tinkerbell with the electrostatic wand. Almond trees, Brie learned during

Carmen’s brief tutorial, were picky about their prospective mates, so they required cross-pollination. That meant that after picking up pollen on the electrostatic wand, the boom must swing across the aisle to a different tree. Back and forth, back and forth, in a swooping aerial ballet. Even with Carmen weaving the bucket above and around the various branches, reaching the farthest blooms demanded an athleticism dormant since Brie’s high-school volleyball years.

Five exquisite, creamy petals comprised a single almond flower that deepened to a magenta heart. Sharp green sepals stood in contrast to the delicate petals. One touch from her wand changed all that. “I’m painting the roses blue,” she hummed, swiping with abandon. The novelty soon wore off.

They traded places every 30 minutes, sometimes sooner, whenever the strain became unbearable. After the first few rotations, Brie’s shoulders felt hyperextended and her neck ached from craning to see the tallest branches. They broke at noon for lunch, prepackaged corn toasties delivered by a food truck, although for once Brie wasn’t hungry, thanks to the cloying smell of flowers. Occasionally they heard other pollinators shout or a truck backfire. Once when an unidentified jeep cruised by their station, Carmen called, “Get down!” and she obeyed, crouching behind the veil of branches until the vehicle passed. Ten feet below, she sensed Carmen cowering in the cab. When she asked about it during the next break, Carmen scowled, and Brie didn’t press.

By the end of the day, her arms were so sore she couldn’t lift a spoon to the bowl of corn chowder served in one of the larger tents. After a few painful attempts, she returned to her assigned sleeping tent and collapsed

onto the nearest cot. As the minutes passed, she recognized the soft shuffle of tired feet and heard the beds around her shift. There were no giggles—no gossip. Midnight confidences—like avocados—were a luxury for the non-weary elite. Later—she wasn’t sure when—she detected the random sounds of sleep: throat clearings, sighs, an occasional snort.

Sleep would not come. Her shoulders ached. A sour, yeasty smell emanated from her armpits and crotch. Filthy and tired, she got out of bed and groped her way to the exit, where she opened the flap and stepped into the night. In San Diego, she’d grown used to perpetual light and noise. Here it was different—silent, dark, remote. As her eyes adjusted, she noticed a blue glow radiating from the almond grove—not a flat matte blue, but a shimmering phosphorescence like the ocean at night, only bluer, thickest where treated branches overlapped. Even the ground glittered with pinpricks of blue light where grains of powder had spilled or sifted. The hair prickled on her arms. When she looked down she saw that they, too, shone blue. Only her hands, protected by the disposable gloves, were free of stain.

The bathhouse was deserted. Grabbing a towel, she headed for a row of shower stalls, groaning as she eased out of her jeans. It hurt to raise her arms to lift the sliver of soap from a wire shower caddy. Clouds of steam billowed around her feet. She stood under the spray, allowing its liquid warmth to ease her back to happier times—football games and sledding, hot dogs with mustard and cocoa.

The plastic shower curtain rippled, and cold air coiled over the rod. Her chest tightened, and she crossed her hands instinctively over her belly to protect her unborn child. Why had

“So? That’s just dye. They add it to keep us honest.

It marks the trees we’ve treated.”

“Just dye? Didn’t you read the label? It’s toxic.”

Carmen shrugged. “So is starvation.”

she come here alone? She shut off the shower and listened, imagining an escapee from the prison tent creeping across the tile on silent, rubber-soled shoes. The showerhead was screwed into the cement. Lacking a better weapon, she removed the soap caddy from the showerhead, and then, armed with nothing more lethal than a flimsy metal basket, ripped open the curtain.

Carmen sat on the changing bench, hugging her knees. She looked up at the flap of plastic sheeting. “You shouldn’t come here alone.”

Brie’s knees buckled with relief. The metal caddy slipped from her fingers and clattered to the tile. “Do you have any idea,” she began, grabbing her towel and sinking down on the bench, “what you just put me through? I thought you were a slasher.”

“It’s not safe here for you—or your baby.”

