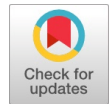


A Study on SDG Linkages in the Eco-Hope Series of News Portal Mongabay India

Lekshmi Priya Sanal, I. Arul Aram



Abstract: *Even after eight years since the birth of UN Agenda 30 and its 17 sustainable development goals (SDGs), climate change and its varying effects continue to loom over the earth and its inhabitants. How well are the SDGs covered by the media and communicated to the masses in a way that may evoke action and participation? The goals actively advocate for participation at global, national, and regional levels but, most importantly, at grassroots as well as individual levels. The knowledge that individuals or communities practising sustainable ways of living and livelihoods may go a long way in aiding other communities if adapted on a needs and context basis. The role of journalists and communicators becomes crucial here when such stories combined with the SDGs have the power to draw attention to not just the perils of global warming, or climate change but also, the idea that solutions to mitigate these exist. However, media coverage of SDGs or actions taken by various nations towards achieving these goals has been nearly negligible worldwide; with general environmental reportage itself, being rarely taken up in the mainstream media. To make environmental news more approachable, a constructive approach that includes context and examines solutions rather than focusing only on problems is the need of the hour. The role of alternative media platforms that particularly focus on environmental issues proves crucial here. One such platform in India is Mongabay India, whose Eco Hope series focuses on highlighting efforts and solutions towards environmental conservation. This paper studies linkages between SDGs emerging in 133 feature stories of the Eco Hope series and takes a mixed method approach to identify the linkages through content and thematic analyses.*

Keywords: Sustainable Development Goals, Constructive Journalism, Environmental Communication, Solutions Journalism.

I. INTRODUCTION

In 1972, it was the stirring speech of late Indian Prime Minister Indira Gandhi at the first-ever United Nations Conference on the Human Environment in Stockholm, Sweden that elicited the ‘developed’ world’s attention to the underlying nexus of poverty with environmental degradation and that the very ‘western’ idea of conservation cannot be fully realised until quality of life of the global poor is elevated.

Manuscript received on 17 December 2023 | Revised Manuscript received on 30 December 2021 | Manuscript Accepted on 15 March 2024 | Manuscript published on. 30 March 2024.

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Retrieval Number: 100.1/ijmcj.C106703030324
DOI: [10.54105/ijmcj.C1067.03030324](https://doi.org/10.54105/ijmcj.C1067.03030324)
Journal Website: www.ijmcj.latticescipub.com

Since then, her speech has been consistently misconstrued to meet different agendas; however, it was the first time that a world leader, and not one from the Global North, drew attention to the needs of the developing nations and tried to debunk the ‘development versus environment’ dichotomy (Rao, 2022, [1]). The now touted speech had a rousing colossal impact towards raising environmental consciousness around the world in varying degrees and may have laid the foundation for subsequent international laws on environmental conservation and climate action.

II. CURRENT GLOBAL ENVIRONMENTAL ISSUES

While the global narrative singles out climate change and its effects on the planet in the form of global warming, melting glaciers, changing weather patterns, flash floods and droughts as the primary concern that requires immediate calls for action, there are fairly other numerous environmental issues that need equal attention. One issue that requires much addressing is the harmful effects of unsustainable agricultural practices, such as chemical usage, monoculture practices, and fossil fuel consumption, on the environment worldwide. Often viewed in isolation, the agriculture sector is a leading contributor to water contamination, soil degradation, and greenhouse gas emissions—affecting all key segments of the environment.

Also, there is anthropogenic pollution in all forms including industrial and chemical waste, plastic, air, water, and soil contamination; along with poor waste management and unsafe measures of waste disposal—almost all countries around the world are affected by various forms of pollution. Another major global concern is the rampant deforestation observed on a global scale to meet human needs, which now is being tailed by compensatory afforestation schemes for carbon offset. While deforestation in itself is a pressing environmental concern that seems to have no end, poorly researched schemes that include cash crops or ornamental species do little to replace self-sustaining ecosystems such as tropical rainforests or grasslands. Other important environmental issues include irreversible fossil fuel exploitation to meet energy requirements; poor conservation laws along with poaching, trophy hunting and illegal pet trade; inequitable distribution of natural resources and their indiscriminate overuse by those in power, etc. Lastly, usurping forest tracts from tribal and indigenous communities for developmental projects, especially in tropical countries like India and Brazil, is slowly being addressed as a grave environmental issue. Previously viewed only under the human rights violation lens, their sustainable ways of living as custodians of forests and indigenous knowledge of judicious forest management are gradually gaining recognition and also, advocacy globally.



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Over fifty years later, thoughts on the environment and its conservation continue to evoke only divided opinions. Paavola shares that “those who focus on development often feel that the pursuit of environmental goals could compromise important developmental goals and that developmental goals should have priority. Similarly, those whose main interest is the environment feel that environmental goals warrant priority and postponing or even sacrificing developmental ambitions” (2002, p. 5, [2]).

