The Blue Planet

A MAGAZINE ON SUSTAINABILITY

TOWARDS KNOWLEDGE SHARING

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Editorial

The Blue Planet is a multi-disciplinary magazine jointly published by the Australian Centre for Sustainable Development Research & Innovation (ACSDRI) (www.acsdri.com) and the South Asian Institute for Sustainable Development (SAISD) (www.saisd.org.in).

Both ACSDRI & SAISD are research organisations. Since 2018, both organisations have been undertaking various research projects based on the Sustainable Development Goals (SDGs).

The magazine has both print (ISSN : 2652-7995) and online (ISSN : 2652-7987) versions. The magazine welcomes scholarly contributions in the form of articles and reports from both academics and professionals. The magazine accepts topic related to Sustainable Development Goals (SDGs), innovation relating to SDG, public policy, project showcase, management, environmental science, and any other related topics.

The objective of this magazine is to disseminate knowledge and to propagate dialogue on the sustainability agenda to a mass audience. In this edition, the cover story presents the status of our collective progress towards global Sustainable Development Goals (SDGs). The article highlights that, since 2015, SDG-1 (No Poverty), SDG-9 (Industry, Innovation, and Infrastructure); and SDG-11 (Sustainable Cities and Communities) have progressed most rapidly.

The article by Min Seto explains Social Value Measurement (SVM) as a concept and educates readers on practical approaches to SVM. Dr Kirti Singh illustrates the geological relevance of the Himalayas and showcases the self-less contribution of the Little Green World (LGW) – a voluntary group - and their contribution to protecting the fragile ecosystem of the Ladakh region in India.

Ryan Cook, a sustainability specialist from the Responsible Investment Association Australasia explains aspects of responsible investment. Dr. Tari Vinaya Satyawan Savitri is an environmentalist. In her article, she outlines the harmful effects of chemical pesticides and advocates for sustainable pest management with some examples.

If we live in one of the world's richest countries, does that mean, we are happy? To answer that we must look beyond GDP. Assistant Prof. Shashank Vikram Pratap Singh presents a comparison, between counties with the highest GDP and countries ranked high in the World's Happiest Country index.

In the academic world we all need to publish in scholarly journals. However, publication is not an easy job. Hence, Dr Alison-Jane Hunter provides guidance on the need to publish, how to publish, how to edit and many more tips. Climate change is one of the most important global sustainability agenda of our time. Emma Florence highlights the need for quality climate change risk disclosure by corporates.

Major Namrata Dhasmana highlights uniqueness of Unicorn leadership style. Dr Sumesh Nair explains ethical issue of food waste and provides remedies.

Other than climate change, loss of biodiversity is one of the most alarming issues on the agenda. Creeping development, animal poaching and trafficking lead to a loss of biodiversity. Loss of biodiversity can collapse our eco-system and food security. The sustainability agenda has an emotional aspect and visualisation has an emotional impact. Hence, to promote the sense of biodiversity loss, we have started the #biodiversitymatters campaign. Through nature photography, we intend to make an emotional appeal to protect biodiversity.

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In the last section, the magazine illustrates nature photography as contributed by various photographers and highlights facts and figures relating to biodiversity. The generous contribution by the following photographers helped us to accomplish our objective.

The contributors to the **I LOVE NATURE – Photography Series.**

- Alankar Chandra.
- Nagraj D. N.
- Dr. Devi Prasad Rao.
- Sivarajan S.
- Anuj Mukherjee.
- Jack Foo.
- Mohamed Mazher Y.
- Elahe Mullick.
- Rupam Bose.
- Anirban Dasgupta.
- Pronoma Mukherjee.
- Ketan Talati.
- Dibakar Roy.
- Prasad Dalvi.
- Subramanya Muralldhara.
- Prashant Pawar.
- Roshan Lal.
- Tanisha Sapru.
- Chidmbar Javoor.
- Prateek Agarwal.
- Bhaskar Nandi.
- Deviprasad Rao.
- Ratnadeep Khan.
- Dr. Veena Sagar.
- Art Work by Piyali Chakrabarti.

We also take this opportunity to thank Mr Indranil Mukherjee from VIBGYOR – Photography & Videography (www.infovibgyor.com) - for his support and contribution. We also thank Dr Alison-Jane Hunter for editing this magazine

For future publication and collaboration, please contact:

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Photography Contest

ACSDRI, in association with VIBGYOR, conducted the #biodiversitymatters photography contest and the following photographs have been selected for THE BLUE PLANET magazine. We would like THANK ALL participants.

Our heartiest CONGRATULATION to all those whose photography has been SELECTED for THE BLUE PLANET magazine.

We would like to convey our thanks to Mr Ravindranath Srinath Amingad for his contribution to the magazine cover page photography.

VIBGYOR
www.infovibgyor.com

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Photography by Alankar Chandra (Masai Mara, Kenya)

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Photography by Nagaraj D N

Content

The Global Sustainable Development Goals: Are we progressing?

By Dr Kuntal Goswami
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In 2015, all member states of United Nations adopted the global Sustainable Development Goals (SDGs). In contrast with the Millennium Development Goals (MDGs), which were developing countries centric and had 60 indicators, SDGs are universal and addresses issues for both developed and developing countries. The SDGs are all encompassing with 17 goals and 169 associated targets addressing global objectives for economic development, along with social, and environmental sustainability.

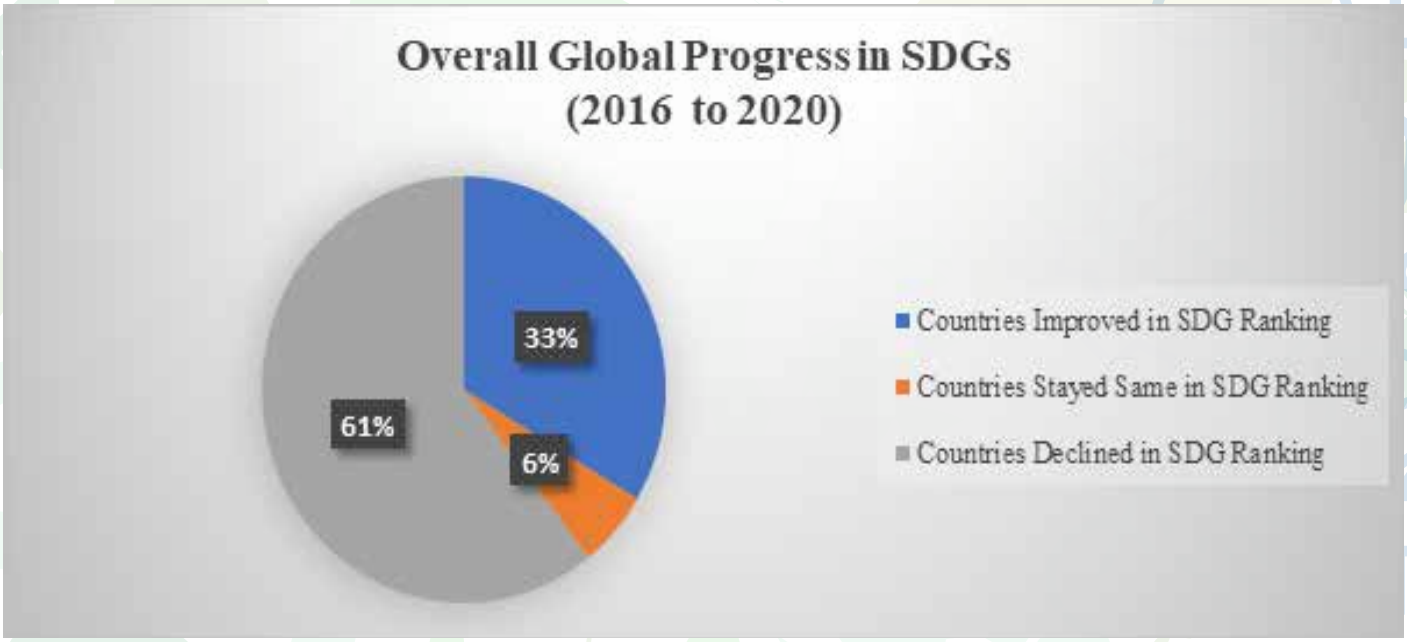
In this brief status report, 2016 and 2020 data sets were compared to understand the global progress towards the Sustainable Development Goals.

In comparison with the 2016 global SDG ranking index, only 33% of all countries were able to improve their respective SDG ranking in 2020; 6% of all countries were able to maintain their status quo; while 61% of all countries declined in their overall SDG ranking.

In the category of "Countries Improved in SDG ranking', Europe leads the list with 18 countries, followed by the Asia & Oceania region with 13 countries, and in the North & South American region, 10 countries were able to improve their overall ranking. Lastly from the African region only 5 countries featured in this category. In the category of "Countries declined in SDG ranking" most of them are from the African region, followed by the Asia & Oceania region, European region and lastly from the North & South America region.

In the overall SDG ranking, Sweden and Denmark are in the top-ranking countries in both 2016 and 2020.

Figure-1



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The protection of biodiversity, particularly in relation to Goal-14: Life Below Water, sustainable consumption and production, sustainable agriculture, and obesity are the areas of most concern for the high-income countries. Over the years, income equalities, such as the gender pay gap, are also becoming growing challenges among most high-income countries; while for low-income countries ending poverty, access to basic services and infrastructure are the most challenging agendas. However, low-income countries made considerable progress in the area of ending extreme poverty and in providing access to basic services and infrastructure, particularly under SDG-3: Good Health and Well-Being and SDG-8: Decent Work and Economic Growth. At the same time, low-income countries tend to have lower SDG Index scores because of the nature of the SDGs they are addressing such as extreme poverty and providing access to basic services and infrastructure.

Among the countries, the Côte d'Ivoire, Burkina Faso, and Cambodia have progressed most in terms of the SDG Index score, while Venezuela, Zimbabwe, and the Republic of the Congo have declined the most in the SDG index score over the time period.

Other than Sweden and Denmark, very few countries have been able to maintain their SDG ranking between 2016 and 2020. Some of the other countries who were able to maintain their ranking include Austria, Ireland, Malta, Albania, Morocco, and few others.

Overall assessment in the Sustainable Development Report 2020 shows Low-income countries are on track or performing moderately well in only two SDGs: SDG-13 Climate Change Action and SDG-8 Decent Work and Economic Growth.

Lower-middle-income countries are on track or performing moderately in eight SDGs: SDG-13 Climate Change Action; SDG-1: No Poverty; SDG-2: Zero Hunger; SDG-3: Good Health and Well-Being; SDG-6: Clean Water and Sanitation; SDG-7: Affordable and Clean Energy; SDG-9: Industry, Innovation, and Infrastructure.

Upper-middle-income countries are either on track or performing moderately well in most of the areas except SDG-14: Life Below Water; SDG-15: Life on Land; and SDG-17 Partnership for the Goals.

High-income countries mostly performed positively in most of the SDGs except in two areas where performance are stagnating: SDG-13 Climate Change Action; and SDG-14: Life Below Water.

Region-wise analysis of data showed SDG-10: Reduced Inequalities; and SDG-11 Sustainable Cities and Communities are the two most concerning agendas, and these two areas are categorised as the "Major challenges remain" or "Significant challenges remain" or "Challenges remain" agenda.

Table-1a
2020 SDG trends of countries by Income Groups

SDGs	NO POVERTY	ZERO HUNGER	GOOD HEALTH AND WELL-BEING	QUALITY EDUCATION	GENDER EQUALITY	CLEAN WATER AND SANITATION	AFFORDABLE AND CLEAN ENERGY	DECENT WORK AND ECONOMIC GROWTH	INDUSTRY, INNOVATION AND INFRASTRUCTURE
Income Group	SDG-1	SDG-2	SDG-3	SDG-4	SDG-5	SDG-6	SDG-7	SDG-8	SDG-9
Low-Income Countries	Stagnant	Stagnant	Stagnant	NA	Stagnant	Stagnant	Stagnant	Moderately increasing	Stagnant
Lower-middle-Income Countries	Moderately increasing	Moderately increasing	Moderately increasing	Stagnant	Stagnant	Moderately increasing	Moderately increasing	Moderately increasing	Moderately increasing
Upper-middle-income Countries	On Track	Moderately increasing	Moderately increasing	Moderately increasing	Moderately increasing	On Track	Moderately increasing	Moderately increasing	Moderately increasing
High-income Countries	On Track	Moderately increasing	On Track	On Track	Moderately increasing	Moderately increasing	Moderately increasing	On Track	On Track

Table-1b
2020 SDG trends of countries by Income Groups

SDGs	REDUCED INEQUALITIES	SUSTAINABLE CITIES AND COMMUNITIES	RESPONSIBLE CONSUMPTION AND PRODUCTION	CLIMATE ACTION	LIFE BELOW WATER	LIFE ON LAND	PEACE, JUSTICE AND STRONG INSTITUTION	PARTNERSHIPS FOR THE GOALS
Income Group	SDG-10	SDG-11	SDG-12	SDG-13	SDG-14	SDG-15	SDG-16	SDG-17
Low-Income Countries	NA	Stagnant	NA	On Track	Declined	Stagnant	Stagnant	Stagnant
Lower-middle-Income Countries	NA	Stagnant	NA	On Track	Stagnant	Stagnant	Stagnant	Stagnant
Upper-middle-income Countries	NA	Moderately increasing	NA	Moderately increasing	Stagnant	Declined	Moderately increasing	Declined
High-income Countries	NA	Moderately increasing	NA	Stagnant	Stagnant	Moderately increasing	Moderately increasing	Moderately increasing

In regard to government strategies and policy actions for climate mitigation, the Sustainable Development Report (2020) highlights that only six countries (Bhutan, Costa Rica, Ethiopia, India, Kenya, and the Philippines) have made sufficient commitment and effort to hold global warming well below 2°C. Unfortunately, economically stronger, or bigger countries such as the United States, the Russian Federation, Saudi Arabia, Turkey, Ukraine, and Vietnam are categorised as "critically insufficient" for their low level of commitment to mitigating climate change.

Region-wise SDG Ranking

Europe

In general, European countries are the best performers in the SDG rankings, compared with the rest of the world. In 2020, 46% of all European countries were able to improve in their respective SDG ranking, compared with the 2016 SDG ranking index. In 2020, Sweden, Denmark, Finland, Germany, and Norway are the five top SDG ranking countries in the region as well as in the rest of the world.

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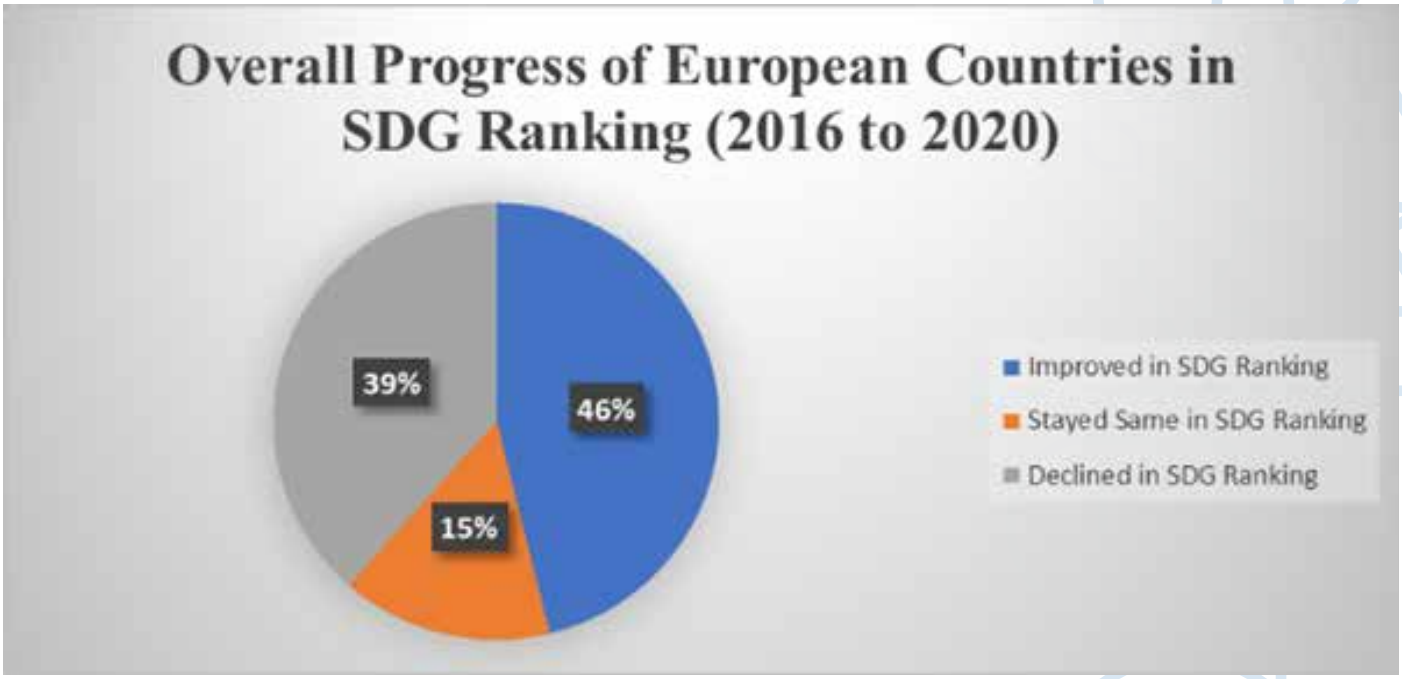
Table-2
Comparative SDG Ranking of European Countries

European Countries			
Countries	**2016- SDG Ranking**	**2020 - SDG Ranking**	**Overall Status**
Sweden	1	1	Stayed Same
Denmark	2	2	Stayed Same
Norway	3	6	Declined
Finland	4	3	Improved
Switzerland	5	15	Declined
Germany	6	5	Improved
Austria	7	7	Stayed Same
Netherlands	8	9	Declined
Iceland	9	26	Declined
United Kingdom	10	13	Declined
France	11	4	Improved
Belgium	12	11	Improved
Ireland	14	14	Stayed Same
Czech Republic	15	8	Improved
Luxembourg	16	44	Declined
Slovenia	17	12	Improved
Estonia	21	10	Improved
Belarus	23	18	Improved
Hungary	24	29	Declined
Slovak Republic	26	27	Declined
Latvia	28	24	Improved
Spain	30	22	Improved
Lithuania	31	36	Declined
Malta	32	32	Stayed Same
Bulgaria	33	39	Declined
Portugal	34	25	Improved
Italy	35	30	Improved
Croatia	36	19	Improved
Greece	37	43	Declined
Poland	38	25	Improved
Serbia	39	33	Improved
Romania	41	38	Improved
Moldova	44	42	Improved
Ukraine	46	47	Declined
Russian Federation	47	57	Declined
Macedonia, FYR	58	62	Declined
Montenegro	60	72	Declined
Albania	68	68	Stayed Same
Bosnia and Herzegovina	73	50	Improved

Figure-2



Although Europe as a region has performed better than the rest of the world, there remain are wide disparities in equity across European countries and across population groups.