Safe? Was Carmen crazy? Brie held out an arm, still faintly turquoise, despite the desperate lathering. “This is what’s not safe. Look at my arm. It’s blue.”

“So? That’s just dye. They add it to keep us honest. It marks the trees we’ve treated.”

“Just dye? Didn’t you read the label? It’s toxic.”

Carmen shrugged. “So is starvation.”

In the morning Brie’s muscles, still saturated with lactic acid, screamed in pain when she tried to move. Only hunger forced her to roll out of bed and follow the others to the breakfast tent. Cornflakes, a packet of sweetener, two ounces of synthetic milk. With Carmen behind the wheel, they reached their post before eight o’clock.

As she climbed out of the truck, Brie remembered her gloves, lying beside her cot where she’d dropped them the night before.

Brie took the first shift in the bucket. A slight breeze from the east ruffled the floral sea around her. The sun warmed her skin and her muscles loosened with each stretch of the wand, until something like hope began to swell. The wad of bills in her pocket, yesterday’s pay, came with the promise of more to come. In some deep, unseen cavity of her body, cells were dividing and specializing of their own accord, creating a new person. When she got back to San Diego she would call her folks and tell them about the baby. Just out of reach, a branch of still-white flowers beckoned. Below, she could hear Carmen talking angrily on her cell phone, to her husband no doubt. Reluctant to interrupt an argument by asking her friend to shift the bucket, Brie leaned over the rail and extended her arms. She was almost there when the first contraction struck.

Instinctively, she dropped to a fetal curl. The pain was so intense she could barely breathe. Somewhere in the distance she heard Carmen shouting up to her, and then, miraculously, the boom began to descend in a series of jerks. If Carmen had driven fast before when there was little at stake, she was a maniac now. Brie held her aching belly and tried not to pass out. Somehow they reached the camp without breaking an axle. As Carmen helped her from the truck, neither mentioned the plum stain spreading across the upholstery.

She awoke, groggy and disoriented,

in what seemed to be an infirmary tent, a thin pillow wedged under her head. On the other side of a flimsy curtain people were arguing about a broken wrist—was it accidental or intentional? “Escape” was the last word she heard as she fell back asleep, one hand on her pain-free belly. When she opened her eyes again, Carmen was sitting in a folding chair beside her cot.

Perhaps it was her friend’s wet, dark eyelashes, or maybe it was the prisoner, his orange arm bound in a sling, hobbling past the foot of her bed, that conjured the monarch butterfly. It appeared from nowhere and drifted toward her bed, wafted by an invisible current. Spellbound, she held her breath until it alighted on the sheet. The orange powder on its wings had been restored to its original velvety smoothness. The black veins were bold and clear, and the white checkerboard markings sparkled. She half expected to see its delicate tongue unfurl to sample the sheet’s rough grain; instead it sat opening and closing, opening and closing its wings like a door to the future. She eased one hand toward it, index finger extended like Michelangelo’s Adam. It was so close. Then, remembering the other butterfly, she stopped. Enjoying its untrammelled freedom, the butterfly spiraled into the air. A moment later, it was gone, as if it had never been. **i**





FOR IMMEDIATE RELEASE

## Sustainability Summit in Asia 2018: is the circular economy achievable in Asia?

Policymakers, businesses and consumers need to align interests in order to realise the circular economy to drive nation's growth

**Kuala Lumpur 15th November 2018** – Implementing the circular economy is arguably the best chance Asia has in reversing the causes of climate change and achieving the environment-focused sustainable development goals. Yet there are challenges to be met. Businesses and policymakers need to work together to adopt long-term initiatives to realise the circular economy for the country's growth.

Leading the conversation, over 200 scientists, business leaders, entrepreneurs, policymakers, regulators, NGO representatives and academics across Asia gathered at Sunway City, Kuala Lumpur for a stimulating discussion about the circular economy.

"Asian governments, companies, groups and others can use circular initiatives to benefit changing societies without sacrificing economic growth. From mass urbanisation to innovation in agriculture, new ideas for sustainable initiatives matter to the region and to The Economist. By bringing global and regional experts to Kuala Lumpur we plan to debate how such ideas can be implemented effectively," said Miranda Johnson, South-East Asia correspondent at The Economist.