In India, this sentiment continues to exist in tandem with the mainstream media increasingly observed to be more development leaning in the development versus environment stance, with regularised profiling and vilification of environmentalists as anti-growth agents; even more so, if they belong to tribal and indigenous communities. This is in sharp contrast to how Indian media championed the cause of environmentalism during the 1970s with two historic movements, Chipko Andolan against deforestation in northern India and Silent Valley Movement against wiping out of rainforest tracts for a hydroelectric project in the southern state of Kerala.

The economic reforms of the 1990s may have been the starting point of changing outlooks amidst the masses and the media that now viewed environmentalism as an obstruction to development, employment and economic welfare (Guha, 2013, [3]). Since then, the dominant paradigm regarding development has almost always conflicted with environmental conservation. Mishra asserts that “the necessity of development from within public discourse is never shattered: much of the middle class and the media consider development as significantly more important than environmental impacts of developmental activities” (2022, p. 294, [4]). In the fight towards environmental conservation or tackling climate change on a global front, it doesn't help when influential political figures like Donald Trump and Jair Bolsonaro, at the peak of their respective presidential terms, went on public record dismissing grave environmental concerns like global warming, took actions such as withdrawing from the landmark Paris Climate Accord or made amendments to laws allowing primary tropical rainforests on indigenous land to be razed down for mining, cattle ranches and monoculture cultivations or cutting funds for agencies monitoring environmental crimes. Taking the historic opinion leader concept (Katz & Lazarsfeld, 2017, [5]) into account, such actions not only influence the public's perception of the need for environmentalism and climate action but also undermine and undo decades of hard work and advocacy of activists, journalists, scientists, policymakers, non-profit organisations and grassroots conservationists.

III. DEVELOPMENT AND ENVIRONMENT

As observed throughout the Anthropocene, natural resources from the environment and their utilization have remained crucial for any form of development. These serve as inputs for almost all forms of goods and services that we enjoy today (Grossman & Krueger, 1995, [6]). However, the idea of development has been largely restricted towards a human welfare-based one that is fuelled by economic

growth. Lu (2009, [7]) points to the commonly accepted perspective on the interlinkage of anthropogenic development and economic growth, which comes from the monetary- and materialism-based boom that was observed during the industrialization period. She further points out that this world-view of human welfare entirely bases itself on the ‘conquest of nature’ to achieve economic development that can only be measured through industrial expansion and economic growth; with total disregard towards the indiscriminate consumption of finite natural resources. Additionally, Paavola (2002, [8]) highlights how environment and development are often seen as two mutually incompatible spheres and parties engaged in either sector view each other's goals as impediments to their own. But this need not be the case. It was only after the concept of sustainable development came into the public sphere towards the latter half of last century, following a universal concern over the excessive exploitation of finite natural resources and environmental degradation for human needs, that the idea of development began to shift from the economic growth-based human-centric model to one that sought for the overall well-being of the planet and all its beings—human and non-human.

IV. IMPEDIMENTS TO SUSTAINABLE DEVELOPMENT

Poverty and inequality in and among countries are the foremost impediments to sustainable development, with a select few having monopolised access over the common access resources in reality despite these being non-excludable in theory. Other factors include continued deployment models of development that only focus on economic growth and progress without considering environmental upkeep, unsustainable agricultural practices, amending environmental protection laws by policymakers to cater to vested interests of industrial and corporate lobbying, inequitable distribution and biased management of natural resources, energy sector's continued dependence on fossil fuels, poor and incompetent waste management systems, wars and associated instabilities, exclusion of indigenous and tribal communities with their resourceful knowledge of sustainable living practices, lack of proper awareness and literacy on various environmental issues among the common public, overpopulation, etc.

V. THE REALITY OF CLIMATE CHANGE

Visible effects of climate change such as uncontrollable wildfires, increasing flash floods and incessantly rising temperatures on not just vulnerable countries but also previously unaffected developed countries in recent years are now propelling nations to accept the reality of climate change. Subsequently, many conferences on environment and sustainable development were put together by the United Nations to prompt nations towards individual as well as collaborative actions towards tackling environmental degradation and rising global warming; most historic ones include the.



Earth Summit in Rio (1992) that led to the production of the Agenda 21, Rio Declaration, and the Statement of Forest Principles, followed by Millennium Summit (2000) that led to the creation of the Millennium Development Goals (MDGs); and most recently, the United Nations Summit on Sustainable Development in Paris (2015) that gave birth to the Agenda 2030 and its 17 sustainable development goals or the SDGs.

Built over the lessons learnt from the inability to achieve the Millennium Development Goals, which only focused on areas of human development sans the environmental angle, Sustainable Development Goals, or SDGs, were outlined by the United Nations in Agenda 30 released in 2015, for all its member-states to adopt as a “shared blueprint for peace and prosperity for people and the planet, now and into the future” (United Nations, 2015, [9]).