The Leave No One Behind (LNOB) Index, which measures inequalities within countries, showed Eastern and Central Europe face significant challenges in terms of material deprivation, access to care, quality education, greater poverty, and lack of infrastructure including broadband internet connection.

Persistent high internal inequalities in many European countries are also impacting their overall SDG rankings. Overall, assessment shows goals related to responsible consumption and production, action against climate change, and biodiversity loss are most concerning and the trajectories in these indicators show the actions being undertaken to achieve these goals by 2030 are largely insufficient.

North & South America

Among North & South American countries, Canada, Chile, United States, Costa Rica and Uruguay are the overall top five SDG high ranking countries. At the same time, Venezuela, Argentina and Brazil are the only three countries in the region that have shown no progress in comprehensive attainment of the 17 SDGs since 2016. Venezuela is the only country which is losing its SDG index score because of its declining performance on SDG-1 No poverty, SDG-2 Zero hunger, and SDG-3 Good health and well-being.

On the other side, Argentina and Brazil have shown no progress in the last five years due to declining trends on SDG-8:Decent work and economic growth, and SDG 16 Peace, justice and strong institutions respectively.

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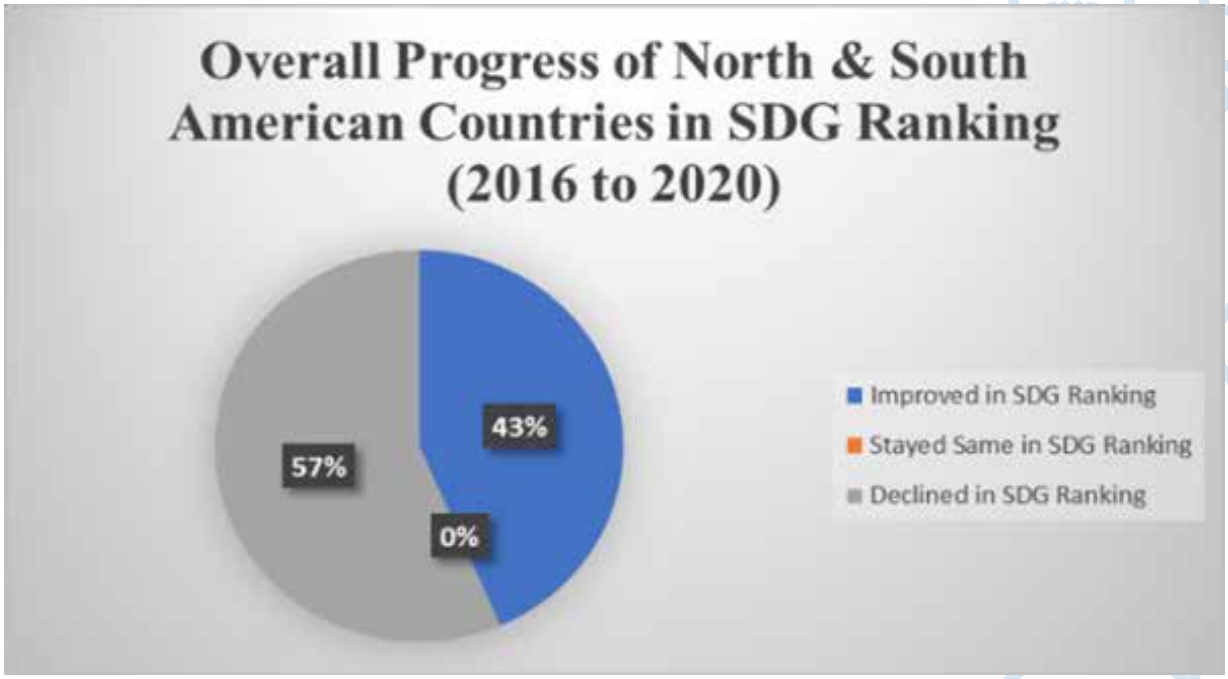
Table-3
Comparative SDG Rankings of North & South American Countries

North & South America			
Countries	2016- SDG Ranking	2020 - SDG Ranking	Overall Status
Canada	13	21	Declined
United States	25	31	Declined
Uruguay	40	45	Declined
Chile	42	28	Improved
Argentina	43	51	Declined
Brazil	52	53	Declined
Costa Rica	53	35	Improved
Mexico	56	69	Declined
Venezuela, RB	62	118	Declined
Panama	70	81	Declined
Ecuador	71	46	Improved
Paraguay	75	90	Declined
Jamaica	77	84	Declined
Trinidad and Tobago	78	98	Declined
Peru	81	61	Improved
Suriname	87	86	Improved
Bolivia	89	79	Improved
Nicaragua	90	85	Improved
Colombia	91	67	Improved
Dominican Republic	92	73	Improved
El Salvador	94	77	Improved
Guyana	101	124	Declined
Honduras	102	105	Declined
Guatemala	106	120	Declined
Haiti	144	154	Declined

Among all the North & South American countries, only 43% of countries in the region have been able to improve in their SDG ranking in 2020, compared with their 2016 SDG ranking.

In the South American region, the lack of innovation due to relatively low public expenditure on R & D, high income inequalities, insecurity, high homicide rate, and corruption are the biggest challenges.

Figure-3



Africa

Among African countries, only 12% of all countries have been able to improve their SDG ranking in 2020, compared with their respective 2016 position.
In the African region, Tunisia, Morocco, Egypt, Cabo Verde and Ghana are the top five better performing countries in the SDG index score. In general, the North African countries are the better-performing countries, while the Central African countries are lagging the furthest behind in the region.

SDG-3 Good health and wellbeing, SDG-9 Infrastructure, and SDG-16 Peace, justice and strong institutions are the most critical areas for the continent. However, the continent is performing relatively better in SDG-13 Climate action, and SDG -12 Responsible consumption and production. The most important fact from the African continent is that 94% of the countries have eighter shown the significant requisite commitment to set-up institutional arrangements for successful implementation of the SDGs or aligned their national development plans with the SDGs.

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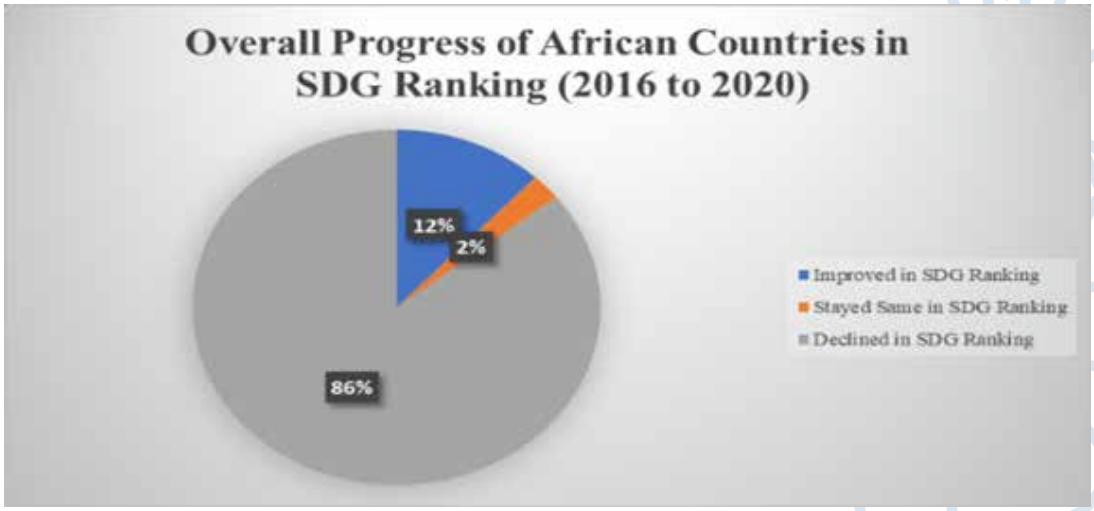
Table-4
Comparative SDG Ranking of African Countries

Africa			
Countries	2016- SDG Ranking	2020 SDG Ranking	Overall Status
Tunisia	51	63	Declined
Morocco	64	64	Stayed Same
Egypt, Arab Rep.	66	83	Declined
Mauritius	69	108	Declined
Botswana	80	121	Declined
Algeria	83	143	Declined
Gabon	93	111	Declined
Cabo Verde	96	92	Improved
South Africa	99	110	Declined
Ghana	104	100	Improved
Namibia	108	119	Declined
Zimbabwe	109	125	Declined
Congo, Rep.	111	135	Declined
Cameroon	112	133	Declined
Lesotho	113	141	Declined
Senegal	114	127	Declined
Swaziland	116	NA	NA
Kenya	120	123	Declined
Angola	121	149	Declined
Rwanda	122	132	Declined
Uganda	123	142	Declined
Cote d'Ivoire	124	128	Declined
Ethiopia	125	136	Declined
Tanzania	126	131	Declined
Sudan	127	159	Declined
Burundi	128	143	Declined
Togo	129	147	Declined
Benin	130	145	Declined
Malawi	131	152	Declined
Mauritania	132	130	Improved
Mozambique	133	140	Declined
Zambia	134	148	Declined
Mali	135	156	Declined
Gambia, The	136	129	Improved
Sierra Leone	138	153	Declined
Madagascar	140	161	Declined
Nigeria	141	160	Declined
Guinea	142	150	Declined
Burkina Faso	143	137	Improved
Chad	145	164	Declined
Niger	146	157	Declined
Congo, Dem. Rep.	147	158	Declined
Liberia	148	162	Declined
Central African Republic	149	166	Declined

Figure-4



Asia & Oceania

In the Asia & Oceania region New Zealand, Japan, South Korea, Cyprus, and Australia are the top five better ranking countries in 2020. In this region, 39% of all countries have been able to improve their respective SDG ranking in 2020 compared with their 2016 overall ranking.

The region has made reasonable progress on SDG targets relating to economic growth, SDG-4:Quality Education, along with food security, women's role in decision making, access to basic sanitation services, reduction in maternal mortality, child mortality, R&D for health. Some elements of progress also made in SDG-7:Affordable and clean energy.

Over the years the region has made considerable progress in SDG-1:No Poverty, SDG-2:Zero hunger, SDG-3:Good health and well-being, SDG-5:Gender equality, SDG-6: Clean water and sanitation, SDG-8:Decent work and economic growth, SDG-15: Life on land, SDG-16:Peace, justice and strong institutions, and SDG-17:Partnership for the goals.

At the same time, the region faces many others challenges and reverse trends in targets such as their share of renewable energy, climate change policies, loss of biodiversity, sustainable / inclusive industrialisation, human trafficking, and non-discriminatory laws. Within the region there have been varying degrees of progress. For example: North and Central Asia have progressed in reducing inequalities (SDG-10); whereas South-East Asia has regressed in SDG-10. South South West Asia has made the most progress in SDG-3:Good health and Well-being. South East Asia progressed most in SDG-4: Quality Education, and SDG-9 Industry, innovation and infrastructure. East and North East Asia have improved in SDG-2:Zero hunger, SDG-4:Quality Education, and SDG-6:Clean water and sanitation.

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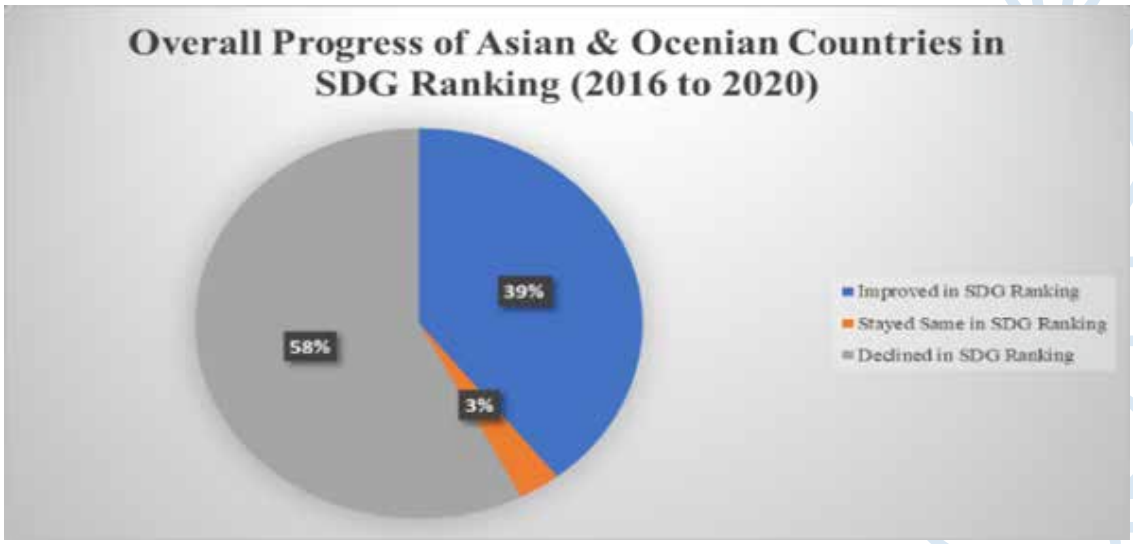
Table-5
Comparative SDG Ranking of Asian Countries

Asia & Oceania			
Countries	2016- SDG Ranking	2020 SDG Ranking	Overall Status
Japan	18	17	Improved
Singapore	19	93	Declined
Australia	20	37	Declined
New Zealand	22	16	Improved
Korea, Rep.	27	20	Improved
Israel	29	40	Declined
Cyprus	45	34	Improved
Turkey	48	70	Declined
Qatar	49	103	Declined
Armenia	50	75	Declined
Kazakhstan	54	65	Declined
Tajikistan	72	78	Declined
Oman	74	76	Declined
China	76	48	Improved
Iran, Islamic Rep.	79	59	Improved
Bhutan	82	80	Improved
Mongolia	84	107	Declined
Saudi Arabia	85	97	Declined
Lebanon	86	95	Declined
Vietnam	88	49	Improved
Philippines	95	99	Declined
Sri Lanka	97	94	Improved
Indonesia	98	101	Declined
Kuwait	100	112	Declined
Nepal	103	96	Improved
Iraq	105	113	Declined
Lao PDR	107	116	Declined
India	110	117	Declined
Pakistan	115	134	Declined
Myanmar	117	104	Improved
Bangladesh	118	109	Improved
Cambodia	119	106	Improved
Yemen, Rep.	137	151	Declined
Afghanistan	139	139	Stayed Same
Papua New Guinea	NA	155	NA

Figure-5



SAARC Region

Within the Asia & Oceania region, South Asia is one of the most populated regions. It is home for about 22% of the world's population (which is a population of about 1.76 billion, as of 2016's data).

The region has one of the largest concentrations of the under-privileged population, with acute caste system issues, a high number of dowry deaths and honour killing issues, farmers' suicides.

Water and sanitation problems, environmental degradation and server pressures for wild-life and biodiversity. Within the SAARC region, Bhutan, Maldives, Sri Lanka, Nepal and Bangladesh are the better performing countries as well as improving their respective ranking.