The full-day summit themed 'Going Full Circle' opened with a dialogue on policy framework for sustainable development goals adoption in Asia before outlining the need to drive mainstream conversation among policymakers, businesses, as well as citizens to step embrace long-term initiatives that will lead to positive effect in economic goals while leaving a better planet for future generations.

Speaking to conference attendees, Sadhguru, the founder of Isha Foundation had a very pragmatic, reconciliatory message geared to galvanise positive action. "We need not destroy business, we need to transform businesses. We should strive to officiate the marriage between ecology and economy."

Throughout the dialogue, delegates addressed the need for public, private partnership to align interests and significantly step up its development efforts across sectors to find multilateral solutions to overcome transboundary challenges.

"We are living in an age where technology is transforming the world. We can already see the effects of technology on the global economy, geopolitics and society. With the right innovation and invention, I believe the circular economy is achievable in Asia. I trust this summit will provide meaningful solutions to advance the sustainable development agenda in the region. We are delighted to partner with The Economist Events through the Jeffrey Sachs Center on Sustainable Development at Sunway University for the second consecutive year," said Jeffrey Cheah, founder and chairman of Sunway Group and Chancellor of Sunway University.

Another key highlight, The Economist debate motioning that sustainability must be approached using global free market principles saw a spirited exchange between Robert Kraybill of Impact Investment Exchange and Chandran Nair of Global Institute for Tomorrow. The motion was defeated by Nair's advocacy that policymakers were crucial to curb the free market's tendency to put profits and individualism before the planet. Said Nair, "Rights and freedoms have to be redefined, rethink governance (so that) collective welfare comes first. I urge the Malaysian government to rethink that".

Finally, in the closing keynote, Yeo Bin Yee, minister of energy, science, technology, environment and climate change, Malaysia urges her government to take action; it is not only important to reuse, reduce and recycle, she urges everyone to replace; "We need to think about the problems plastics create and replace them with bio-degradable alternatives."

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Chaired by The Economist editors, featured speakers included:

- **Yeo Bee Yin**, minister of energy, technology, science, climate change and environment, Malaysia
- **Richard Kooloos**, director, sustainable banking, ABN AMRO
- **Vincent Mortier**, deputy chief investment officer, Amundi
- **Aloke Lohia**, founder and group chief executive, Indorama Ventures
- **Leeko Makoene**, founder, Made With Rural
- **Jeffrey Sachs**, chairman, Jeffrey Sachs Center on Sustainable Development, Sunway University and director, United Nations Sustainable Development Solutions Network
- **Stefan Ranstrand**, president and chief executive, TOMRA Systems

SPONSOR



Founding supporter **The Jeffrey Sachs Center (JSC)** is the hub of the United Nations Sustainable Development Solutions Network (UNSDSN) for research and policy practice to advance achievement of the Sustainable Development Goals (SDGs) in the ASEAN region. JSC was established in Sunway University through a gift of \$10 million from the Jeffrey Cheah Foundation. It is chaired by Prof Jeffrey Sachs, director of the UNSDSN and special advisor to the UN Secretary-General on the SDGs.

The Center is located in Sunway City, a rehabilitated mining wasteland turned wonderland, and Malaysia's first green integrated township listed in the country's Green Building Index.

-ENDS-

For further details and questions, and to register your attendance, please contact:

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### About The Economist Events

The Economist Events is the leading provider of international forums for senior executives seeking new insights into strategic issues. These meetings include industry conferences, management events and government roundtables held around the world. As part of The Economist Group, The Economist Events is a highly-respected brand with a 162-year history and an unrivalled reputation for excellence and independence.

Each meeting organised by The Economist Events delivers objective and informed analysis. Our meetings provide unusually high-level forums where senior executives can gain insights, exchange views and compare strategies. Visit [www.economist.com/events](http://www.economist.com/events) for more information.