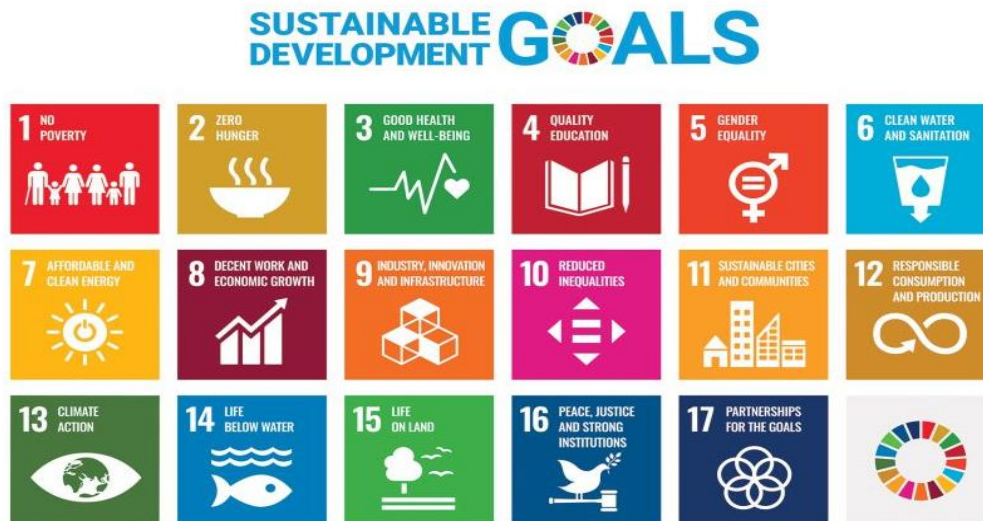


Figure 1: The 17 Goals. Source: Department of Economic and Social Affairs, United Nations

These goals encompass 17 areas of development that call for immediate and collaborative actions by member-states towards the well-being of not just people but also the planet. Unlike its precursor, the MDGs, the inclusion of various goals that revolve around sustainable development centred over environmental upkeep has been game-changing. Perhaps the failure of MDGs could be attributed to policymakers ignoring this very aspect of human development being inextricable from environmental well-being and that one cannot exist without the other. Within these 17 SDGs that range from ending poverty and gender equality to environmental conservation and climate action, these areas are interlinked and need to be tackled collectively and not individually.

A. Influence of News on Audience Towards Environmental Awareness

The influence of any form of news on citizens can never be discounted or disregarded. Among the principal functions of journalism are the services of disseminating truthful and accurate information to its audience and raising their awareness about various aspects surrounding and affecting their lives; which are information and education, in a nutshell. These functions have the power to shape opinions, create trends, elicit support or resistance, etc. However, the same could not be said towards the effectiveness of news influence on the audience concerning environmental issues. This is partly due to the lackadaisical approach towards environmental reportage by mainstream media organisations that often jump the gun with half-baked research and unverified claims to join the bandwagon. To realistically raise citizens’ awareness of environmental issues, the importance given to news stories from other beats that are

substantiated with thorough investigation and facts needs to be delegated and exhibited in the environmental sector as well. The influence of news priming and framing mechanisms continues to remain a prominent area of study in the field of journalism research and the same can be inferred for environmental news. Additionally, constructive and solutions-based coverage of environmental news may further aid in reducing news avoidance, eco-anxiety or solastalgia (Albrecht, 2005, [10]) in the audience and, in actively consuming environmental news.

B. Need for Better Communication

How well are the SDGs covered by the media and communicated to the masses in a way that may evoke action and participation? The goals actively advocate for participation at global, national, and regional levels but, most importantly, at grassroots as well as individual levels. The knowledge that individuals or communities practising sustainable ways of living and livelihoods may go a long way in aiding other communities if adapted on a needs and context basis. The role of journalists and communicators becomes crucial here when such stories combined with the SDGs have the power to draw attention to not just the perils of global warming, or climate change but also, the idea that solutions to mitigate these exist. The necessity to disseminate information to the public about SDGs that does not just centre on human development alone but also environmental conservation, climate action and mitigation paves the way for better awareness as well as a call to action.



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Mainstream coverage of environmental issues is either bare minimum, unscientific, or most often alarmist in nature. Add negativity bias, sensationalism and polarising views in the mediascape (Constructive Institute, 2022, [11]), there is also a rising observation of news avoidance among people (Benton, 2020, [12]).

While the mainstream media continues to trudge cautiously when it comes to dealing with environmental issues, an emergence of alternative media platforms and independent organisations that extensively cover issues on conservation, climate change, indigenous rights as well as sustainable practices is being observed around the world through constructive, solutions-based, non-alarmist, scientifically-backed and restorative narratives (Sanal & Aram, 2023, [13]).

C. Constructive and Solutions-Based Narratives

In times when solutions for climate change are becoming increasingly relevant, a constructive and solutions-based approach that does not compromise credibility or accuracy while covering environmental issues holds great potential. Constructive journalism is defined as “an emerging form of journalism that involves applying positive psychology techniques to news processes and production to create productive and engaging coverage, while holding true to journalism’s core functions” (McIntyre & Gyldensted, 2017, [14]), and involves a solutions-centred approach to news coverage.

Ginsberg (2022, [15]) believes that solutions journalism is rapidly gaining prominence amidst communities bearing the maximum brunt of climate change such as island nations and calls it “a method of reporting that could prove more successful than the more alarmist stories readers traditionally associate with climate reporting.”