Table-6 Comparative SDG Ranking of SAARC Countries

South Asia (SAARC) Countries	2016 - SDG Ranking	2020 - SDG Ranking	Overall Progress
Bhutan	82	80	Improved
Maldives	NA	91	Improved
Sri Lanka	97	94	Improved
Nepal	103	96	Improved
Bangladesh	118	109	Improved
India	110	117	Declined
Pakistan	115	134	Declined
Afghanistan	139	139	Stayed Same

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Australia

Australia is among the high-income OECD countries. Compares with its 2016 SDG ranking Australia has dropped position from 20th overall ranking to 37th position. According to the Sustainable Development Report 2020 Australia is in the "On Track" or "SDG achieved" category in only in SDG-3 (Good Health and Well-being). In other SDGs, such as SDG-5: Gender Equality and SDG-8: Decent work and Economic growth Australia is in the "On Track" category, however, the agendas are categorised as "Significant challenges remain".

In the following SDGs, such as: SDG-10: Reduce Inequalities, SDG-11: Sustainable Cities and Communities, SDG-13: Climate Action, SDG-14:Life Below Water, SDG-15: Life on Land, and SDG-17: Partnerships for the goal, the country's indicators are classified as "stagnant", with varying degrees of challenges ranging from significant to major. SDG-12: Responsible consumption and production remains one of the major challenging areas for Australia.

In the rest of the SDG indicators the country has achieved a moderate level of improvement with varying degrees of challenges.

Conclusion

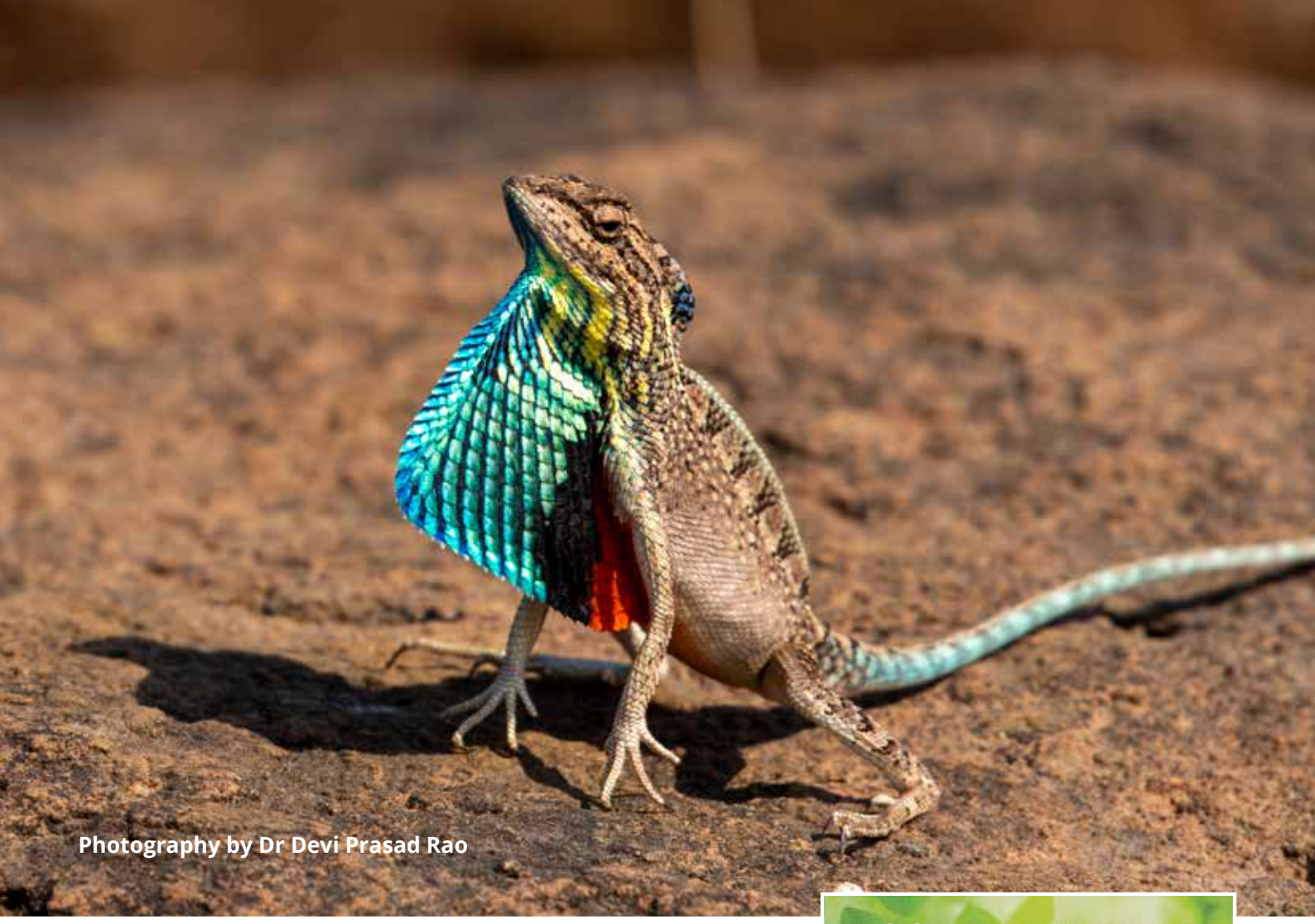
The overall region-wise analysis showed that from 2010 onwards countries in East and South Asia have progressed the most and a similar trend has been noticed since implementation of the SDGs in 2015. African countries made significant improvements during the MDG period (2000 – 2015) but since 2015 these countries have made some progress in SDGs. Furthermore, on average, countries; in Latin America, Caribbean, Eastern Europe, Central Asia, Middle East, and in North African regions, have increased their SDG index score by more than one point.

At the same time, income-wise analysis shows that high-income countries may have the highest SDG index score but progressed moderately in SDGs since 2015, while Low and Middle-income countries progressed faster in SDGs compared with high-income countries.

The SDG trend analysis highlights indicators relating to SDG-1:No Poverty, SDG-9:Industry, Innovation, and Infrastructure, and SDG-11:Sustainable Cities and Communities have made the most rapid progress since 2015. Globally, access to basic transport infrastructure, broadband connection, and global investment in R&D have shown the most promising trends. ***At present, about 95% of the world's population is covered by 3G or higher-quality mobile networks, which is one of the most significant universal achievements.***

In conclusion, I would like to highlight that even though progress in SDGs between 2016 to 2020 shows mixed success, the impact of Covid-19 may have wiped out gains in the areas of poverty reduction, employment, health and reducing income inequality. Only future data will demonstrate the extent of such losses.

Sources: 2016 & 2020 Online Database for Sustainable Development Report; Sustainable Development Report 2020



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Photography by Anuj Mukherjee

Social Impact Measurement: A practical approach to valuing what matters

By Min Seto,
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The heightening climate crisis has finally brought the environmental sustainability issue on to the agenda after many decades. The current COVID-19 pandemic has further exacerbated social inequalities. These isues made many of us question what is important in our lives, and what type of society we want to live in.

Having arrived at this crisis point, one has to question, how did we end up in such a dire position? Surely it can only be the result of some extremely poor decision-making over a long period of time or a gross negligence? But perhaps we, as a society, may have been distracted by having our eyes fixed on the "wrong" prize? Instead of governing for the welfare of all citizens, countries have instead been focused on growing their GDP and failing to recognize the wellbeing of their people. As both these agendas was not necessarily following the same growth trajectory. In this relentless pursuit of wealth and economic growth, we have forgotten to place value on the things that actually matter to us, like the wellbeing of all people and the planet that sustains us.

The 'social value' concept is broadly acknowledged in the UN's Human Development Index (HDI) and in frameworks such as the Sustainable Development Goals (SDGs), as they try to track progress, beyond GDP. There is also momentum gathering for transitioning towards a 'Wellbeing Economy', with governments such as Scotland, New Zealand, Iceland, Wales and Finland leading this change.

So how do we embed the concept of 'social value' into our decision-making process so that we can priorities a better quality of life for all? I believe part of the answer lies in social impact measurement.

What exactly is social impact measurement?

While there is no standard definition of social impact measurement, at the Australian Social Value Bank (ASVB) we have adopted the definition as coined by Dr Daniel Fujiwara. He is a global leader in social value analysis, wellbeing research, and in econometrics. He is the brain behind the technical aspects of our model.

As Dr Daniel explains, "social impact measurement is concerned with evaluating whether an intervention or action is in society's best interests". In this context the 'social' refers to the aggregation of the individuals that make up society, rather than the type of impact. This is an incredibly important distinction because if we were to interpret 'social' as meaning the type of impact (eg, on health or crime), then social impact measurement would be concerned only with those types of impacts, when in fact social impact measurement is concerned with all impacts on 'society', which then broadens the scope of concern to include what we might call 'social', 'economic' and 'environmental' impacts, because all of these have an effect on people in society.

Now there are numerous approaches to social impact

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measurement, and each have their place depending on the activity in question, the data and resources available to conduct the assessment and whether one needs to arrive at a policy decision rule. Social impact measurement evolved from evaluation methodologies used by governments to determine what activities should be undertaken. 'Formal' social impact measurement approaches provide policy decision rules, and this requires some form of comparison of benefits with costs.

The need for Cost Benefit Analysis

Cost Benefit Analysis (CBA) is internationally endorsed as the best-practice methodology for social impact measurement, and very rarely will you see any other method used when it comes to critical policy decisions by government. In fact, its origins can be traced back to the 1700s when it was applied to a public works project in France. Since this time there has been extensive academic research and debate which has resulted in the development of highly detailed CBA guidance.

As the name implies, CBA aims to measure the full impacts of any government decision or action by considering the benefits and costs of an intervention in monetary terms and then comparing them. All outcomes, both positive and negative, financial and non-financial should be included in the calculation. When you subtract the social costs from the social benefits, the resulting net benefits indicate how effective the intervention was. Any activity that creates net social benefits greater than zero is in society's interests and worthwhile pursuing.

So, if this methodology is so great at helping us to understand what activities are in society's best interests, then how did we end up in this time of climate crisis and deep social division? For me this comes down to two main reasons. Firstly, conducting a CBA is a costly process, therefore, only mandated for projects that reach a certain value threshold. Secondly, as with most poor decision-making processes, not all of the pertinent information gets considered.

Non-market valuation

In the Cost Benefit Analysis process, costs and benefits are valued at the prevailing market prices whenever prices or reasonable proxies are available. However, the challenge comes when trying to value what are referred to as 'non-market goods' (things which cannot be bought or sold). There are several accepted methodologies for non-market valuation listed within best-practice guidance including: Revealed Preference, Stated Preference and Benefit Transfers. Without going in to too much detail, each of the approaches has their pros and cons, and each has their place in CBA.

Valuation of non-market goods requires expertise, and the process is resource intensive, therefore it is a costly affair. For this reason, assessments often rely on Benefit Transfer approaches, however, citing valuations from previous studies may not align closely enough to warrant comparison. So, alternatively, the value of the non-market goods is left out of the calculation entirely, only being referenced in the qualitative assessment, but that can bias the decisions-making process.

So, how we can quantify social value? At the Australian Social Value Bank we've developed a tool that aims to overcome some of these issues. Our online Value Calculator performs a CBA in accordance with government guidelines targeting programs that create social outcomes. It is a resource-lite approach that makes a rapid calculation of net social benefits achievable for anyone, regardless of their level of expertise in CBA. The main innovation is that the Value Calculator is embedded within a bank of 'social values', where our technical experts at Simetrica, have already valued a list of 63 'non-market' outcomes for you to use.

These social values have been derived using a methodology called 'Wellbeing Valuation' which can be listed under approved Stated Preference methods within government guidelines.

Wellbeing Valuation often starts with a pre-existing survey dataset that includes a measure of the Subjective Wellbeing (SWB) of participants, then applies econometric methods to estimate the SWB provided by a specific non-market good, and subsequently converts this into a

monetary value by combining it with an estimate of the effect of income on SWB.

One of the strengths of this valuation approach is that it omits many of the inherent biases attributed to other Stated Preference methodologies. The resulting values are conservative estimates, averaging all the positive and negative outcomes associated with the specific non-market good across the dataset, which is particularly useful in a policy context. Our Wellbeing Valuation methodology is consistent across the bank of social values. It also allows for comparison of the value of different social outcomes in a way not previously possible, and when using Wellbeing Valuation on an existing dataset it is also a cost-effective approach.

Using the Australian Social Value Bank

So, what does social impact measurement actually entail when using the Australian Social Value Bank? Well firstly, if you are a CBA expert you can simply plug in our social values to your calculation. But if you are just getting into social impact measurement for first time, the ASVB will make it achievable for you quickly, and will facilitate assessment of the benefits of different social programs and investments.

Simply select the relevant social outcome from our drop-down list (e.g., 'Homelessness to secure accommodation'), enter how many people achieved this outcome (e.g, the number of people you housed), and how much it cost to deliver the program, and the ASVB will calculate the net social benefits the program has to offer.

Whilst this is a simplified version of CBA, for lower value propositions, a proportionate approach is used to estimate net social benefits with a high level of rigour. Utilising Wellbeing Values and embedding approaches like the ASVB Value Calculator into your decision-making process will help to ensure better outcomes for society.

This has started to happen with countries like New Zealand, leading the way with their Wellbeing Budget in which they use converted ASVB Wellbeing Values, and Iceland who have also started incorporating social indicators into its budget planning.
There is still much to learn as we transition to a Wellbeing Economy but the impetus for change has never been stronger; now we just need to make sure we have our eyes squarely fixed on the right target!

Source: https://asvb.com.au/

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The Himalayas: Saving our saviour

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Until the turn of the last century, climate change was just an academic term, of interest to a few. 90s youngsters grew up watching it as an interesting backdrop for a Hollywood sci-fi movie, but never utterly understood the real issue or cause behind it. I never wildly imagined the possibility of a real time holocaust or a doomsday; unfold, in this very lifetime. But growing up, while education played its part, for me, it led to an awakening to the reality of our anthropocentric lives. I understood that it is not a remote possibility or fictional reality anymore; rather quite a factual one. It is indeed a time to build a Noah's ark.

The Himalayan range is a pride of our Indian subcontinent, standing tall and majestic for the zillions of years. It is truly a nature's heaven, with its unparalleled landscapes and a biological hotspot with diverse flora and fauna in the region. But it is facing the threat of its lifetime. It has been declared by experts as the most fragile ecosystem and hazard prone regions in the world. It is quite evident that, with carbon levels reaching the highest ever records, human populations pounding on extracting every bit of natural resources, profit driven economical (growth) with no vision for sustainable development and environmental conservation still not getting its deserved status among the stakeholders, it's a dead end ahead. Finite capacities, finite space, finite resources and finite time, at our hands, are the factors that make climate change a burning issue. Ongoing Pandemic has been a wakeup call by the nature.

Gone are the days to debate about reasons behind changing climatic patterns or whether it is happening or not happening. There is enough evidence to prove that it is indeed occurring at this very moment and it is happening at an alarming pace. It is therefore imperative to read on about some climatic facts in the Himalayas:

1. Temperature variation has been quite dramatic in the region. According to research, the average temperature rise has been recorded at around 1.3oC in the Hindukush region (which includes K2 and Mt Everest) during the time period 1950 to 2014, which is higher than the rise in the global average temperature worldwide. In simple terms, the Himalayan range is warming more quickly than the rest of the world, which can lead to catastrophic events developing sooner.
2. The retreating glaciers in both the eastern and western Himalayas and the expansion of glacier lakes, especially in the the Tibet, Nepal and Bhutan regions, are another reason to worry. These leave the region prone to risk of flash floods and frequent avalanches. The glaciers feed the top 10 most important river basins such as the Ganges, Indus, Yellow, Mekong, etc. Inhabitants are dependent upon these freshwater glacial rivers for domestic utilization, hydropower projects and irrigation purposes. It is thus easy to imagine the physical and economic consequences looming in the region and for the population residing in these terrains, due to the loss of glaciers.
3. Pre-monsoon/ monsoon precipitation has evidently shown a decreasing trend in the western Indian Himalayas and an increasing trend in the eastern /Indian Himalayas. However, winter precipitation has shown a downward trend between December and February, during the period 1975-2006. This weather pattern has wreaked havoc by through flooding as well as impending droughts / water shortages in the same regions. This can have catastrophic biophysical and economic impacts over time.
4. Deforestation and loss of core forest regions has been underreported by governmental departments and is not adequately documented. As per research in Springer, it is estimated that the Himalayas would be left with 10% of its forest cover and would witness about a quarter

of its biodiversity lost by 2100, if the current rate of devastation continues.

5. To top it all, rampant plastic pollution, water wastage, visionless and unsustainable development in the cities, lack of political will in conservation matters and the brunt of unethical tourism in the region have played their fair share in this snowballing process of devastation.

As the saying goes, every cloud has a silver lining, and to make it true some people rise above and beyond their comfort zones and make positive change happen. Here is a story of a fellow climate reality leader, who chose to work on the path less travelled.