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## **VIETWATER 2018 - THE LEADING TRADE SHOW ABOUT WATER INDUSTRY IN VIETNAM WAS OFFICIALLY ENDED WITH NOTEWORTHY STATISTICS, MARKED A MEMORABLE EXHIBITION**

Returning with the 10th version, Vietwater 2018 displayed a strong line-up of technical products systems and services from first-rate providers in the world, held in conjunction with the helpful seminar series and workshop hosted by The Water Associations from different countries, creating an enjoyable place to exchange ideas and knowledge.

"It's been a great pleasure organising and hosting the 10th edition of Vietwater this 2018. We would like to express our appreciation to more than 500 exhibiting companies for showcasing their latest products and solutions to trade visitors and attendees. Our thanks goes out to all Supporting Associations, Sponsors, Speakers, Media and Partners for supporting Vietwater 2018 and making it a great success! See you again next year!" - Mr. BT Tee - General Manager of UBM Vietnam

### **Satisfaction from exhibitors**

Spending a decade of Vietnamese water industry support and engagement, Vietwater has been improved and became a place to show top-rated products in industry and exchange specialistic knowledge. Returning in 2018, Vietwater extended the exhibition area up to 13,000 sqm, converged more than 500 exhibitors from different places in the world, including 13 international group pavilions from: UK, Belgium, Finland, Germany, Denmark, Korea, Netherlands, China, Taiwan and Singapore.

The highlight exhibitors at VIETWATER 2018: ARK, Balem, Binh Minh Plastic, Dow Chemical, JFE Engineering, Goshu Kosan, Kobelco Eco Solutions, HCP, Tan A Dai Thanh, Tabuchi, Tsurumi Pump, Sawatech, Viet An Environment, Vinaworldlink, Vucico,... and many other companies.

**MR. NGUYEN ANH TU** - Deputy General Director - TAN A DAI THANH CORPORATION: "Tan A Dai Thanh was established 25 years ago and is a leading company in providing water container, water treatment and water preserving equipment. The 10th edition of Vietwater, organized by UBM which is endorsed by governmental agencies supports the development of water businesses in Vietnam. Through the years that we have participated in this exhibition, we see the number of regional and international visitors plus the quality of attendees improve, offering promising opportunities for exhibitors. We hope that Vietwater will further develop and expand its reach to the Northern regions, and Tan A Dai Thanh will continue to support Vietwater."

**MR. ANDRE RICHTER** - Regional Executive Officer - Asia South & Pacific; Managing Director - KSB Singapore (Asia Pacific) Pte Ltd: "KSB is a 140-year old German company and we are focusing on pumps, valves, and the whole service business around these products. It's great to be here in Vietwater - since we consider Vietnam as one of our most important markets most especially in the water supply, wastewater and the service applications sides. We believe that joining Vietwater 2018 will help us to showcase our state-of-art and quality products to the Vietnamese market."

### **Positive feedbacks from visitors**

After 3 days, the exhibition welcomed a plenty of visitors group delegates from big local businesses, received many positive feedbacks about the scale exhibit quality and excellent organization.

**MR. HUYNH THIEN DINH** - Vice General Director - CANTHOWASSCO: "This is our third time we visit the show. We are so surprised by the scale of the exhibition that is over our expectation. The exhibition is diversified in term of domestic and international exhibitors as well as displayed products that we are looking for. In general, we are happy with the result gained from the show."

**MR. THAN TRONG CANH** - Engineer - CUU LONG CONSTRUCTION CONSULTANT COMPANY: "This is my first time visiting the show. We are impressed by the scale of the event providing plenty of products from various countries. Besides, we are happy with the professionalism from the organiser and their warm welcome. We take interest in sensors as well as water filters and some companies with interesting products. See you next editions."

### **Useful technical seminar:**

Not only being a place to exhibit the products, Vietwater also brought technical seminars and workshops hosted by The Water Associations from different countries in the world. Netherlands Consulate General & Netherlands Water Partnership conducted a seminar named: "Building an Integrated and Sustainable Urban Water Future" and Workshop on water-agri-food; Australia Water Association shared a seminar titled: "Water Utility Improvement Program Workshop" and Gender Equality in the Water Sector Workshop; Taiwan External Trade Development Council (TAITRA) hosted seminar: "Innovation in shape of water: Towards a sustainable future". Besides, there were also a seminar from Singapore Water Association, a seminar hosted by the organizer UBM with the subject: "Solid waste collection, transportation and treatment technologies suitable to Vietnam's conditions", and VIETWATER 2018 INTERNATIONAL CONFERENCE: "Vietnam Water Industry with Industrial Revolution 4.0". The event attracted a number of delegates to come and discuss, opening a positive and memorable environment for exchanging useful specialistic knowledge.