Mongabay is one such global environmental science and news platform that has been covering all kinds of environmental stories ranging from conservation, energy, and indigenous rights to global laws and policies since its establishment in 1999. In recent years, the independent non-profit platform has begun incorporating constructive and solutions-based narratives in its news coverage that has enabled greater readership as well as better awareness of environmental issues and its solutions.

For this study, the researchers chose the Indian segment of the environment news platform with a particular focus on its solutions-based Eco Hope series. A total of 133 feature-length stories published under this series between 2020 and 2023 were considered for the study. Under the theoretical framework of SDGs, mixed methods such as content analysis and thematic analysis were employed for the same to study SDG linkages in these articles. Research on this style of environment news coverage with a targeted SDG focus is novel and can add value to existing research in the fields of journalism, environment communication as well as climate communication.

VI. REVIEW OF LITERATURE

According to Easterly (2015, [16]), the idea that SDGs have been very well covered and that people around the world have extensive awareness of the goals is a belief that is widely held by experts in sustainable development circles.

The author asserts that to sincerely elicit action from the masses, more awareness and comprehension of the initiatives are required.

A 10-year-long longitudinal study by Janoušková et al. (2019, [17]) is perhaps the most exhaustive research done on SDG coverage by mass media. The research included an examination of SDG-related news published between 2009 and 2018 by 10,000 English-language newspapers around the world. The authors highlight how the concept of sustainable development in itself is poorly communicated through mass media, which makes the target of achieving the SDGs a greater challenge. This study found topics such as climate change (SDG 13), renewable energy (SDG 7), gender equality (SDG 5), extreme poverty (SDG 1), and access to justice (SDG 16) were the most published, although these may or may not have explicitly linked with the goals.

López-Carrión and Martí-Sánchez (2023, [18]) also conducted a longitudinal study from 2015 to 2022 to analyse the coverage and discourse on the SDGs and Agenda 30 in the Spanish digital press. Focusing on 10 digital newspapers with maximum readership in Spain, this study found that while the number of news items related to the goals and Agenda 30 may have significantly risen at about 1000% with passing years, the actual coverage on both topics had been on a drastic decline. Also, it was found that news articles gave greater prominence to compliance with UN directives by governments and institutions than to the content over the goals.

Meanwhile, McArthur and Zhang (2018, [19]) studied media coverage trends surrounding MDGs and SDGs across 16 English-language newspapers with prominent readership worldwide and drew parallels between reportage patterns during both timelines. Their research established how goals' coverage has most definitely increased, especially when international summits were being held. An interesting find by the authors, however, dispels the general notion of goals' discourse centring in and around only developed nations, when in fact, much higher coverage on both MDGs and SDGs was undertaken by countries such as India and Nigeria. Bhattacharya et al.'s (2020, [20]) study identifies the key roles of media and correlates these with the dissemination of SDGs-related information by selected national, sub-national Bangla, English and online newspapers in Bangladesh. Their research, which employed a mapping exercise, found that the media carriers in the country only fulfilled the role of channelling information flow as far as SDG delivery was concerned and pertinent accountability process by media houses was nearly non-existent. Litofcenko et al. (2023, [21]) focus on the discourse surrounding the term sustainability, once considered a radical environmentalist concept. Through quantitative analysis of mass media in Austria, they have traced the changing use of the terminology from 1990 to 2020 and uncovered how the narrative is no longer as polarised as it used to be and more frequently includes positive and far-reaching approaches to appeal to conservative populations.

A chapter by Maweu and Paterson (2019, [22]) expands on media coverage of climate action or SDG 13 in Kenya. Their research implicates a problematic media system in the country that is heavily privatised and commercialised; indicating how development narratives inducing education and advocacy can be twisted to meet the vested interests of private players.

The study includes an investigation of climate action coverage and information gaps on climate change in rural communities in Kenya and concludes how their national media are ill-equipped to support the goal efficiently.

In Adapa and Yarram’s (2023, [23]) study, the focus is on the contribution of micro, small and medium-sized enterprises (MSMEs) towards achieving economic growth and employment, or SDG 8 in India. Through in-depth interviews with MSMEs owners and start-up founders, the authors try to understand if these enterprises have any role towards achieving SDGs in the Indian context and develop a framework that may specifically allow assessment of the impact of MSMEs on the SDGs. While this study does not include a media angle, the inclusion of SDG 8, one of the key goals, as well as an Indian context makes it important enough to be included in the literature survey.

An interesting study by Mishra (2020, [24]) highlights the media angle on the devastating effects of the COVID-19 pandemic on the Indian economy, which is believed to have reversed years of progress achieved towards implementing the SDGs to reduce hunger and poverty. Using the author’s ground reports of the pandemic as a journalist along with official reports and documents issued by the Indian government, the study analyses the nature of media involvement, in terms of extensive coverage that may have strengthened crisis communication measures in the state as well as ponders over criticisms over intents and attempts of restrictions on the institutional flow of official pandemic-related information.

A. Research Questions

1. What are the prominent SDGs emerging in the Eco Hope series articles?

2. What are the prominent linkages between SDGs in the Eco Hope series articles?
3. What do the linkages between SDGs in articles signify?