Photography by Yetika Dolker

Extraordinary work by ordinary people: Little Green World

Ms Preeti Chauhan is, a social development entrepreneur by profession, civil engineer by qualification, an environmentalist by belief and a zero-waste practitioner by passion. Her vision makes her no less extraordinary. A Mumbai girl at heart, who dons various caps with a charming smile. Her journey from being a corporate employee to being a social entrepreneur in Ladakh, India, has been an amalgamation of adventure with self-reflection and awakening.

During a trek to Kedarkantha, in 2017, the piles of trash on the mountains changed her perspective of trekking and eventually brought out the concerned environmentalist in her. She would, later, in other trekking endeavours, engage in collecting waste along the treks. It gradually grew into her consciousness and she began travelling and volunteering with various organizations in the Himalayas, creating awareness about waste disposal, especially by the trekkers and tourists, as a major public health issue. In 2018, interning with a local organization, she soaked in the essence of doing extraordinary work by engaging in teaching about waste segregation with local communities and villagers. She began to get her hands dirty, and eventually in 2019, she resigned from her corporate job and shifted to Ladakh for good. As a Naropa Fellow, she had the experience of implementing a Wipro Earthian program, in collaboration with various schools in Ladakh. While voluntarily working with one councillor, she was part of a sensitization spree on the segregation of solid waste, with the villagers.

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Garbage and landfill at Ladakh Region, India. Photography by Akash Jain

For a short period, she also interned with the Rural Development Department of Ladakh and consulted on their various shortcomings. In 2020, she started her own social enterprise, Little Green World (LGW), which holds the vision of enabling each individual to become a conservationist and a zero-waste practitioner.

This organization is devoted to issues such as, unethical tourism, sustainable practices and reducing the waste piles on the mountains. According to a research paper in 2018, around 50,000 water bottles are dumped daily in Ladakh during the peak tourist season in summers. Locals with no means of technical knowledge and a lack of awareness, end up burning the waste or throwing it down the river to get rid of the piles.

LGW aspires to change this aspect of an adventure trip. It provides training, workshops and awareness campaigns among the villages, local bodies, forest departments and schools as an early education program. It has devised courses and training modules, for individuals and institutes, promoting zero waste practices, which have been approved by mountaineering institute and forest department of Uttarakhand, India. It has also received a mini grant from the Global Alliance of Incineration Alternatives (GAIA). LGW under this project will promote zero-waste and a circular economy culture amongst the tourism sector of Ladakh and geo-map the water refilling stations in Ladakh from a strategic perspective.

LGW advocates cutting down not just carbon footprints but also trash, water, and land footprints. It advocates for responsible tourism, sanitation and to reduce water wastage in the region. The need of the hour is to prioritize our needs over our wants, specifically in relation to plastic consumption. Mindful consumption of materials like gadgets, packaged foods, textiles, etc is an important step to reduce our virtual water footprint considering the amount of fresh water that is required for manufacturing and production. LGW conducts training on following the right practices while in the region, such as preferring local products and locally grown foods.

There are still many miles to be traversed and milestones to be achieved by LGW, but finding the right momentum every morning, with the same determination and commitment towards a cause, is a success story. Organizations like LGW are a ray of hope for our Himalayas. They are an epitome of humanity and provide a sense of hope that we still stand a chance of saving our planet, as long as there is someone who cares. There is an environmentalist in all of us, because after all nature does not belong to us, rather we belong to nature. We just need to unlearn and learn accordingly.

To reach out to Little Green World, check out:
https://www.littlegreenworld.co.in/

Picture courtesy : Little Green World


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Photography by Elahe Mullick

Photography by Rupam Bose

A Perspective on Responsible Investment

By Ryan Cook.
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The past 12 months have proven a watershed moment for responsible investment globally. While the Covid-19 pandemic was the overwhelming disruptive force at play across global markets (alongside the US presidential election) this disruption tested many underlying economic assumptions, while also allowing for reflection upon some 'business-as-usual' investment practices.

Within the investment sector the terminology environmental, social and governance (ESG) is often applied to investment practices which aim to incorporate such parameters alongside financial measures when making investment decisions. ESG factors encompass a wide range of themes; broadly aligned with the United Nations Principles for Responsible Investment (UN PRI). The UN PRI outlines ESG factors:-

- *Environmental factors are issues relating to the quality and functioning of the natural environment and natural systems.*
- *Social factors are issues relating to the rights, well-being and interests of people and communities.*
- *Governance factors are issues relating to the governance of companies and other investee entities.*

Detailed ESG summary available at:
https://www.unpri.org/sustainability-issues/environmental-social-and-governance-issues

https://www.unpri.org/reporting-and-assessment/reporting-framework-glossary/6937.article

The concepts of materiality and the related interdependency of ESG factors are also important considerations for investors, climate change being a prominent issue which encompasses all ESG factors. While reduced greenhouse gas emissions (GHG) may be captured under environmental factors; social factors such as the impact of coastal communities associated with sea-level rise, and governance factors such as net-zero organisational commitments, are important interdependency considerations for making an investment decision making process.

The approaches to responsible investment utilising ESG factors may vary. From negative and positive screening through to the impact of investing, the Responsible Investment Association Australasia has produced a spectrum aimed at capturing the range of approaches (Figure 1).

Methods such as negative screening is a process to exclude company's holdings that do not meet a basic pre-determined criterion for investment. A common example is screening of investment portfolios to exclude companies involved in the tobacco industry, specifically tobacco production.

Conversely a positive screening investment approach may seek to target investments in companies involved in 'green' technologies such as renewable energy infrastructure. From a responsible investment perspective, the approach taken by an investor could be viewed as somewhat agnostic. The important consideration is that ESG factors are embedded in the investment decision making process and are transparently disclosed for investor scrutiny.

By some estimates, as of February 2021, the market for global money invested in ESG assets had topped US$100 trillion, rising from US$6 trillion in 2006[2] . With green stimulus packages flagged to aid economic recovery post covid-19 some view ESG investing as the "growth opportunity of the century"[3]. Though a cautious approach must be taken in assessing such claims. However, a seismic shift towards ESG investing principles appear to be

[2] *https://www.investordaily.com.au/latest-news/48681-esg-market-tops-100-trillion*

[3] *https://www.pwc.lu/en/sustainable-finance/esg-report-the-growth-opportunity-of-the-century.html*

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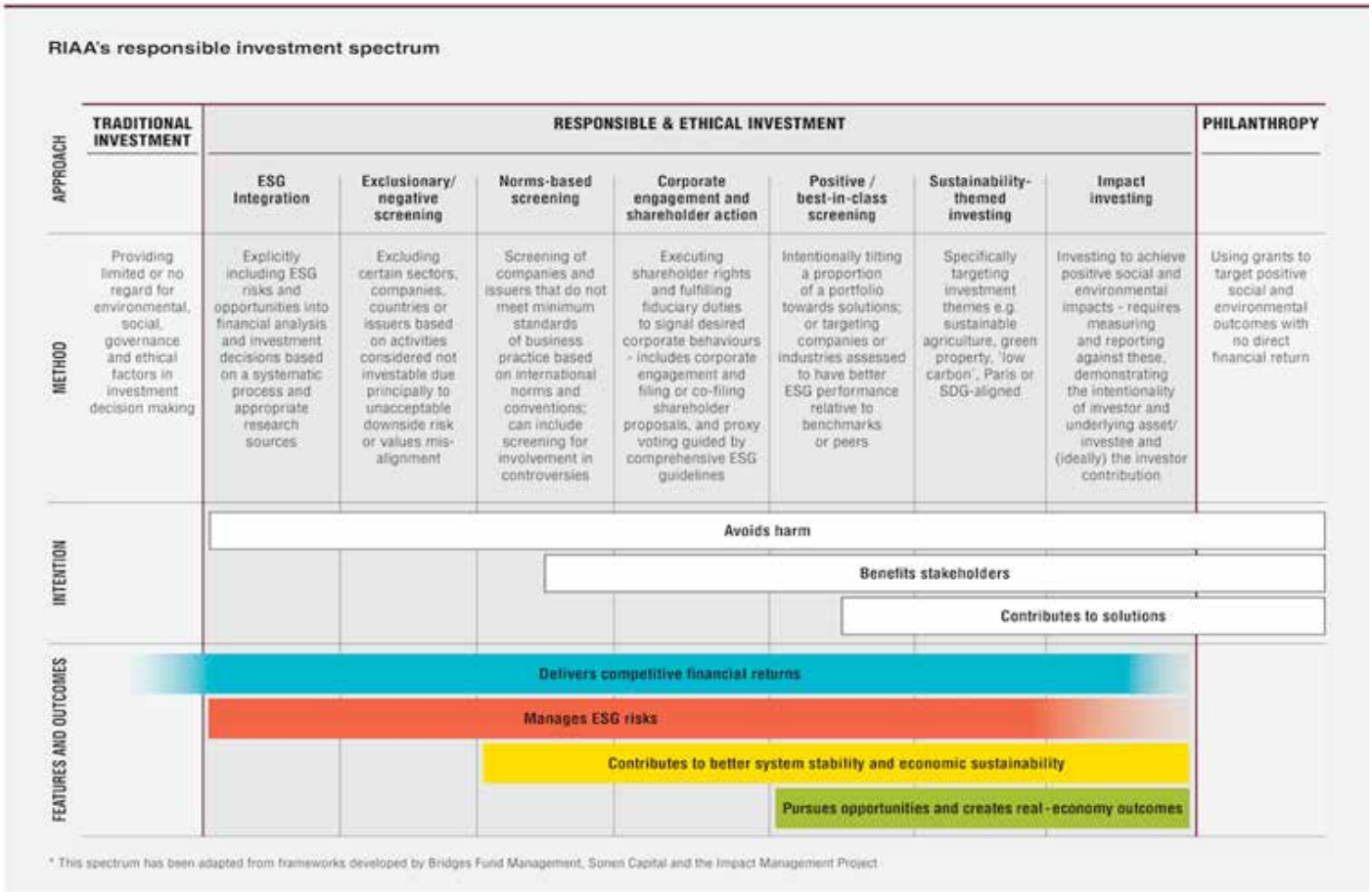
Figure-1: Responsible Investment Association Australasia
https://responsibleinvestment.org/what-is-ri/ri-explained/



gathering momentum.

Actor deliberations over the performance of 'ESG-themed' investments in comparison to with 'non-ESG themed' investments are becoming increasingly salient. However, the divergent modes for assessing investment performance, determining asset valuations and a range of other variables has resulted in a diaspora of opinions. For example, analysis from Morningstar highlighted ESG factored investment exposing investors to potentially reduced risk . By way of contrast the Financial Times may publish opinion pieces espousing the 'the fallacy of ESG investing.'

While contrasting opinions likely remain, a recently published meta-analysis of 1,141 peer reviewed papers by NYU Stern's Center for Sustainable Business in partnership with Rockefeller Asset Management found 'ESG drives better financial performance '. The research outlined six key takeaways:

1. *Improved financial performance due to ESG becomes more noticeable over longer time horizons.*
2. *ESG integration as an investment strategy performs better than negative screening approaches.*
3. *ESG investing provides downside protection, especially during a social or economic crisis.*
4. *Sustainability initiatives at corporations appear to drive better financial performance due to mediating factors such as improved risk management and more innovation.*
5. *Managing for a low-carbon future improves financial performance.*
6. *ESG disclosure without an accompanying strategy does not drive financial performance.*

Source: ESG and Financial Performance: Uncovering the Relationship by Aggregating Evidence from 1,000 Plus Studies Published between 2015 – 2020

Focussing upon evidence of risk from an ESG perspective a prominent recent sectoral example is the volatility of the global oil industry in 2020. Driven by a combination of significantly reduced global transport because of the Covid-19 pandemic

and increasing societal scrutiny on GHG emissions and net zero commitments, investors divested or reduced their exposure to oil industry holdings at record levels . This partly resulted in oil industry titan Exxon Mobil's removal from prominent financial indices such as the S&P Dow Jones in August 2020, a position the company had previously held for 92 years . Whilst the pandemic was at least partly responsible for this outcome the ESG climate perspective may have expedited this result.

Those who refrain from considering ESG factors in investment decisions may also risk jeopardising their fiduciary responsibilities. Fiduciary responsibility are the 'acceptance of responsibility: to act in the best interests of another person or entity .' Recent litigation by a member of an Australian superannuation fund ('McVeigh v Rest') serves as a prominent example. Whilst a settlement was reached in November 2020 the case resulted in a major investment sector actor Retail Employees Superannuation Pty Ltd (Rest) acknowledging climate change as a material, direct and current financial risk to the fund . Global industry-led initiatives such as the taskforce on climate related financial disclosures (TCFD) aim to provide investors with a framework to assess and mitigate climate-related financial risks.

Switching focus from downside risk to upside perspectives on responsible investment, the role of impact is increasingly entering the realm of investment considerations. While the concept of impact investing has existed for some time it was largely the niche domain of philanthropy and select specialised investment funds.

The Global Impact Investing Network (GIIN) defines impact investing as 'investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return .' Traditionally, impact investing has been associated with long-term patient capital invested in targeted initiatives, such as social housing. More recently a wide spectrum of investors are increasingly eager to verify and validate investment impact using a variety of metrics. An increasingly common approach has been to map investment impact in-line with the United Nations Sustainable Development Goals (SDGs). The ubiquity of the SDGs and the broader ecosystem of initiatives supporting such mapping, including the UNDP SDG Finance Sector Hub (https://sdgfinance.undp.org/about), aims to connect private investment capital with development initiatives effectively.

Despite such initiatives significant challenges remain in the flow of private investment capital to developing nations. Analysis from the Organisation for Economic Co-operation and Development (OECD) indicates private capital flows to development assistant committee (DAC) countries were erratic between 2000 and 2018 (Figure 2).

From a responsible investment perspective concerns also arise in relation to the transparency and labelling of investments purporting to generate positive impact or deliver ESG sustainability claims. A practice often referred to as 'greenwashing' (or 'rainbow washing' in SDGs) is increasingly coming under the purview of industry regulators. In the UK, the Financial Conduct Authority even flagged moves to protect investors from greenwashing in 2019 . Within Australia the Australian Securities and Investments Commissions (ASIC) indicated a focus on investment product issuers engaging in greenwashing as part of the regulator's 2020-2024 corporate plan.

At a societal level, the shift in wealth to millennials is proceeding apace. Some actors suggest Wall Street needs to pay close attention arguing investors under the age of 35 are 'twice as likely as others to sell a holding if they consider a company's behaviour to be environmentally or socially unsustainable '. Domestically, initiatives such as the Australian

[4] *https://www.morningstar.co.uk/uk/news/204024/how-esg-investing-can-reduce-risk.aspx*

[5] *https://www.ft.com/content/9e3e1d8b-bf9f-4d8c-baee-0b25c3113319*

[6] *https://www.stern.nyu.edu/experience-stern/about/departments-centers-initiatives/centers-of-research/center-sustainable-business/research/research-initiatives/esg-and-financial-performance*

[7] *https://yaleclimateconnections.org/2021/01/investors-flee-big-oil-as-portfolios-get-drilled/*

[8] *https://www.cnbc.com/2020/08/25/exxon-mobil-replaced-by-a-software-stock-after-92-years-in-the-dow-is-a-sign-of-the-times.html*

[9] *https://www.ftadviser.com/regulation/2019/10/16/fca-moves-to-protect-investors-from-greenwashing/*

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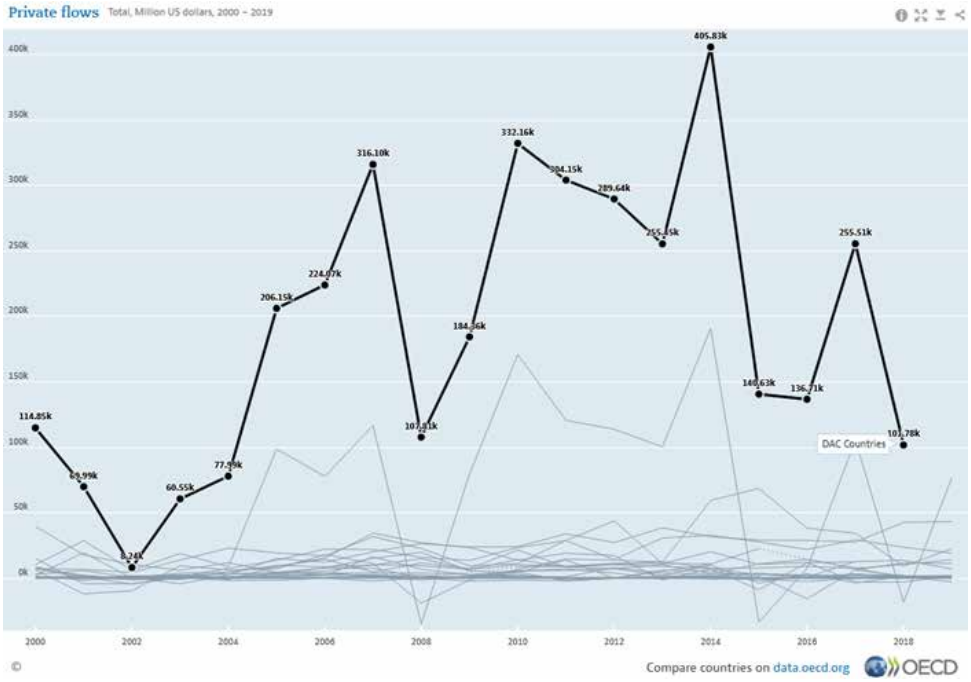
Figure 2: OECD Data – Private Flows



Sustainable Finance Initiative (ASFI) aim to establish a roadmap for realigning the finance sector to support improved social, environmental, and economic outcomes . This shift in societal norms may be partly representative of millennials inherent acceptance of existential global threats posed by climate change, biodiversity loss and unfettered consumption practices.