### **See you in 2019!**

**VIETWATER** - the leading trade show about water industry organized by UBM Vietnam will return on 6-8 November 2019 at Saigon Exhibition & Convention Center (SECC), Ho Chi Minh City, Vietnam; and on 24-26 July 2019 at Hanoi International Exhibition Center (ICE), Hanoi, Vietnam.

-ENDS-

Additional information:

### **VIETWATER 2018 at a glance:**

Exhibition name: The 10th International Water Supply, Sanitation, Water Resources and Purification Event - VIETWATER 2018  
Venue: Saigon Exhibition & Convention Center (SECC)  
Address: 799 Nguyen Van Linh Parkway, Tan Phu Ward, District 7, Ho Chi Minh City  
Date: 7 - 9 November, 2018 (Wed - Fri)  
Time: 09:00hrs - 17:00hrs

### **About Vietwater:**

Aiming at developing water industry, one of the most popular exhibitions about water supply and waste water treatment - VIETWATER was inaugurated the first time in 2008 in Ha Noi. This is the only business event in water industry conducted by Vietnam Water Supply and Sewerage Association (VWSA), and supported by Vietnam Ministry Of Construction (MOC). VIETWATER is in the event series organized by UBM Asia - the leading commercial organizer in Asia together with following exhibitions: ASIAWATER, Myanmar Water, Thai Water and Water Philippines.

MTA VIETNAM is organised by UBM, which in June 2018 combined with Informa PLC to become a leading B2B information services group and the largest B2B Events organiser in the world. Please visit [www.ubm.com/asia](http://www.ubm.com/asia) for more information about our presence in Asia.

## Breather's Digest: Secrets to Sustainable Air Quality in the Workplace

By iMPACT Staff

Competitive benefits and a high-paying salary are just a couple of things that make up an enjoyable workplace. Employees have many requests and requirements for a conducive work environment, but seldom do they consider the air they breathe. Perhaps it's time we all did.

According to Dr. Stephen Snow of Southampton's School of Electronics and Computer Science, indoor air quality affects the productivity of employees. Poor air quality could lead to several health problems and reduced cognitive performance, ultimately influencing the overall efficiency of the organization.

iMPACT takes a peek at how workplaces can maintain a sustainable air quality and reduce their carbon imprint. From simple everyday practices to new products and solutions, we have the seven things one can do to create a better place to work!

### 1. Clean out Particulates.

Nothing beats a clean office. Instead of traditional cleaning devices, use vacuum cleaners equipped with high efficiency particulate air filters so that minute air particulates are history!

### 2. Say Goodbye to Air Fresheners!

Believe or not, most sprays and scented products are designed to only fragrance the air and not clean it. Volatile organic compounds (VOCs) and phthalates are commonly found in air fresheners and are considered harmful to human health, potentially damaging organs like liver, lungs, and kidneys.

### 3. Master the Right Moisture Level

Humidity levels within 30% to 50% range will hinder the growth of mold and other allergens, keeping those nasty pollutants at bay. Using appropriate appliances such as dehumidifiers can help you achieve optimal humidity, while keeping out pollutants.

### 4. Go Green on Paint

Nothing's more fun than decorating your workplace for a fresher look, but is it environment-friendly? Choose paint products that are water-based and contain low VOCs. Make sure that the paint has completely dried before employees start work.

### 5. Feel the Breath of the Earth

Achieving a sustainable air quality doesn't have to be too complicated. In fact, sufficient ventilation is enough to keep everyone cool. Open up your windows from time to time to let fresh air in. Check and clean air ducts to remove harmful pollutants and boost proper circulation in the workplace.