B. Materials and Methods

The study takes a mixed method approach to analyse the data. The collected data set includes 133 feature articles dated from 3 January 2020 to 19 July 2023 in the Eco Hope series of the Mongabay India platform. Content analysis was employed first to identify various SDGs emerging out of these articles. The data was organised, coded and quantified using Microsoft Excel. Thematic analysis was employed next to identify prominent themes, examine the linkages and discuss relationships between SDGs that were identified in the quantitative leg of the analysis.

VII. RESULTS AND DISCUSSION

A total of 133 articles from 2020 to 2023 (as of 31 August 2023) were analysed for this study (Table 1 in Appendix). Each of these articles was closely scrutinised to find which SDGs best fit into the narratives and how these were linked. Except for two articles, which only included one SDG (15), all the 131 articles were found to have a linkage of at least two SDGs and with the maximum linkages being 15 in a single article. As showcased in Figure 2, 115 articles included SDG 15 (86.46 %), 92 articles included SDG 11 (69.17%), 91 articles had SDG 2 (68.42%), 85 articles had SDG 1 (63.90%), 83 articles had SDG 8 (62.40%), 70 articles had SDG 13 (52.63%), 62 articles had SDG 12 (46.61%), 52 articles had SDG 6 (39.09%), 51 articles had SDG 10 (38.34%), 41 articles had SDG 3 (30.82%), 35 articles had SDG 5 (26.31%), 32 articles had SDG 14 (24.06%), 29 articles had SDG 9 (21.80%), 28 articles had SDG 4 (21.05%), 27 articles had SDG 16 (20.30%), 16 articles had SDG 7 (12.03%) and lastly, 9 articles included SDG 17 (6.76%).

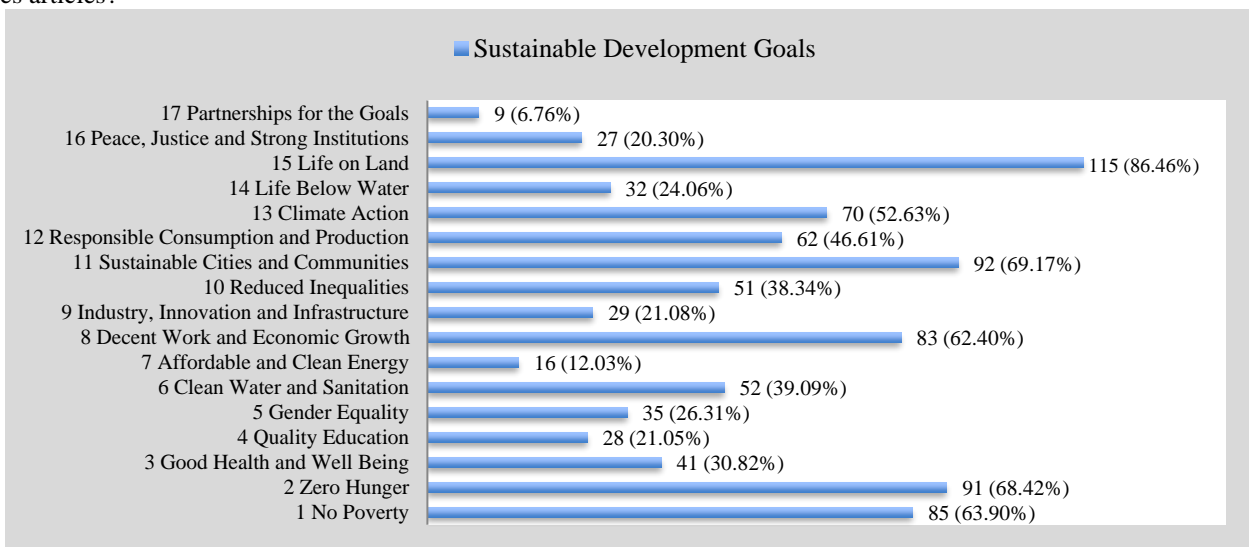


Figure 2: Distribution of SDGs in Eco Hope Series of Mongabay India



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While SDG 15 (Life on Land) was found to be linked with almost all other SDGs in 115 articles out of 133, a cluster linkage between SDG 8 (Decent Work and Economic Growth), SDG 2 (Zero Hunger) and SDG 1 (No Poverty) was prominently observed across 59 articles, in addition to these SDGs being individually found in other articles.

Under thematic analysis, the most prominent themes in the articles that fit closest with the SDG parameters (Figure 3) are as follows: Sustainable practices (11, 12): 91.72%, Conservation (14, 15): 84.96%, Climate action and science (13): 34.58%, Livelihood and economic growth (8-2-1, 9):

28.57%, Water security (6): 24.81%, and Marginalised communities and indigenous knowledge (10): 22.55%.

Themes such as Women empowerment and financial autonomy (5, 8): 19.54%, Health (3): 16.54% and Government and non-government interventions (16): 9.02% were found in the intermediate, while themes such as Education (4): 8.27%, Clean Energy (7): 5.26%, and Global interventions (17): 3.75% were present but a few in numbers. As the Eco Hope series was framed on a solutions-based approach, all 17 SDGs fit well within this narrative. Only two articles in the entire series have actively referenced the SDGs.