From an investee company perspective, integrated sustainability reporting outlining ESG factors such as labour practices, and environmental performance are also increasingly required to attract and retain investment capital. While the overall level of companies issuing such sustainability, reporting reached record levels in 2020 , the world's largest asset manager BlackRock issued statements indicating a desire to harmonise sustainability reporting globally , to enable effective investment comparisons.

Challenges may also be apparent in the trustworthiness of company self-reporting. In January 2021, the world's largest oil producer Saudi Aramco Oil Co was found to have excluded GHG emissions generated from its refineries and petrochemical plants, potentially understating the company carbon footprint by up to 50% . Despite such instances overall trust in sustainability reporting is increasing according to the Global Reporting Initiative (GRI), although significant geographical variances remain.

While undoubted challenges remain to align investment capital with more responsible investment practices, the market signals are overwhelmingly positive. Both from top-down (regulatory) and bottom-up (social licence) perspectives, what is apparent is that investors and the broader financial system are re-shaping to address this new paradigm: one that aims to view impact and success outside of purely financial returns.

The views represented in this article are my own and do not necessarily represent the views of the Responsible Investment Association Australasia, my employer.

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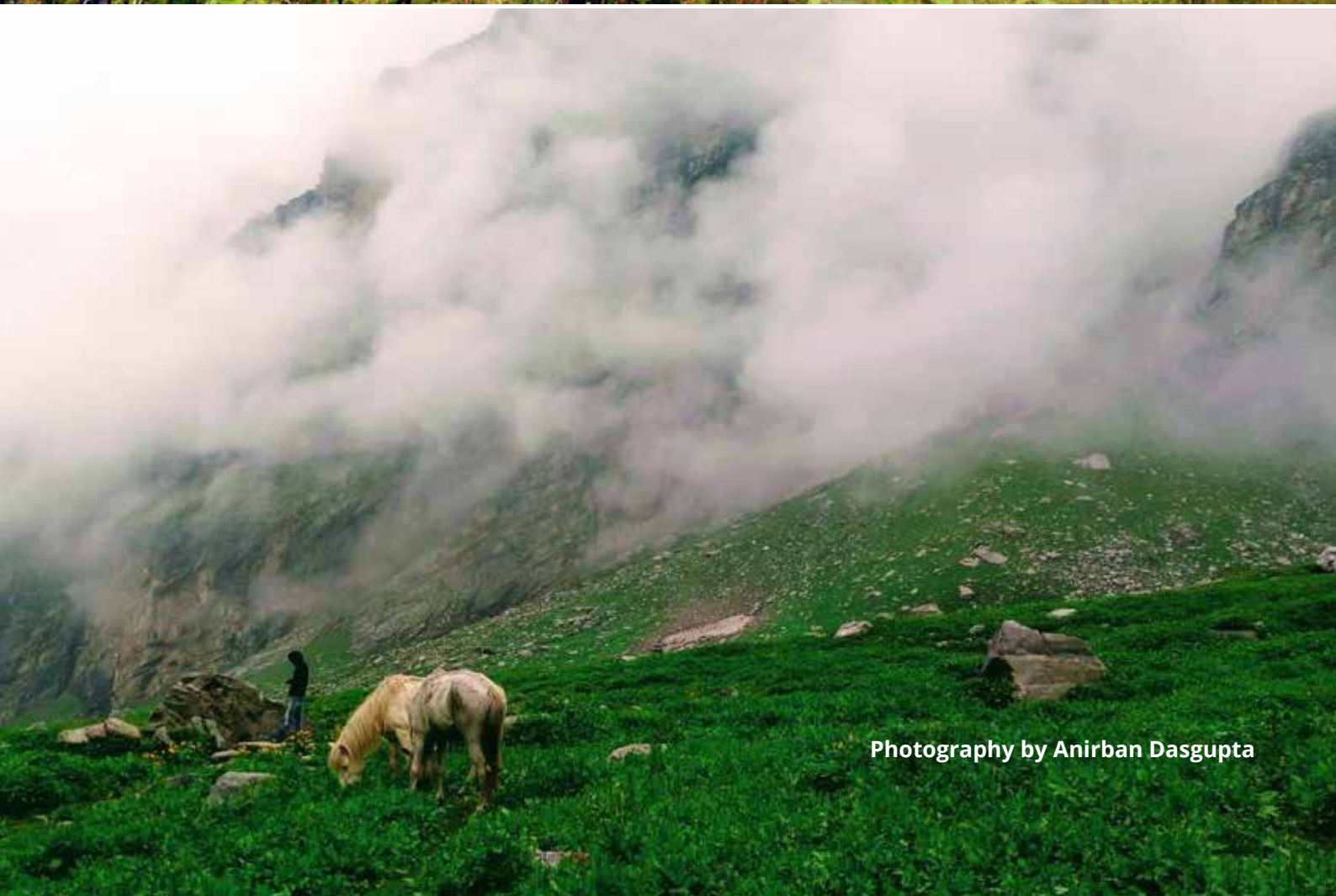

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Overview of Sustainable Pest Management

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Introduction:

Chemical pesticides are the dominant source of soil contamination. Evidence shows non-targeted species gets impacted more due to chemical pesticides than targeted species. Only about 1% of pesticide reaches the target pest and the rest of it induces contamination of the environment (Amoabeng 2014, Tyler and Miller, 2004). Much of the pesticide residuals also reaches the aquatic ecosystem through runoff (Tashkent 1998). Spraying of chemical pesticides also unintentionally contaminates neighbouring habitats and the atmosphere through drift and evaporation (PMEP 1993, Tashkent 1998, Gil and Sinfort 2005).

The bumblebee is one of the most important pollinating insects for our agriculture. However, these bees are now becoming victims of agricultural pesticides (Coke, 2012). Too much exposure to pesticides is also a health risks to farmers (Roy 2013, Wesseling et al 2001, Konradsen et al 2003, Coronado et al 2004). A study showed that although 15% of global pesticides are used in developing countries, nearly 75% of deaths happen to farmers due to pesticidal poisoning in these countries (Amoabeng et al 2014). Misuse of pesticides often causes health problems and contamination to the environment (Soares et al 2003, Mancini et al 2005, Remor et al 2009).

It is reported that approximately 3 million agro sector workers are experiencing pesticide related poisoning per year throughout the world, while nearly 20,000 deaths are directly associated with agrochemical use (Amoabeng 2014).

Natural control of pests

Natural control of pests can be maintained by various methods such as clean cultivation, ploughing, planting of pest resistant crop varieties, crop rotation, pruning, planting and harvesting times (Awasthi 2007). Natural controls over the pests can be also achieved by maintaining enemies of pests on fields, use of integrated pest management (IPM) practices, biotechnological techniques, and genetic engineering etc, by virtue of which sustainable agriculture and residue free food materials can be produced.

Natural enemies of pests

Bio control of pests was first used in China in the third century AD (Walter 2003). Biocontrol means use of biological agents in agriculture such as pathogens, parasites, and predators of pest species to mitigate problems with pests, so that it is the pest and not the ecosystem that is impacted (Mongillo John et al 2004; Awasthi 2007). Recently, farmers are also using seeds from resistant plants (Pest control and Preservation, Britannica 2007). According to De Bach P. et al approximately 99% of crop pests are controlled by different natural enemies (De Bach P. 1991). Multiplication of parasites that kill fruit crop pests can be achieved through pest control and management. For example: colonies of tailor ants (Oecophylla smaragdina) can be introduced in citrus trees, so that these ants prey on insect pests and this technique is already practiced in China (Walter 2003).

Integrated pest management (IPM)

IPM is a process of eradication of all relevant pests at the predetermined area (Walter 2003).
At the time of mating one can use pesticide to kill the insects, thereby maximum damage to the pests and minimizing the effect on the other species (Taylor et al 1997).

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Artificial sex pheromones (the substances which are produced by organisms to attract mates) can be sprayed to trap the insects. Once captured, the pests can be killed with limited use of pesticides or sterilized with the help of Gamma rays (Walter 2003, Mongillo John et al 2004, Taylor et al 1997).

Conclusion

There are several benefits of adopting sustainable pest management practices. First and foremost, it keeps agricultural fields free from chemical pesticides. In addition, the practice helps to maintain soil quality, soil micro-flora and micro-fauna, zero contamination of water resources due to agricultural runoff, pesticide residue-free production and enhancing the quality of agricultural produce, and reduce pesticide poisoning incident. In 2008 Nidani Agricultural Development Officers of Haryana, India conducted an agricultural project named 'Know the insect before killing them'. The evidence from that project showed that due to application of alternative technique to chemical pesticide, the agricultural production increased by 10% and profit margin increased by 25% compared to the farmers those who all used chemical pesticide. Hence, adoption of sustainable pest management practice is not only an environment-friendly way forward, it can prove to be economical too

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International Day of Happiness: GDP vs Happiness

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During the sixty-sixth session of the UN General Assembly, the then UN Secretary-General Ban Ki-Moon said – 'We need a new economic paradigm that recognizes the parity between the three pillars of sustainable development. Social, economic, and environmental well-being are indivisible. Together they define gross global happiness'.

The terms 'happiness or wellbeing' can be defined as the state of being (happy, healthy, comfortable and many more aspects of the human being) and the state of people's lives (how they feel, where they stay, what they do, the natural environment they live and many more).

In an era of dominance of market forces and enormous capital flows, the focus on happiness and well-being in public policy, can be viewed as a transformational initiative. The last two decades of the 21st century have witnessed the outcome of political and intellectual battles in the form of the voluminous literature on the different aspects of happiness and well-being through all kinds of academic and experiential research.

The common research problems for most of the research so far lie in addressing whether happiness can be equated with income (Gross Domestic Product - GDP) or not? Can income be used as an indicator for measuring happiness or wellbeing? Is it necessarily true that in richer economies the level of happiness is also high? Through such questions, an alternative approach to GDP to measure progress and development, is being studied and developed so that the next generations can view societies from newer perspectives and parameters.

Contradiction: GDP as an indicator of prosperity vs happiness index

The size of the Indian economy is approximately USD 10 trillion (using the Purchasing Power Parity – (PPP) method), and about $2.92 trillion (using the Nominal method), and is, therefore, ranked as the third and fifth largest economy respectively in the world. Despite having this chest-thumbing statistical data, the condition of the 'state of being and state of lives'- reflected through various indicators is as follows:

- As per the latest available data; India's per capita income at the current dollar is around $2000 against the world average of $10,722. It stands in 144th position out of 153 countries in the Happiness index;
- 62nd out of 74 emerging economies in the inclusive development index;
- 116th out of 174 countries in the human capital index;
- 131st out of 189 countries in the human development index:
- 48th in the list of top 50 innovating counties in the global innovation index;
- 129th out of 158 countries in the inequality index;
- 139th out of 163 in the Global Peace Index; 142nd out of 180 in the World Press Freedom Index;
- 80th out of 189 in the Corruption Perception Index;
- 94th out of 107 in the Global Hunger Index;
- 111th out of 162 the Human Freedom Index;
- 168th out of 180 in the Environmental Performance Index;
- 145th out of 195 in the Healthcare Access and Quality Index;
- 112th out of 153 in WEF's Global Gender Gap Report, and

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» 149th out of 153 in providing economic participation and opportunity to women.

The present doctor-patient ratio in India is around 1:10000 as compared with the WHO prescribed limit of 1:1000 and has 7 beds per 10,000 people while the global median is 27 per 10,000 people.

A similarly pathetic position exists in the case of the education sector and income disparity: 75 percent of grade three students and 50 percent of grade five students could not solve a two-digit simple subtraction, which is unexpectedly lower than most of the African countries (WDR, 2018), and the share of top one percent income earners has now reached the highest level (22%) in the national income data (Piketty, 2017). Between 1980-2014, the top 0.1 percent of earners captured a higher share of total growth than the bottom 50 percent (12 percent vs 11 percent). Oxfam (2018), too echoes with similar findings and reports that 73% of the total wealth created in the year 2017; went to the top 1% affluent population; whereas the lowest half of the population a rise of just 1% in their wealth.

These lists of indicators definitely do not project a happier 'state of being and state of life' although India's ranking is high in term of size of GDP.

Can we equate people's happiness with their income? One possible answer lies in the nature and original intention of the world's most followed statistical indicator. GDP is an outcome of political and intellectual battles among Clark, Stone, Meade, Keynes, Kuznets and Gilbert and two global events; the Great Depression of 1930 and World War II (1939-1945). GDP was developed to measure economic progress during the depression and guided President Roosevelt's government into formulating policies.

It is a great invention that enables thinkers, politicians, and policymakers to answer certain key questions like-whether or not a country is the fastest growing economy? Has the Chinese economy overtaken the US economy? Will India surpass the Chinese economy in the coming years? Is Ghana a poor country or not? But it does not answer; whether we are progressing in any meaningful sense? What is the status of overall human life and happiness?

Answers to these questions are being addressed incorrectly through the prism of income. Economist Simon Kuznets, one of the earlier recipients of the Nobel prize in economics, once said: "the welfare of a nation can scarcely be inferred from a measure of national income", yet wartime politics overruled the notion of welfare.

How did it happen that thinkers started looking at everything through the prism of GDP and it became the dominant gospel indicator of public policy? The power of the system of metrics is the most plausible answer. Stiglitz, Sen, and Fitoussi in their book, "Mis-Measuring Our Lives Why GDP Does Not Add Up" suggest that "the theories we construct, the hypotheses we test and the beliefs we have, are all shaped by our system of metrics", What if, the system of metrics has many flaws? What if, the system of metrics has been developed to serve some specific purpose and now is being used for somethings it was never developed to measure?

This is the exact case with GDP, it increases even when there are earthquakes, a fire, environmental disaster, human disaster, and higher accident, higher medical cost, higher repair cost caused by poor transport and infrastructure and goes down when a rickshaw puller takes the afternoon off to spend time with his family.

It counts the labor used and wood produced even when a tree is cut down but does not deduct the shade and beauty that we are lost. This is how Banerjee and Duflo (2019 Nobel laureate in Economics) described GDP in their latest book Good Economics for Hard Times (p.153). Other Nobel laureates in economics such as Kuznets, Hicks, Arrow, Nordhaus, Tobin, Kahneman, Deaton, Samuelson, Solow, Stiglitz, too raise their concern for considering GDP as an indicator for the care of human life and happiness.

The Global Perspective

Table 1. Size of Economy Vs Happiness

Size of Economy vs Happiness				Happiness vs Size of Economy		
Top Five Nations in Terms of Size of Economy		GDP Per capita (current US $) 2018	Happiness Ranking 2020	Top Five Nations in terms of Happiness Report 2020	Size of Economy	GDP Per capita (current US $) 2018
USA	$20.29 trillion	62,641	18	Finland	$273 Billion	49,648.1
China	$13.60 tri.	9770.80	94	Denmark	$352 Billion	60,726.5
Japan	$4.97 tri.	39,286.7	62	Switzerland	$434 Billion	81,807.2
Germany	$3.99 tri.	48,195.6	17	Iceland	$25 Billion	73,201.7
India	$2.92 tri.	2,000	144	Norway	$913 Billion	53,0241.1

Source- World Bank Group Data and Happiness Report, 2020.

Table 2.
Top Five Countries Based on Per Capita Nominal GDP and Happiness Index

Top 5 Countries (Per capita nominal GDP)	Top 5 countries (Happiness Index)
Luxemburg	Finland
Switzerland	Denmark
Norway	Switzerland
Ireland	Iceland
Qatar	Norway

Source: IMF 2019 World Economic Outlook database; Happiness Report, 2020.

Gross National Happiness (GNH) – An Alternative

In July 19, 2011, Bhutan (the pioneer of the Gross National Happiness Index) and 68 nations passed a resolution at the United Nations for 'Happiness: Towards a holistic approach to development'.

The UN General Assembly adopted this resolution which recognized happiness as a fundamental human goal and emphasised the need for more inclusive, equitable and balanced approach for economic development. This resolution mandated member nations to take steps towards putting effort into realising a vision for a development paradigm that integrates economic, social and environmental objectives.

Taking the lead from this resolution, the UN hosted its first high-level meeting on 2nd April 2012 on the theme of 'Happiness and Well-being – defining a new economic paradigm'. Mr. Jigme Y Thinley, the Prime Minister of Bhutan, was the main champion for this new agenda. This historic meeting was attended by select heads of state, ministers, Nobel Laureates, eminent economists, scholars, and spiritual and civil society leaders from both developing and developed nations. On June 28, 2012, all the 193 member states of the UN General Assembly unanimously adopted UN resolution 66/281 and decided to observe 20th March as the International Day of Happiness or International Happiness Day.