### 6. Make Friends with Filters and Detectors

It might look expensive, but purchasing water filters and gas detectors are strongly advised, especially in newly constructed spaces. Installing water filters reduce chlorine in water and prevent the gas from being inhaled while radon and carbon monoxide detectors help you monitor dangerous gases in your workplace.

### 7. Have Some Space

Do you know that use and placement of furniture and equipment may affect the distribution of air in an occupied space? Consider careful planning of space and proper placement of equipment to allow proper ventilation. More space equals more peace of mind! 

## Grants and Prizes

### Grant Opportunities

In this section, we list a few select open grant opportunities. For the complete list of available grants, sorted by geographical location, thematic area, etc. please visit [www.asiango.org](http://www.asiango.org)

#### 1. Preservation Assistance Grants for Smaller Institutions

**Deadline:** January 31, 2019

**Amount:** USD 15,000

*The Preservation Assistance Grants for Smaller Institutions aims to support the development of disaster plans and collaborative work with local institutions for training in disaster preparedness and emergency response to address the risk to cultural heritage materials.*

#### 2. Climate & Clean Energy Projects in Sub-Saharan Africa and Asia

**Deadline:** January 20 (For Africa applications) & 24 (For Asia applications), 2019

**Amount:** USD 50 - 500,000

*This call for proposals aims to help projects and businesses with focus on the use clean energy and/or climate resilience technologies, products or services such as biogas, solar, wind, hydropower and etc.*

#### 3. EU-Philippines Call for Proposals: 2018 EIDHR Country-based Support Schemes

**Deadline:** January 31, 2019

**Amount:** €300,000 - 480,000

*EU-Philippines Call for Proposals will support the work of civil society organizations in tackling the needs of vulnerable and marginalized groups in the Philippines.*

#### 4. Public Safety Canada: Communities at Risk – Security Infrastructure Program (SIP)

**Deadline:** January 31, 2019

**Amount:** USD 100,000

*The "Communities at Risk: Security Infrastructure Program (SIP)" is dedicated in supporting the implementation of projects to help communities with a demonstrated history of being victimized by hate-motivated crime through the enhancement of their security infrastructure.*

#### 5. Call for Proposals: Small Research Grants

**Deadline:** February 1, 2019

**Amount:** USD 50,000

*The Small Research Grants aims to support education research projects that will contribute to the improvement of education in areas such as, psychology, sociology, economics, history, and anthropology.*

#### 6. Call for Applications: The Start Free Challenge

**Deadline:** February 15, 2019

**Amount:** USD 100,000

*The Start Free Challenge seeks replicable innovations that speed up the reduction of new HIV infections in children to less than 20,000 by 2020.*

#### 7. Laos Innovate and Learn Grants

**Deadline:** February 16, 2019

**Amount:** €5,000 - 200,000

*The Innovate and Learn Grants targets groups and/or organizations focused on testing and scaling new approaches that are human-centered and gives importance to indigenous groups and ethnic minorities, young and the elderly, the LGBTI community, PWDs and abused women.*

#### 8. Call for Proposals: Senior Fellowships

**Deadline:** February 28, 2019

**Amount:** Up to €500,000

*The Senior Fellowships Call for Proposals under the EDCTP program intends to ensure supportive mentorship structure, sustainable research for researchers in sub-Saharan Africa while contributing to the achievement of SDG3.*

#### 9. Climate Justice Resilience Fund

**Deadline:** April 19, 2019

**Amount:** USD 100,000

*The Climate Justice Resilience Fund is a grant making initiative that aims to support women, youth, and indigenous peoples to create and share their own solutions for resilience.*

#### 10. Small & Mighty Online Grant Application

**Deadline:** April 2019

**Amount:** USD 1,000 - 15,000

*The Small & Mighty Online Grant aims to support programs that promote reconciliation, improve respect for human rights, promote accountability and freedom of expression, and encourage economic growth with more equitable distribution of benefits and greater sustainability.*

### Open Prizes

In this section, we spotlight prizes that are offered to solutions that seek to create a better world. They are ordered by deadline. Please send details of your prizes to [editor@asiango.org](mailto:editor@asiango.org), to be featured in this space.