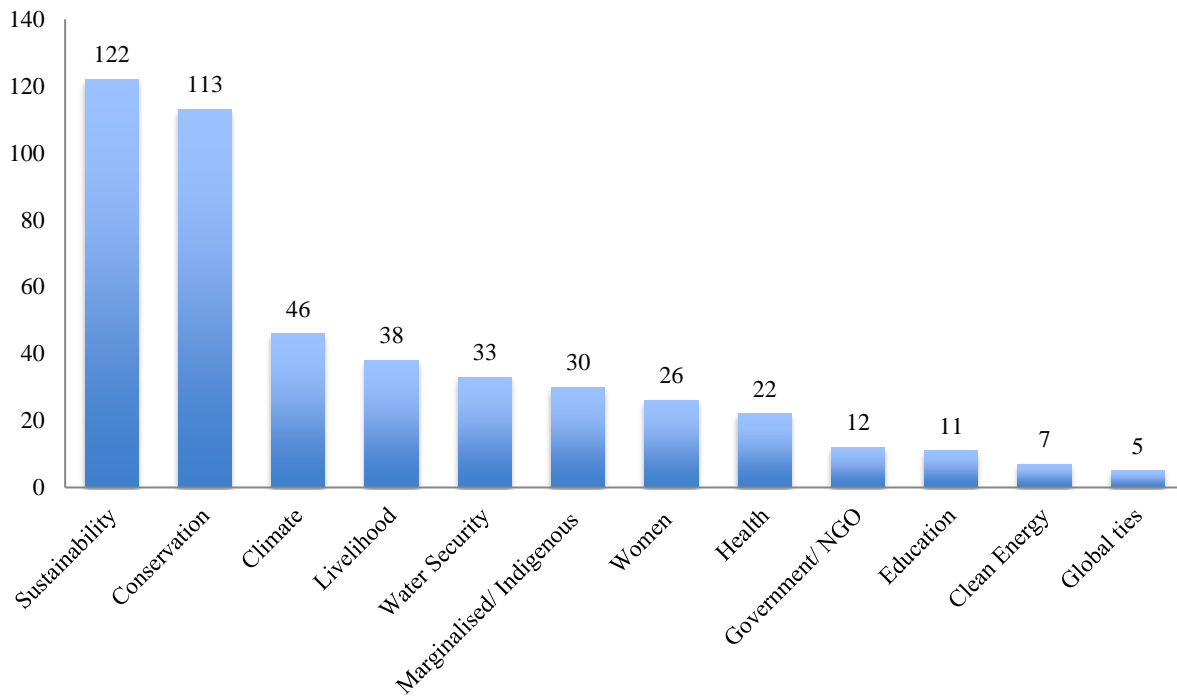


Figure 3: Themes with Respect to SDGs in Eco Hope Series Articles

Considering the antecedent that the Mongabay is an environmental platform, the maximum number of articles (86.46 %) coming under the scope of SDG 15 (life on land) is obvious from the linkages illustrated in Figure 2. SDGs (11, 2, 8, 13 and 12) that encompass the Anthropocene in terms of human welfare and anthropogenic activities that affect the environment and non-human beings are also major segments that have been taken up by Mongabay India in the series. Their news coverage focuses on the efforts and actions of individuals, and non-state actors, as well as criticisms and commentaries on schemes and actions of state actors towards conservation and sustainability.

Targeted focus on themes such as sustainability, conservation and climate change in the majority of articles (Figure 3) sheds light on the solutions narrative of the series. These figures help understand the areas, themes and SDG linkages that this platform has primarily focused on; upon deeper reflection, one can observe constructive narratives that highlight anthropogenic effects on the environment,

urge for sustainable practices without forsaking human needs and solutions to mitigate climate change. However, there are relatively fewer explicit mentions of SDGs in the articles.

Following are the various inferences made by the researchers based on the analyses of the linkages and themes emerging in Figures 1 and 2, and further exemplified with screenshots of individual articles (Figures 3 to 9):

- i. One of the key inferences is how SDG 8 is inextricably linked with SDGs 1 and 2, irrespective of any explicit mention of linkages between these areas in the articles. No poverty and zero hunger can only be achieved if decent work and economic growth are available. While linkages with other SDGs may still be further broken down and examined as parts, the nexus between poverty, hunger and work needs to be studied and understood as a whole rather than parts, even in the fields of journalism and mass communication. Figure 4 showcases the screenshot of an article illustrating this linkage.

Mongabay Series: Eco Hope

Aadhimalai, winner of UN Equator Prize from Nilgiris, offers a lesson in indigenous economics

by Arathi Menon on 20 December 2021



- The Aadhimalai Pazhangudiyinar Producer Company Ltd is run by the tribal people of the Nilgiris, with 1609 indigenous shareholders. Almost 90 percent of employees are tribal women.
- The company collects farm and forest produce from tribal people directly using digital

Social channels



Figure 4: Screenshot of an Article Featuring Linkage Between SDGs 8, 2 and 1

Upon close examination, one can deduce that with lucrative employment opportunities made available to the marginalised, poverty-stricken indigenous communities in the Nilgiri region of southern India, their standard of living bettered in terms of poverty and hunger. Also, the incorporation of one of the protagonists with a smiling visage in the cover image helps establish a welcoming and approachable tone to the article.