However, despite GDP's many flaws, GDP is neither an incorrect nor a redundant indicator. As a measure of economic progress, it is still a better option than the rest in the absence of a perfect option. Since the mid-twentieth century, many attempts have been being made across the world to gauge the happiness

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of people through different indicators, but none of the indicators developed have ever been able to replace GDP perfectly.

At the same time, we need to change our perspective from looking at everything through the prism of the Gross Domestic Product.

Bhutan is known for spearheading the movement to bring people's happiness into the world's development agenda. It has been advocating for the concept of GNH in different forums across the globe. The government of Bhutan established the Center for Bhutan Studies and Gross National Happiness (CBSGNH) in 1998 with the objective to conduct research on this topic. The exclusive mandate was assigned to develop a GNH Index that can be used as an indicator for measuring the overall progress of the nation, unlike GDP, which only captures the progress of economic activities.

In 2010, it started measuring happiness of its citizens based on the variables related to quality of life, well-being, and happiness. The Planning Commission in Bhutan stated - "The pursuit of GNH calls for a multi-dimensional approach to development that seeks to maintain harmony and balance between economic forces, environmental preservation, cultural and spiritual values and good governance." Thus, GNH is based on four broader pillars: good governance, sustainable development, preservation and promotion of culture, and environmental conservation. It uses two kinds of thresholds: Sufficiency thresholds and Happiness threshold, and measures all the 9 domains through 33 indicators (each having different weights), and 102 sub-indicators (questions). The intrinsic importance of these 9 domains are equal as a component of GNH. Therefore, weighted equally in GNH index, these 9 domains are:

- Living standards: material comforts, measured by income, financial security, and housing asset ownership.
- Health: both physical and mental health.
- Education: types of knowledge, values, and skills.
- Good governance: how people perceive government functions.
- Ecological diversity and resilience: people's perceptions of the environment.
- Time use: how much time is spent on work, non-work, sleep, and work life balance.
- Psychological well-being: quality of life, life satisfaction and spirituality.
- Cultural diversity and resilience: strength of cultural traditions.
- Community vitality: relationships and interactions with the community, social cohesion, and volunteerism.

The core purpose of the Index is to measure the nation's wellbeing via individuals' achievements in each indicator. For this specific purpose, the Alkire-Foster method of multidimensional measurement has been adapted. It identifies four groups of people – unhappy, narrowly happy, extensively happy, and deeply happy. The analysis explores two dimensions; one centred around the people already enjoying happiness and the other focusing on how policies can increase happiness and sufficiency among the unhappy and narrowly happy people.

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Guidance for Successful Research Publications

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Why do you want to be published?

There are a wide range of drivers for the need to write effectively in academic English: to get work published, to improve the quality of work and to ensure successful completion of a thesis by publication. In this article, we examine how to achieve quality outcomes that reflect and support the quality of your research.

How can you increase your chances of being published?

When you are deciding on your target publication, you are simultaneously selecting a set of criteria that you must fit in order to be successful, so choose your publication carefully. Are you seeking the widest audience? The greatest prestige? Or do you just want to get your words out into the world? Where you choose to publish will affect how you write and how likely you are to be published. Do not under-challenge yourself. Postgraduate students can and do get published in major journals: equally, you do not need to be published in a top-rank journal every time, so let yourself learn – and breathe.

Use your extant research skills.

Having used your research skills to help you choose your target journal for strong reasons, the first gatekeeper to be overcome is the editor, who sets the list of requirements for their journal, usually called Instructions to Contributors. All publishers set out their layout requirements on their websites and it is essential that a framework is made before starting so that your work will fit the criteria and pass this first test of eligibility. After all, how silly would you feel if your hard work were rejected on the grounds that you had used the wrong font, point size or some other trivial reason? Secondly, think about who will read your work and what will get them excited. Try and work on a succinct title that will be found easily by search engines and persuade readers to read your work. Read some articles of interest in the journal and think about how other writers have worked with the set frameworks before you start. You may also find very useful advice in the section marked Scope/Aims/Overview/Readership. If your work is very different from that normally published in the journal, maybe reconsider where you are most likely to be published.

Get online help.

A website that is likely to be extremely useful at this point is: *http://www.phrasebank.manchester.ac.uk* This is a powerful support to writers as it sets out every individual stage of each paragraph needed to create an academic journal article, including starter phrases to encourage you to set to work. If you worry about your grammar, then there are range of websites available, including: *http://www.mogtreeapp.com* . This website explains grammar issues in clear, simple, unpatronizing ways to build your knowledge and confidence.

What is the real cost of publication?

Many journals advise getting your work checked by a professional editor before submission. That is your choice, as such help is not usually free. My advice, though, is always to get an impartial observer (a professional friend, if you prefer) to read your work before submission: they don't know or love your work with your passion and so they will be able to help you with clarity, accuracy and engagement. Furthermore, you should think hard about open access issues: can you afford to pay to have your work published, or is that even an option at your stage in your career?

How do you overcome the terror of the blank page?

Having worked through these planning details, a good place to start writing is the Results section, focusing on a single story with a clear take-home

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message for your readers. Experience says these results are usually read first by reviewers as they contain the essence of your paper. The questions your reviewer will be asking are: what do the results say? What do they mean in context? Who needs to know this? Why? What contribution do these results make to the field? If you can obtain exciting, unique answers to these questions, you really do have a substantial paper to publish. Once the results are written up, you should then work through your introduction, methodology/materials and methods and discussion sections, before tailing with your conclusions and future work and topping off with your abstract. Why the abstract last? This is a quality question and simple to answer. You need to be sure that you really have written what you intended to cover and in a sensible order. Matching everything to the abstract means that you will have achieved structural cohesion, which will help your reader to relax and enjoy your work as it will fit rather than subvert the expected pattern of ideas.

How to edit your work.

In terms of the quality of ideas, now make sure that your work clarifies how it is original, relevant and will change at least a small amount of the world in which you work. Is it worth the number of words you have used, or would shortening your work be beneficial? Finally, are all the diagrams, tables and so forth helpful and necessary? Space is expensive. Be honest: can you justify your physical space in the next edition of your chosen journal? If not, then look where you can shorten – and sharpen – your writing in your next draft.

Drafting your work is crucial as you move towards submission. Think about tense, carefully. Are you describing an 'always true' condition? If so, use the present tense. If you are describing a sequence of events, do you go far enough back to need the pluperfect as well as perfect and present tenses? Is your Methods section robust? Is your work replicable? If the experiment cannot be repeated from your description, try the description again or you will lose academic credibility. Next, check if you need the passive voice to enhance your academic voice or if your chosen journal is happy with active verbs and first person to vivify ideas and descriptions. Finally, as you draft, concentrate on the original take-home messages you designed the article to share with a wide audience of your peers. Use a subheading or topic sentence for each take-home message and check that the take-home messages link with your lovely title (this will further enhance the cohesion of your writing).

Using checklists for success.

Finally, use this checklist to help you to remove common errors from your writing, building on it as you learn through experience where your own writing weaknesses lie. The most common error types in academic journal writing are tense errors; subject-verb agreements; modal verb use; collocation errors and incorrect prepositions. When you are confident with the details of your writing accuracy, go back to this next checklist of critical keys for successful journal article writing: target your journal carefully so you bypass the gatekeepers the first time; check all instructions from the journal; use an appropriate paragraph and inter-paragraph structure; plan simple take-home messages that are repeatable and provable; have a searchable title and keywords; start from the results; use clear, strong headings and subheadings; ensure your English is clear and accessible to a wide audience (the complications stem from the technical language used only) and, finally, check for your own typical errors to save time and stress.

Useful resources:

Completing a PhD by Publication
https://www.youtube.com/watch?v=kooWKjunQks

Writing a Journal Article
https://www.youtube.com/watch?v=N1zLsJKINUo
https://www.youtube.com/watch?v=pRNmUDQ71pU

Paraphrasing
https://www.youtube.com/watch?v=1VACN6X2eF0

A grammar website
http://www.mogtreeapp.com

A bank of phrases for every section of your article
http://www.phrasebank.manchester.ac.uk

Reading list:
Burrough-Boenisch, J. (1999). International reading strategies for IMRD articles. Written Communication, 16(3), 296-317.

Cargill, M and O'Connor, P (2013) Writing Scientific Research Articles: Strategy and Steps. 2nd Ed. Oxford, UK, Wiley-Blackwell (www.writeresearch.com.au)

Olsen, L A and Huckin, T N (1991) Technical Writing and Professional Communication. New York, USA, McGraw-Hill.
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Climate Change and Corporate Climate Change Risk Disclosure in Australia

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Climate Change a global crisis

Climate change is a global challenge, and the crisis is a significant hurdle in the path to sustainable development (Kyte, 2014). It is also causing more damages at a faster pace than expected (World Economic Forum, 2020). Both the economy and our lives are affected by climate change (United Nations, 2020). Australia's Annual Climate Statement for 2019 mentions the severe drought and increasing bushfire congenial weather patterns throughout the year are indications of gradual climate change (Australian Bureau of Meteorology, 2020).

Climate-Related Business Risks and Corporate Disclosure

At the 2020 Climate Action Summit, the UN secretary general called for all countries to declare "a State of Climate Emergency" (Dunne, 2020). The United Nations Environment Programme Finance Initiative (UNEP FI) estimates that delays in worldwide efforts to deal with the climate change issue will likely cause business losses of nearly US$1.2 trillion over the next 15 years (UNEP FI, 2019). Climate change poses physical and transition risks to businesses. Examples of physical risks include increases in mean and maximum temperatures, increased incidence of extreme weather events, and increases in the mean sea level. The examples of transition risks include changes in international and domestic policy, law, markets and customer and community attitudes towards business activities (Governance Institute of Australia, 2020).

Over the years investors have also become interested in companies' climate change related disclosures in their sustainability reporting (Strine et al., 2020). Therefore, large companies in particular, are urged to disclose their material risks in relation to climate change and the ways they are managing the risks. Australian corporate reporting and auditing regulators – the Australian Accounting Standards Board (AASB) and the Auditing and Assurance Standards Board (AUASB) – have jointly released guidance to organisations on their climate-related financial reporting obligations (AASB/AUASB, 2018). The guidance reinforces that report preparers, assurers and auditors must approach climate change-related issues with the same degree of rigour as is the case with any other financial disclosures; otherwise, companies and directors could be held liable for breach of duty and/or misleading disclosure under Australia's company law. Under the latest edition of the Corporate Governance Principles for companies listed on the Australian Securities Exchange (ASX), it is recommended to provided clear guidance on how to disclose climate risks (ASX, 2019).

Core Elements of Climate Risk Disclosure

Since 2019 the ASX has advocated that listed companies in Australia adopt the climate change risk disclosure recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

Since its release in 2017 many regulators across the globe have endorsed the TCFD's framework. As shown in figure 1, the TCFD framework consists of four core elements: governance; strategy; risk management; and metrics and targets (TCFD, 2017).

Climate Risk Disclosure by Australian Listed Firms

The global status report released recently by the TCFD indicates that disclosure is increasing however, there is a pressing need for improvement in the quantity and quality of climate change related

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Figure 1: TCFD Elements (TCFD, 2017)

disclosures (TCFD, 2020). Similar to the global trend, Australia's top companies are increasingly disclosing climate risks in alignment with the TCFD recommendations, but greater quantity and quality are required.

In a longitudinal study, it has been found that in the financial year 2018-2017, the majority of the ASX's 100 listed companies expressed an intention to adopt the TCFD recommendations (ASIC, 2018). In 2019 the study found that most of Australia's top 200 companies incorporated one or more elements of the TCFD recommendations in their annual financial or sustainability report. Among the companies that have made some disclosures, more than 40 per cent covered all four elements of the TCFD's disclosure framework. Some of the companies that demonstrate excellent disclosure practices are AGL Energy Limited, Aurizon Holdings Limited, and Insurance Australia. However, nearly one-third of all TCFD adopted companies have reported only one element. At the same time, more than 15 per cent of the sampled companies have made zero disclosures in relation to climate change risks. These companies include Bravura Solution Limited, James Hardie Industries Plc, and Polynovo Limited.

Linking Climate Risk Disclosure to Management Characteristics

While large companies are generally investing greater efforts into climate risk disclosure under stakeholder pressure, many of them are lagging behind. This suggests that stakeholder pressure alone cannot explain this phenomenon. It is worth investigating whether board and management characteristics also have a positive association with climate risk disclosure, given that climate change was an institutional priority in the 2020 reporting season and will continue to be so 2021 (Australian Institute of Company Directors, 2020). A recent study of Annual Reports or Sustainability Reports from 2019 of 200 ASX listed companies showed that, the level of climate risk disclosure by these top companies has a positive relationship with the proportion of female directors in the boardrooms. Hence, future research could be extended to other jurisdictions to support this fact if board and/or management's characteristics has any influence on climate change disclosure in other jurisdictions also.

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How Unicorn Leadership Grows

By: Major Namrata Dhasmana
Certified Business Strategist
Confidential
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"A Lion doesn't concern himself with the opinion of a sheep." Therefore, true leadership is standing out in the crowd fearlessly and calmly, and empowering others. Yes! It's a challenging attribute and so is Leadership. Leadership role demands uniqueness. That is why we are look for Unique Leadership attributes in a Leader.

The process of being Unique.

Our learnings and belief system are mostly influenced by our socio-economic environment. As we grow-up we also come across divergent perspectives, and in the process, we adopt and adapt and that ultimately shapes our world views.

But what stops us to change? Fear of uncertainty, and Fear of unknown consequence.

Fear makes us defensive. The moment we push our boundaries, we create a new perspective, and that opens the door. We step into a new dimension and our new attributes starts to develop. And the new journey begins. As we evolve, our fear disappears, and our core values begins to change. Now we can see our true self and we are in the path of Uniqueness and adopt attributes of a Unicorn leader.

Conceptually, a Unicorn is a rarest mythical animal. However, Unicorn leaders are not mythical. They do exist among us. They are self-aware. They have wisdom to navigate a challenge based on their past experience rather than committing same mistake twice.

Unicorn leaders are neither different nor complex, rather they live and lead their lives by being self-aware with the utmost simplicity.

Rarest of Rare is the Simplest of the Simple. Is Unicorn Leadership difficult to explore?

No, I don't think so.
For example: whatever Martin Luther King, or Nelson Mandela, did was simple. They stood for basic human rights and freedom, but many of us have rare courage to stand-up for these rights. That is why they were unicorn leaders.

A Unicorn Leader contributes by doing righteous things for long term impact. Adopting Unicorn Leadership style is not an impossible thing to achieve but one needs encourage to reinforce positivity and to create magic.

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Mind the Waste: Some remedies for overconsumption and Waste of Food

By: Dr Sumesh Nair,
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E-mail: Sumesh.Nair@aib.edu.au

Introduction

"Throwing away food is like stealing from the table of those who are poor and hungry."

There are no better expressions than the above quotation from Pope Francis. The magnitude of food waste is underlined by the alarming statistics from the Food and Agriculture Organisation of the United Nations, which estimates that one-third of the world's food production is wasted or lost. This scenario is further aggravated in recent times by the onset Covid-19 pandemic. The situation made many people unemployed and pushed many of them to poverty. As many nations worldwide grapple with the second and the third waves of the pandemic, the problem worsened.

To put the food waste scenario into perspective, on average, nine million people die every year due to hunger and hunger-related diseases. One in every nine people in the world goes to bed every night hungry. These data highlight the criticalness of the issue and warrant urgent evaluation and intervention. The truth is that most of us seldom mind wasting food without no understanding of its consequences. Therefore, the pertinent questions for us are:

Are we doing enough in term of saving food for others? What could we do to help the situation improve? One of the solutions lies in adopting a responsible food consumption behaviour, supported by environmental conscious marketing best practice of organisations. However, the good news is that ethical marketing and responsible consumption behaviours are gradually becoming the focus of many industries' marketing practices in Australia and elsewhere in the world.

The essay will, therefore, focus on advocating relevance of mindful consumption habits in the context of food waste management. Secondly, the essay will discuss the possible steps that an organisation's marketing department could develop and implement to spread consciousness for mindful-consumption behaviours, and thereby to avoid unnecessary overconsumption.

The menace of overconsumption

Overconsumption is a social evil. The celebrated Pareto principle of the 80:20 rule is true in the consumption context as well that is:-

"20% of the world's population is responsible for the consumption of 80% of the planet's resources."

According to one estimate, we will need two planets by 2030 to sustain current growth and consumption rates because we will consume twice the resources the earth can generate by that time. Most of these should be described as conspicuous consumption that could very well be restricted, better still wholly avoided. Food overconsumption of a 'conspicuous' nature is the primary reason for wastage and loss and one of the / key causes off the lifestyle diseases and high carbon footprints of individuals and families. For example, the health issues of overeating fast food and the pollution issues of eating meat and dairy products are well documented.