#### 1. Robert F. Kennedy Human Rights Award 2019

**Deadline:** January 31, 2019

**Amount:** USD 30,000

*The Robert F. Kennedy Human Rights Award honours an individual or group of individuals who stand up to oppression at grave personal risk in the nonviolent pursuit of human rights.*

#### 2. Reaching All Children Challenge: Harnessing Social Protection to Enable Vulnerable Children Access HIV Testing, Treatment & Care

**Deadline:** February 5, 2019

**Amount:** USD 5,000

*The Reaching All Children Challenge seeks to address the gap in evidence that social protection supports HIVs testing, treatment and care for children in low and middle-income countries.*

#### 3. 2019 UNHCR Nansen Refugee Award

**Deadline:** February 8, 2019

**Amount:** USD 150,000

*The Nansen Refugee Award aims to recognize heroes that support refugees, internally displaced and stateless people.*

#### 4. Award for Innovations that Empower Youth in Agriculture and Food Systems

**Deadline:** February 28, 2019

**Amount:** USD 20,000

*The Award for Innovations that Empower Youth in Agriculture and Food Systems grants innovations that strengthen the role of youth (under 35) in agriculture and food systems.*

#### 5. Award for Digitalization and Innovation for Sustainable Food Systems

**Deadline:** February 28, 2019

**Amount:** USD 40,000

*The Award for Digitalization and Innovation for Sustainable Food Systems aims to recognize innovations that impact more than one level of supply chain and strengthen the link between farmers and consumers.*

#### 6. Kuwait Foundation Al-Sumait Africa Prize 2019 for Food Security

**Deadline:** April 30, 2019

**Amount:** USD 1,000,000

*The Al-Sumait Africa Prize 2019 for Food Security recognizes studies, projects, research, and innovations that made a significant impact in economic and social development in Africa.*

# Understanding the Laws of Grants



**W**e have all searched for grants, submitted requisite applications, and twiddled our thumbs awaiting the result, unsure of the nebulous processes that go into a successful application. Fret no more, for iMPACT has decoded the laws that govern the world of grants.

### **iMPACT's First Law of Grants:**

Every grant application will remain at rest and in the saved folder unless compelled to apply by a looming deadline or the action of an external manager.

### **iMPACT's Second Law of Grants:**

The successful submission of a grant depends on two variables—the time interval between the processing of the application and lunch time, and the mass of the printed copy of the application. The probability of acceptance is directly proportional to the mass, and inversely proportional to the time interval.

### **iMPACT's Third Law of Grants**

For every project submitted by your organization, there is (apparently) an equal and better project submitted by another.

### **Laws of Grantodynamics:**

**First Law:** The apparent change made in a community is equal to the difference between the grant received, and the actual cost of the program. The difference is also otherwise called “budget for impact reporting.”

**Second Law:** It is impossible for a project to have as its sole result the upliftment of a community from its current state to a higher state. In other words, after the project, the sociotropy, or the quantitative disorder or randomness in the community, will either remain constant or increase (despite what the “budget for impact reporting” might tell us).

**Third Law:** It is impossible to reduce any social problem to absolute zero through a finite number of grants.

### **Other Laws that Govern Grants, and Special Circumstances:**

#### **Law of Grant Application Language:**

If there are  $N$  words (apart from articles and prepositions) in a grant application, you will have to refer to the dictionary to understand  $N/2$  words.

**Note:** There are unconfirmed rumours that grant organizations have created a specialized thesaurus especially so simpler words can be replaced by more complex ones. This is the first task a new employee is expected to master.

### Law of Grant Eligibility

For every grant that lists N eligibility criteria, your organization will satisfy a maximum of N-1 criteria.

### Law of Grant Application Questions

Each grant application will have the same five questions presented in different ways. The expectation, however, is that the answers cannot be the same, rewritten.

### Law of Grant Deadlines

The harder you work to make a deadline, the more likely it is to be pushed farther just after you have submitted.