- ii. Next, it was gathered that SDG 8 along with SDGs 1 and 2 furthermore has a strong linkage with SDGs 14 and 15. In an inequitably distributed resource-centred society, SDGs 8, 2 and 1 are affected. With the affluent hoarding up the majority of natural resources and making these

inaccessible to the rest of the strata, nutritional security and poverty alleviation solely depend on the availability of job security. In an environment that has high population density, the distribution of resources is already inequitable and its utilisation is overburdened; which makes the conservation of the natural environment an additional burden in the race for survival for the poor. Further, the linkage of good health and well-being of human beings (SDG 3) with the environment may be invisible on the surface, but it is a relationship that is crucial for the upkeep of both. An example of an article showcasing these linkages is shared in Figure 5.

Mongabay Series: Eco Hope, Nature-based Solutions

Climate resilient millets boost livelihood opportunities for Odisha's tribal women

by Aishwarya Mohanty on 16 August 2022



- Millets are being revived in the state of Odisha, on a large scale under its flagship Odisha Millets Mission. Millets grow well in dry zones as rain-fed crops and are considered low-duty crops.

Social channels



Figure 5: Screenshot of an Article Featuring Linkages Between SDGs 14-15 and 1-2-8-3

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As the headline suggests, climate resilient millets offer agrarian practices with lesser environmental damage (SDG 14 and 15), while providing employment opportunities (8) to marginalised tribal women that diminishes hunger (2), alleviates poverty (1), and offers good health and well being (3). Besides the usage of relevant keywords, the inclusion of women farmers from the tribal community featured in the article along with their produce in the cover image sets a positive and constructive narrative of independence, self-reliance and success.

iii. In situations where indigenous communities are involved, SDGs 10, 11, 12, 14 and 15 have strong

linkage with SDGs 1, 2, 3 and 8. Native practices and knowledge of indigenous communities (10), which often involve conscious and sustainable management of natural resources to meet their needs (11, 12), are being revisited and adapted by forest authorities towards conservation activities (14, 15). Involving indigenous communities in conservation activities through economic opportunities (8) further achieves goals 1 and 2. Figure 6 features the screenshot of an article showcasing these linkages.