Coming back to our focal issue, the social impacts of overconsumption are unparalleled. Overconsumption is the result of affluence in society. Two aspects would help control this social menace: a) the self-discipline of consumer; b) interventions by external agencies that

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is the way we market our goods and services and this factor also partly responsible for overconsumption. This article, therefore, focuses on what the consumers can do in checking on their food consumption habits and follow a mindful consumption practice. Lastly, what marketing as a business discipline can do or how businesses can reorientate their marketing activities again waste or practice de-marketing as an self-enlightened business organisation.

Mindful consumption

Mindful consumption is "a consumer mindset of caring for the self, for the community, and for nature, that translates behaviourally into a tempering of the self-defeating excesses associated with acquisitive, repetitive and aspirational consumption." (Sheth, Sethia, & Srinivas, 2011, p27). Further elaborating the idea, Sheth, Sethia, & Srinivas (2011, p27) indicated that "Consumption has a tangible facet: the behaviour of engaging in consumption, and in practice that is what appears to matter. There is also an intangible facet of consumption: the mindset pertaining to attitudes, values and expectations surrounding the consumption behaviour. A conglomeration of mindful behaviours and mindful mindsets gives rise to the concept of mindful consumption. A mindful mindset induces people to be "caring toward self, community, and nature", whilst mindful behaviour, is a watchful control over one's consumption behaviours consistent with personal values and norms. Mindful consumption behaviour prevents people from becoming involved in overconsumption and encourages them to become consciously aware of the needs of fellow consumers and citizens. When it comes to food consumption, buy what do you need and donate if you happen to buy more than your family's requirements. Mindful consumption has its roots in eastern philosophy, which generally promotes behaving wisely and non-judgementally. In this context, mindful consumption promotes kind and wise acts of control over food consumption and use. In a broader sense, mindfulness is not wasting and losing valuable things to supporthuman survival on this planet.

Mindful consumption is a mighty weapon to fight against the scarcity and unavailability of many needed products and services. For example, the shortage of cleaning products, toilet rolls, and pasta during the pandemic's initial lockdown months resulted from panic and selfish buying rather than production and distribution issues. These issues can be managed effectively by individual sensible and mindful behaviours of consumers.

De-marketing

Marketing as a business function is responsible for influencing demand for products and services. This influence leads to an increased demand and supply situation, a fundamental reason for consumption. The creative use of branding and marketing communication methods is critical in creating product awareness, brand loyalty, repeat purchases, and overconsumption. It is counterintuitive to think that marketing could be the solution to overconsumption. However, the idea of demarketing is neither new nor contradictory to common sense. The idea of demarketing is first floated by Philip Kotler and Sidney Levy in their 1971 article that defined the concept as ". . . that aspect of marketing that deals with discouraging customers in general or a certain class of customers in particular on a temporary or permanent basis." The concept of de-marketing would advocate people to buy only the food necessary to prevent food waste by reminding consumers of stories of people around the world who are hungry and/or dying of hunger. This way, demarketing in the form of a social marketing drive can influence people to change their behaviour to avoid overconsumption of food and practice mindful consumption.

Conclusions

In conclusion, I like to recommend that we need to make a concerted effort to change our habits and behaviours towards responsible consumption and to reduce wastage of food. Thereby, we can save food for the poor and needy.

Internalising mindful consumption will help, however changing marketing practice can foster good habits. Hence, the concluding statement in the words of famous chef Thomas Keller: "Respect for food is a respect for life, for who we are and what we do."

#biodiversitymatters: Facts & Figures

By Dr Kuntal Goswami - ACSDRI

Throughout the world biodiversity is declining at an alarming rate. We intend to make an emotional appeal to save biodiversity through bio-diversity related facts and figures and nature photography. The SDGs 14 & 15 are related to conserve & protect biodiversity.

Creeping development activities leading to significant amounts of forest loss.

Between 2000 to 2020, globally the proportion of forest area declined from 31.9 percent to 31.2 percent. This marginal decline equates to 100 million hectares of forest area. The primary reason for this loss is due to expansion of agriculture. At the same time, the Food Waste Index Report 2021 highlights that around one-third of food produced globally gets lost or wasted (i.e. 1.3 billion tonnes each year). SO, DO WE REALLY NEED MORE AGRICULTURAL LAND?

Photography by Ketan Talati

Insects are NOT enemy. They are POLLINATORS.

Insects are the biological foundation of all terrestrial ecosystems and they have a significant influence on the nutrient recycling process, pollination, dispersion of seeds, decomposition and improvements to soil fertility, food for other species and supporting agriculture. It is estimated that there are about 1.4 billion insects per person on this planet. Unfortunately, the rate of extinction of insects is eight times greater than that of mammals, birds, and reptiles. Intensified agriculture is the main cause of this decline and thus we need to change the way we undertake our agriculture.

Photography by Anuj Mukherjee

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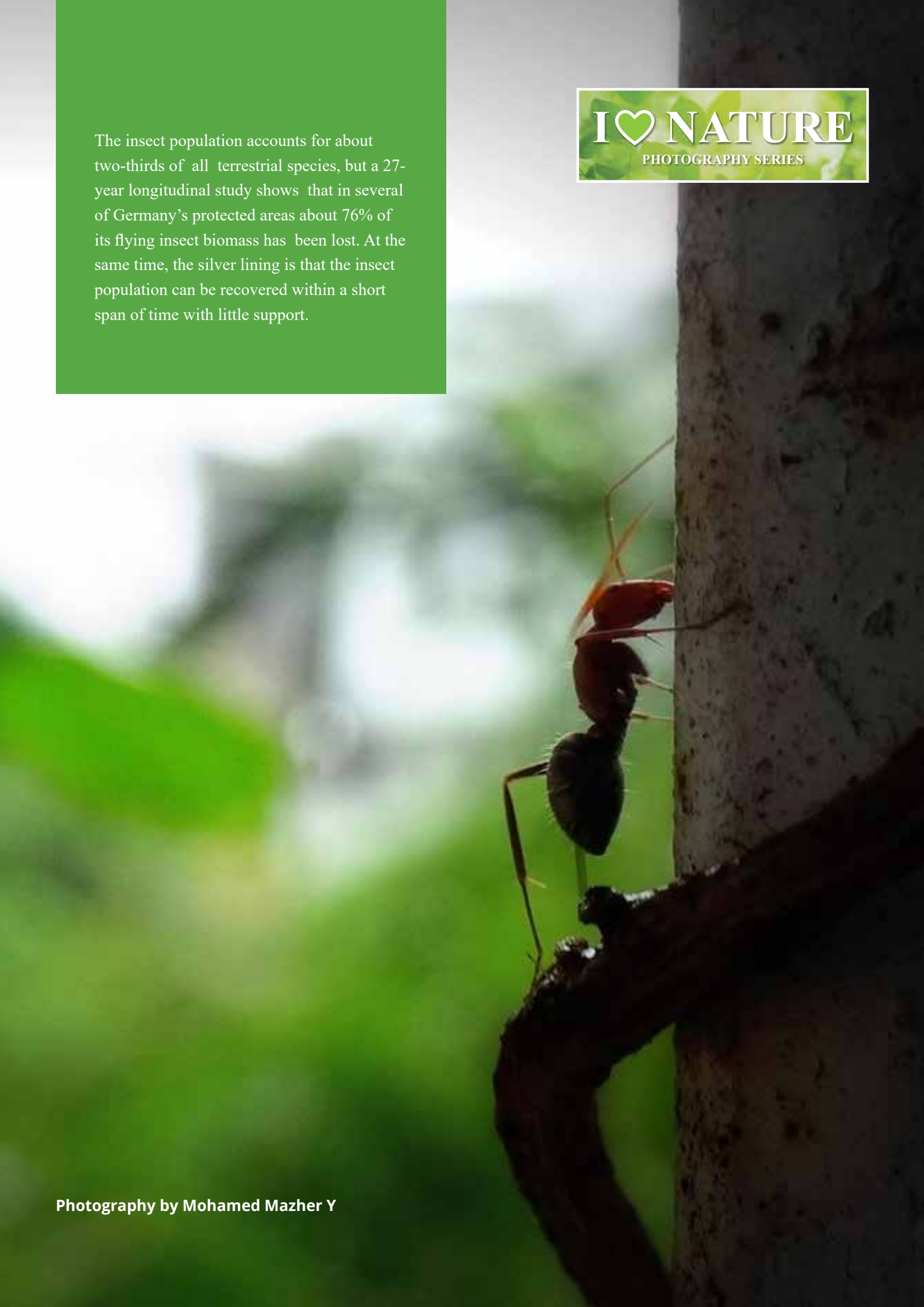
The insect population accounts for about two-thirds of all terrestrial species, but a 27-year longitudinal study shows that in several of Germany's protected areas about 76% of its flying insect biomass has been lost. At the same time, the silver lining is that the insect population can be recovered within a short span of time with little support.



Photography by Mohamed Mazher Y

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Butterflies and moths are good indicators of a healthy natural habitat as they have high degree of host-plant specialisation.

Moths are more diverse than butterflies and contributes to the food chain as a prey to bats and other insectivorous species.

Photography by Subramanya Muralidhara

Elephants – Ecosystem Engineers

It is estimated that about 20,000 African elephants are killed every year for their tusks and only 400,000 African elephants are left in the wild from a population of 12 million a century ago. Commercially ivories are sold in the United States, China, Thailand, and Hong Kong.

Elephants are the ecosystem engineers. They help to maintain the savanna, disperse seeds, and create pathways in the dense forest for other animals. Wildlife crime is defined as harvesting and trading contrary to national law. Between $48 to $153 billion of resources are lost due to the illegal Wildlife Trade.

- Wholesale prices for illegal ivory in China over the years are as follows: US$ 750 per Kg in 2010; US$ 2100 per Kg in 2014; US$ 1100 per Kg in 2015; US$ 728 in 2018.
- Ivory prices paid to poachers in Kenya and Tanzania were between US$148 to 95 per kg in 2014; US$ 88 to 78 per Kg in 2016; US$ 54.5 to 40 per kg in 2018.

Photography by Alankar Chandra

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Photography by Alankar Chandra

Bees – Essential Pollinators

Bees are the most essential pollinators: there are over 16,000 known bee species around the world. Bees pollinate about 70 of the 100 crop species. About 90 % of the world's population depends on bees. It is estimated that honeybee pollination contributes four to $AUS six billion to the Australian economy. Unfortunately, across the globe, the bee population is declining at an alarming rate. Between 2006 and 2016 the Australia lost 100 thousand commercial honeybee hives and among the Australian states and territories, New South Wales, Victoria, and Queensland lost the most. Exposure to pathogens, agrochemicals, and habitat loss and degradation are the main causes of decline in the bee population.

Wildlife crime not only endangers animal species but also increases the chances of spreading unknown and deadly diseases. The data shows seventy-five percent of emerging infectious diseases, such as Bird flu, Ebola and Covid 19, are zoonotic.

Habitat encroachment and land degradation are primary pathways for new infectious diseases transmission.

Globally , one fifth of the Earth's land area (equivalent to the combined land mass of Russia and India) is degraded and land degradation is affecting the well-being of 3.2 billion people.

Photography by Rupam Bose

Photography by Mohamed Mazher Y

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Photography by Mohamed Mazher Y

A recent trend suggests that ... only one third of countries are on track to achieve their own national biodiversity targets...

Photography by Anuj Mukherjee

…Up to 1970, our ecological footprint was smaller than the Earth's rate of regeneration…

…In 2020 we are overusing the earth's biocapacity by at least 56%...

Photography by Anuj Mukherjee

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Between 1970 and 2016 there has been a sharp decline in a wide range of species. It is estimated that, on average, there is a 68% decrease in the population sizes of mammals, birds, amphibians, reptiles, and fish. The main reasons are that over the last 50 years there have been significant increases in human populations, consumption, and urbanisation. The rate of decline is not the same across the region, however tropical areas saw the largest decline in biodiversity.

Photography by Mohamed Mazher Y

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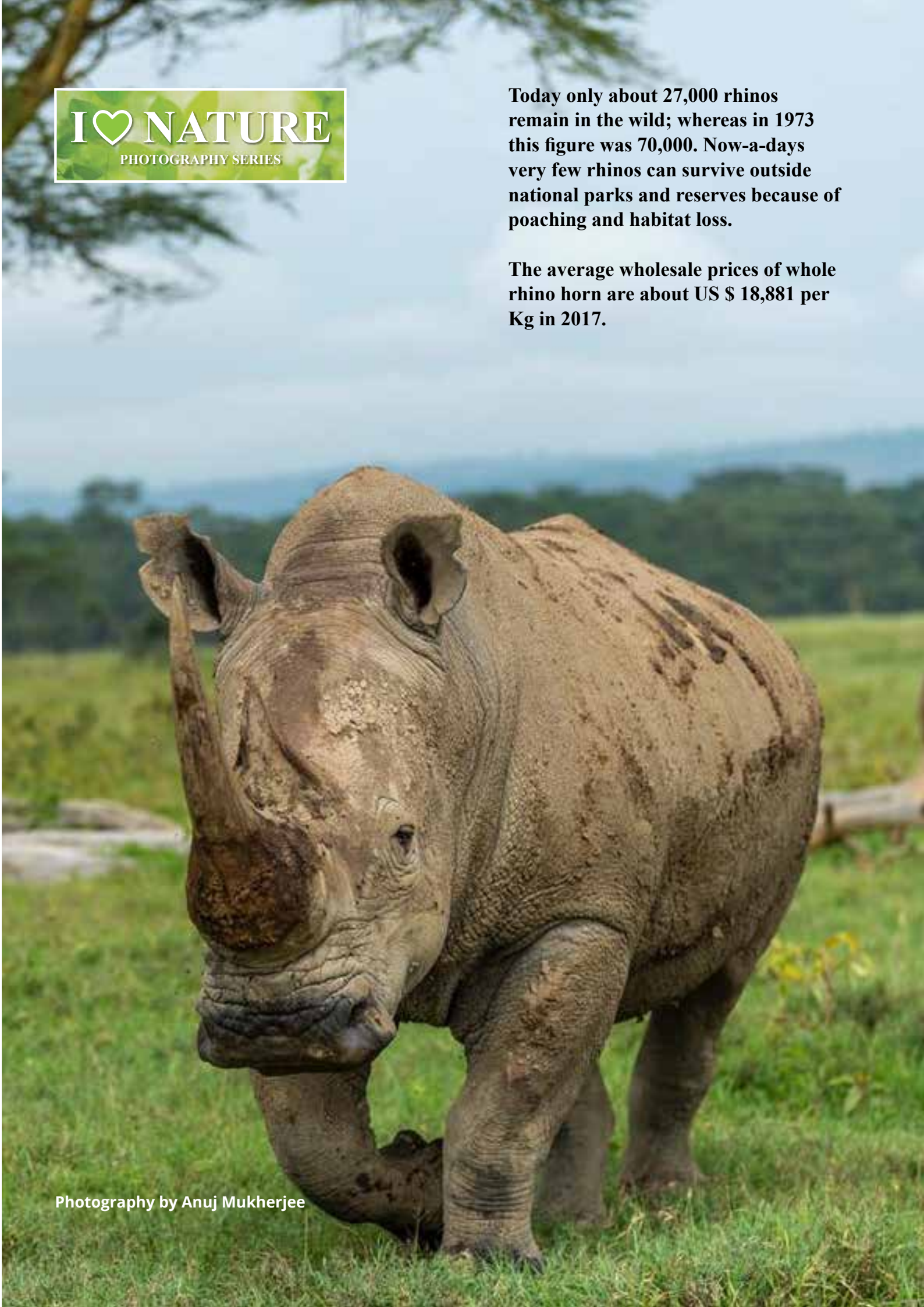
Today only about 27,000 rhinos remain in the wild; whereas in 1973 this figure was 70,000. Now-a-days very few rhinos can survive outside national parks and reserves because of poaching and habitat loss.