**Corollary:** If you do not make a deadline, irrespective of the work you have put in, it will not be extended.

### Law of Grant Conditions

Awarded grants will have conditions that will control everything in the project so that the only creativity an organization might be able to display will fall under two categories:

1. Border designs of the pictures used in the report
2. Accounting

**Note:** There is talk of standardizing the border colour of the photographs used in the report, so that might also be a relic of the past, like midway project course corrections. 🚫

Please e-mail feedback and other grant laws to [editor@asiango.org](mailto:editor@asiango.org)

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|----------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
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| Photo Feature: Women and the Environment                                         | Lensational                             | <a href="http://www.lensational.org">www.lensational.org</a>                                                                                     |
| End-of-Life Solutions for Plastic                                                | Athyron LLC                             | <a href="http://www.miuraboard.com">www.miuraboard.com</a>                                                                                       |
|                                                                                  | Paterson Energy                         | <a href="http://www.patersonenergy.com">www.patersonenergy.com</a>                                                                               |
|                                                                                  | Rajagopalan Vaseduvan                   | <a href="http://www.indianplasticman.com/">www.indianplasticman.com/</a>                                                                         |
| Whose Altruism Is It Anyway?                                                     | Milaap                                  | <a href="http://www.milaap.org">www.milaap.org</a>                                                                                               |
| Seven Campaigns that Made Us Sit Up and Take Note                                | World Wide Fund For Nature              | <a href="http://www.endangeredemoji.com/">www.endangeredemoji.com/</a>                                                                           |
|                                                                                  | Panda Earth                             | <a href="http://www.panda.earth/">www.panda.earth/</a>                                                                                           |
|                                                                                  | Hanna Hedman                            | <a href="http://www.hannahedman.com/hannahedman/">www.hannahedman.com/hannahedman/</a>                                                           |
| Not Missing the Forests or the Trees                                             | Canopy                                  | <a href="http://www.canopyplanet.org">www.canopyplanet.org</a>                                                                                   |
| Green and Grey: The Perfect Shield for a Perfect Storm?                          | Conservation International              | <a href="http://www.conservation.org/global/philippines/Pages/Green-gray.aspx">www.conservation.org/global/philippines/Pages/Green-gray.aspx</a> |
|                                                                                  | Ericsson                                | <a href="http://www.ericsson.com/en">www.ericsson.com/en</a>                                                                                     |
| Human-Centric Design Makes for More Efficient Scaling                            | Digital Green                           | <a href="http://www.digitalgreen.org">www.digitalgreen.org</a>                                                                                   |
| Literally, Stories of Climate Change                                             | Center for Science and the Imagination  | <a href="http://www.climateimagination.asu.edu/">www.climateimagination.asu.edu/</a>                                                             |



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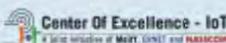
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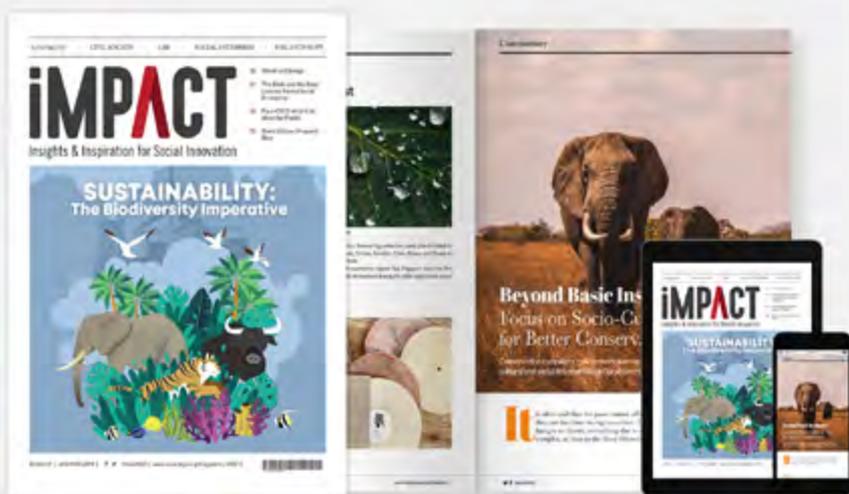
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