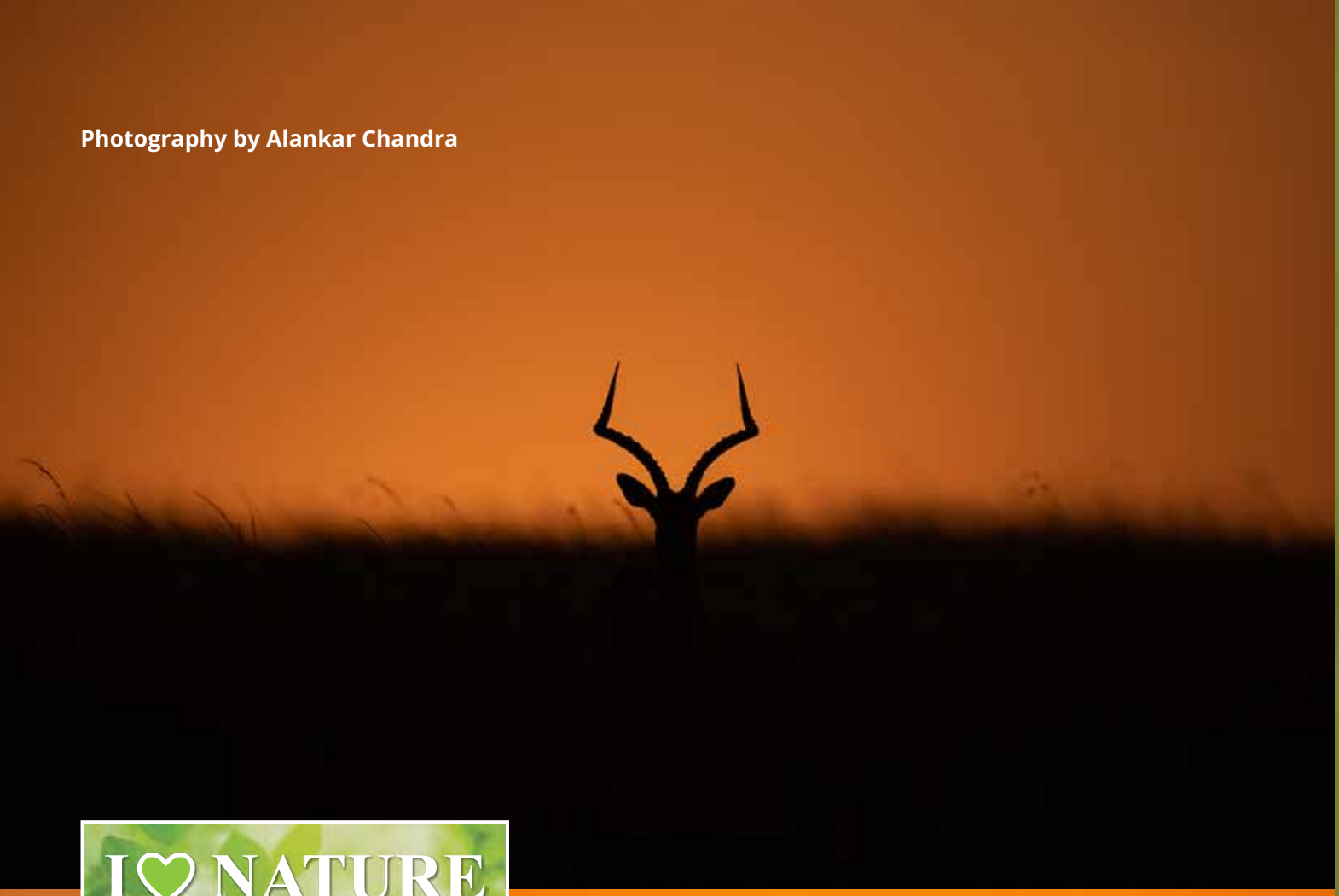
The average wholesale prices of whole rhino horn are about US $ 18,881 per Kg in 2017.



Photography by Anuj Mukherjee

Only 23,000 African lions are left in the wild. Wild lions are mostly found in Africa, except for a small population in the Gir Forest National Park in India

Photography by Alankar Chandra



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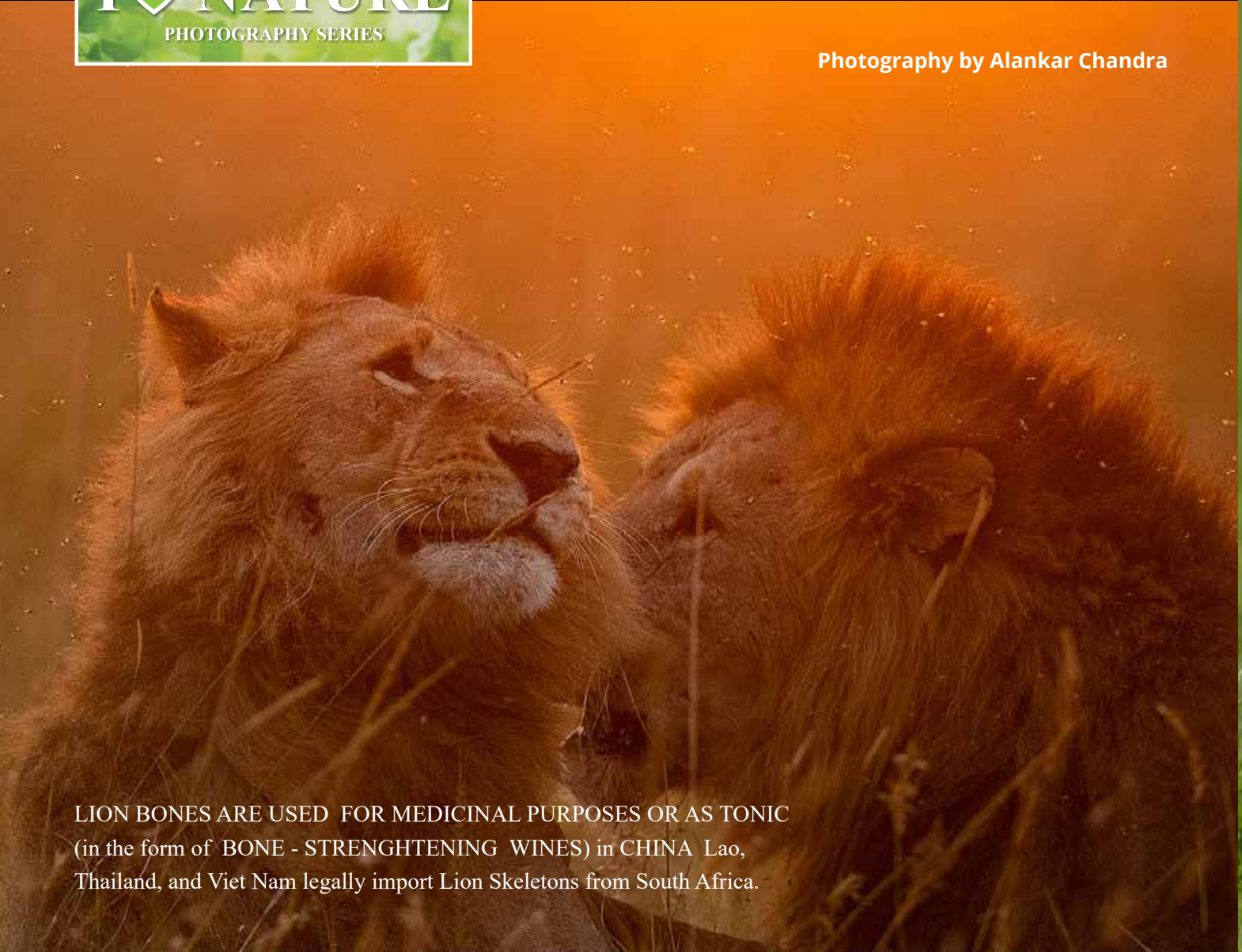

LION BONES ARE USED FOR MEDICINAL PURPOSES OR AS TONIC (in the form of BONE - STRENGHTENING WINES) in CHINA Lao, Thailand, and Viet Nam legally import Lion Skeletons from South Africa.

The Cheetah population is declining at a rate of 2.26 % annually.

Illegal trade and Habitat loss are the biggest threats to Cheetahs.

About 6,674 of the adult Cheetah population is left in the wild.

Photography by Anuj Mukherjee

Photography by Anuj Mukherjee @ Massai Mara, Kenya.

The Maasai Mara ecosystem is home to approximately 25% of Kenya's wildlife. It hosts more than 95 mammal species along with being a recognized Important Bird Area (IBA) with 550 bird species.

Photography by Anuj Mukherjee @ Massai Mara, Kenya.

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In the United States, there is no federal law that prohibits the possession and sale of big cats and exotic pets including tigers and lions.

In the US, privately-owned commercial facilities crossbreed big cats, and with some generating over US $ 1 million per year.

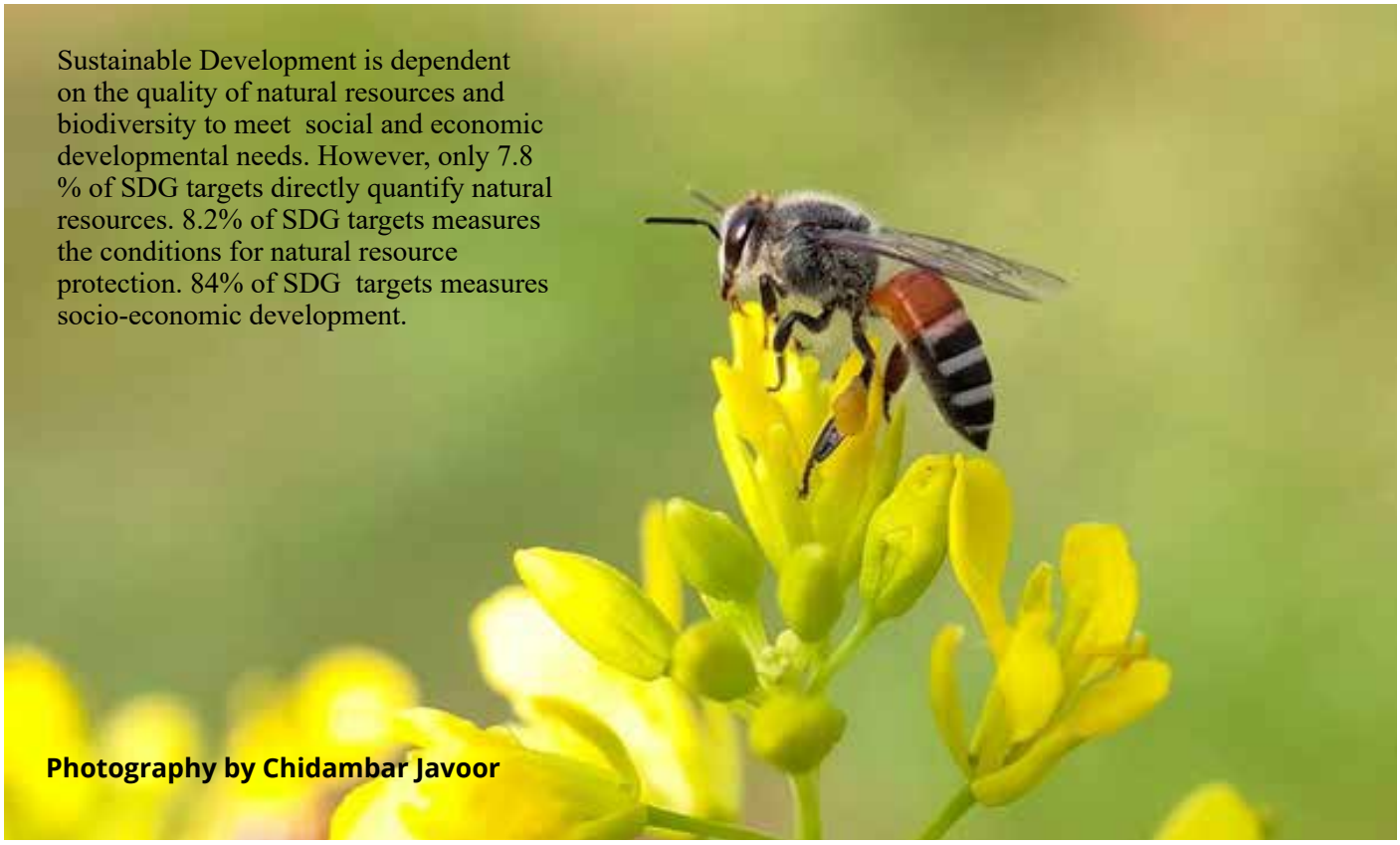
Photography by Alankar Chandra

Photography by Alankar Chandra

Between 2000 and 2020, forest area increased in Asia, Europe, and North America. However, significant decreases have been recorded in Latin America, Sub-Sahara Africa, and South Eastern Asia.

Photography by Roshan Lal

It is a known fact that biodiversity is declining at an alarming rate. But the more alarming fact is that only one-third of countries are on track to achieve their national biodiversity targets.



Photography by Chidambar Javoor

Globally, Key Marine Biodiversity Areas are included under PROTECTED AREAS.

In 2000 THE FIGURE WAS 30.5%.

In 2019 THE FIGURE INCREASED TO 46%.

OCEAN ACIDIFICATION HAS INCREASED FROM 10 % IN 2015 TO 30% IN 2019.

Modern industrial fishing techniques, including damaged fishing nets left out in the marine habitat, are some of the biggest threats to marine life.

- Every year more than 300,000 small whales, dolphins, and porpoises die from entanglement in fishing nets.
- More destruction of marine life happens every day due to Bycatch.
- Bycatches are unintentional or incidental capture of non-targeted species.
- "*Dolphins, marine turtles, seals, seabirds, sharks, juvenile fish, fish with little commercial value, corals … billions of unwanted animals are caught every year by fishing boats then discarded dead or dying back into the ocean.*"
- Bycatch is a waste. Many millions of tonnes of marine life get wasted every year as Bycatch.

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Photography by Bhaskar Nandi

Photography by Tanisha Sapru

Birds are the best-known class of organisms on the planet. Birds are also extremely useful indicators of wider biodiversity.

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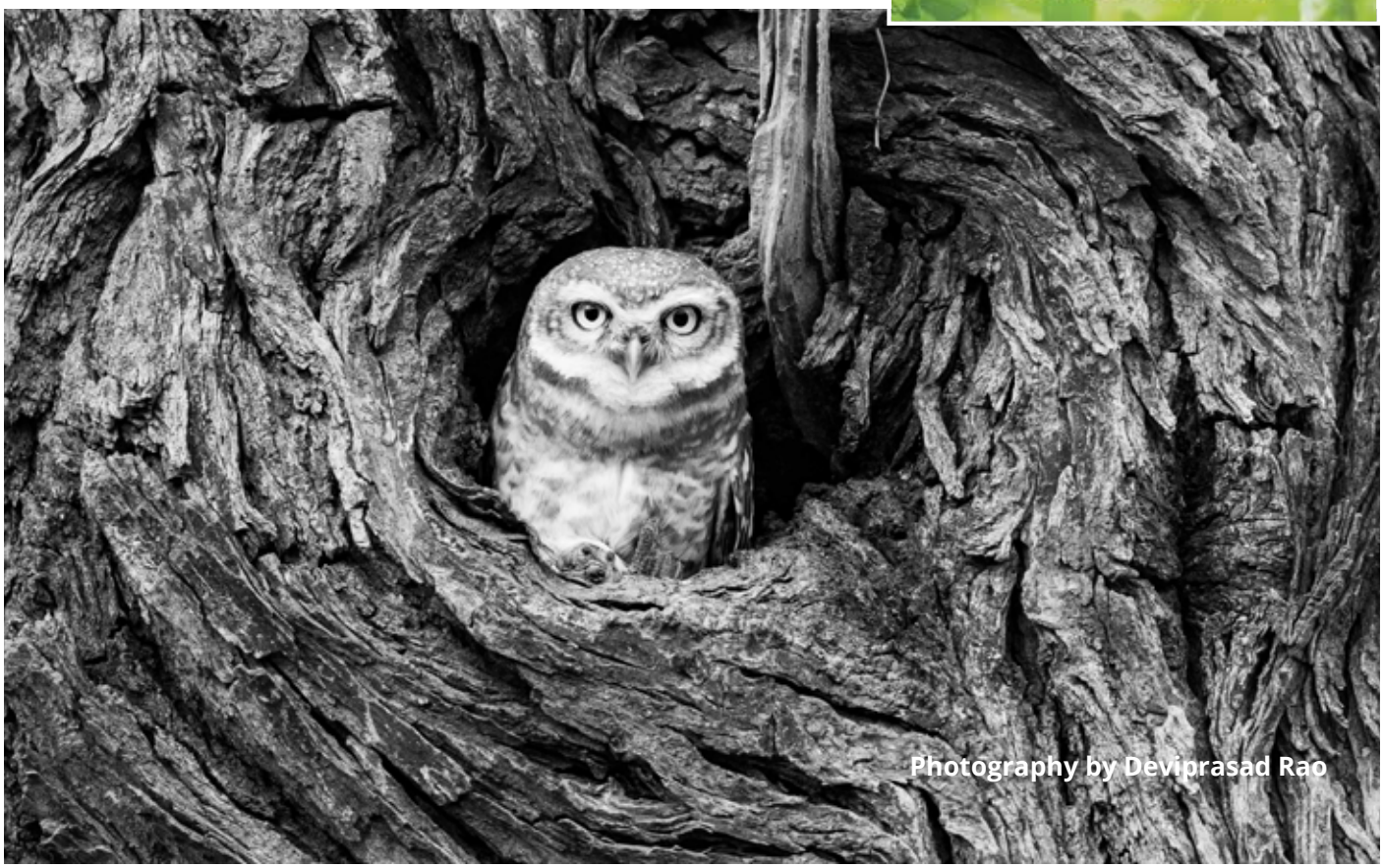

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Different Actors in Wildlife Crime :

- Co-ordinator: controls or organises a trafficking network.
- Courier: physically sends parcel or transports animals.
- Domestic Trader: deals in domestic trade of animals.
- Transporter: transports animals domestically for a fee.
- Money mule: receives funds on behalf of the co-ordinator.
- Overseas trader: illegal exporter.
- Poacher: hunts and traps live animals on behalf of the co-ordinator.

Nature Art work by Piyali Chakrabarti

For future publication and collaboration, please contact:

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