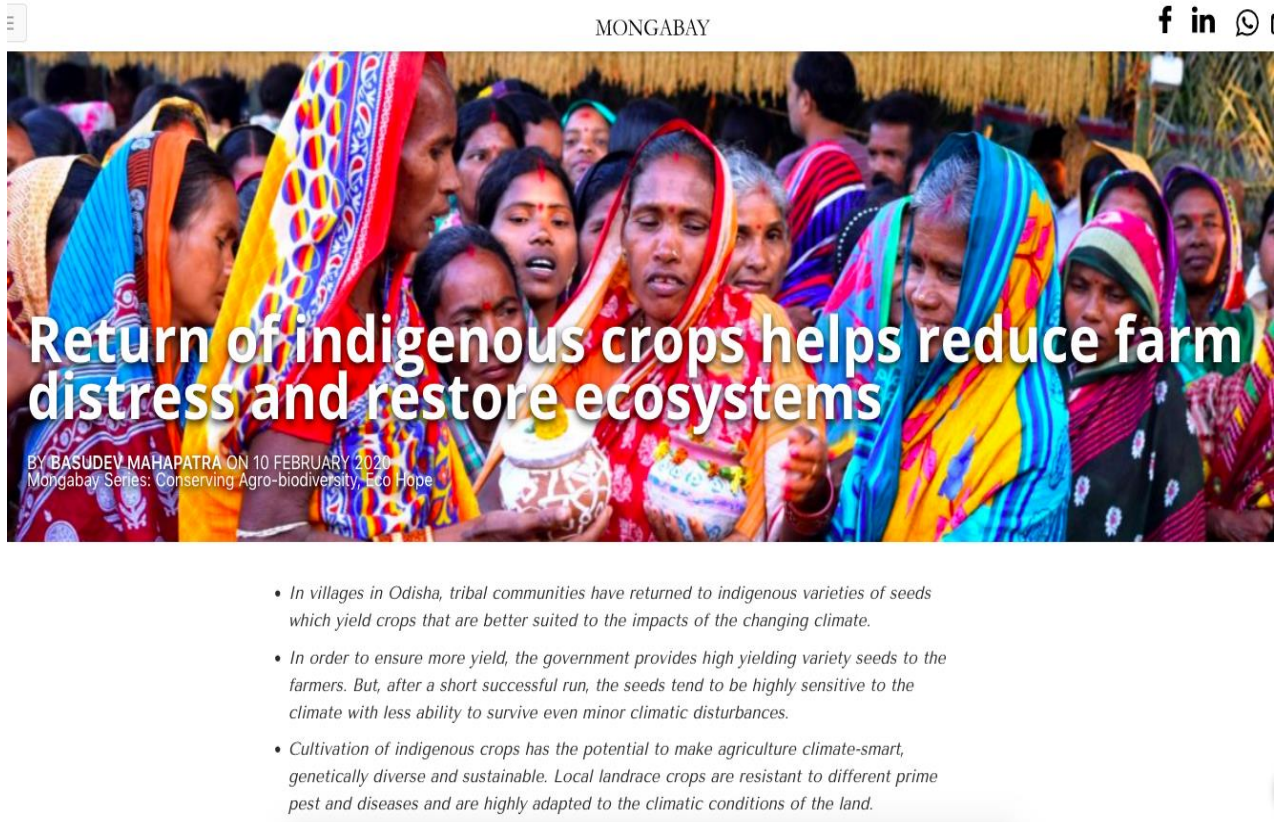


Figure 6: Screenshot of an Article Featuring Linkages Between SDGs 1, 2, 3, 8, 10, 11, 12, 14 and 15

The keywords in the headline alone help in narrowing down the various linkages. Reduced farm distress helps with employment (8), which further alleviates hunger (2) and poverty (1), enhances health and wellbeing (3), and restores ecosystems (14, 15). Return of indigenous crops points to indigenous communities (10), sustainable communities (11) and sustainable consumption and production practices (12).

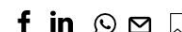
iv. All the articles on conservation measures led by indigenous communities unanimously showcase the strong reverence and commitment that these communities (11) have towards nature, no matter how marginalised they may be. For instance, traditional agroforestry practices of tribal communities living in forest hinterlands as well as traditional fishing practices of coastal communities have been observed

as nature-centric sustainable approaches by authorities that are now being brought back to promote responsible production and consumption practices (12). Further, many of these practices as observed in multiple articles also have played a crucial role towards climate action (13). This highlights how important it is to report and disseminate native and indigenous conservation efforts on a much larger scale. This, in return, will aid other indigenous communities worldwide towards adopting their climate mitigation efforts as well as adapting practices from other communities to fit their circumstances. A screenshot of an example of these linkages in an article is given in Figure 7.

Mongabay Series: [Conserving Agro-biodiversity, Eco Hope](#)

An indigenous community in Meghalaya offers lessons in climate resilience

by Sahana Ghosh on 4 November 2021



- The indigenous food system of the Khasi community in Nongtraw village in Meghalaya offers lessons in climate resilience and sustainable food systems, says a United Nations Food and Agricultural Organisation report.
- The traditional food production system is supported by jhum (shifting cultivation), home

Social channels



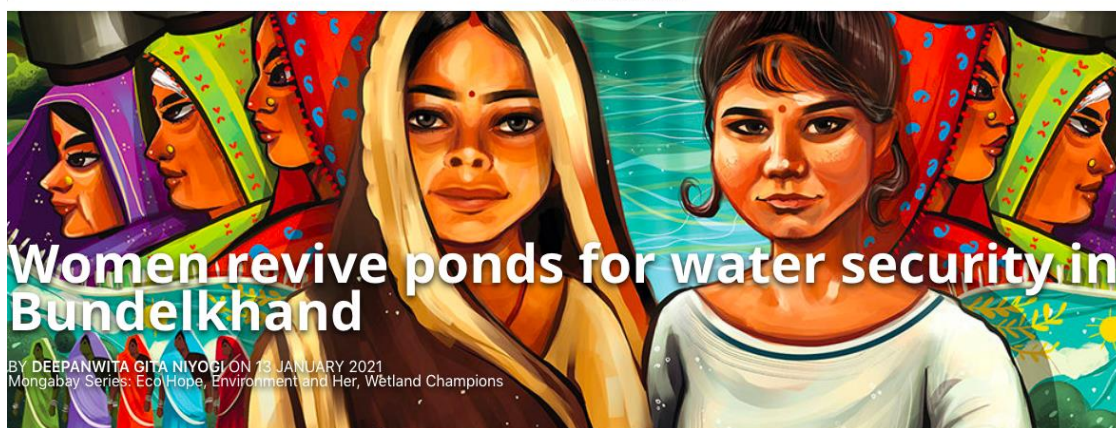
Figure 7: Screenshot of an Article Featuring Linkages Between SDGs 10, 11, 12 and 13

Headline keywords help infer these linkages: indigenous community (10), lessons (11, 12) and climate resilience (13). In place of usual stock or representative images, an in-situ farmer of the featured indigenous community in the article is showcased in the cover image, which may aid towards establishing a better connection with the audience.

- v. SDGs 5 and 6 have an important linkage. Especially in rural India, many instances have showcased how water security has been crucial for women, in terms of their individual, domestic as well as social participation.

Despite being sidelined from primary decision-making in their own families, women are the ones who have to source water to run their households, sometimes going kilometres for the same. Access to clean drinking water and sanitation invariably points to food security (SDG 2), good health (SDG 3) and the ability to send children to school (SDG 4). If these SDGs are in place along with SDG 6, it can truly be empowering for women, especially in rural areas as the burden of survival (food and health) is reduced.

MONGABAY



- In the Chhatarpur district of Bundelkhand, Ganga Rajput and Babita Rajput have led the women of their villages to successfully revive ponds.
- The ponds, which now help with water supply in the drought-prone villages, had gone dry and women, who were responsible for the household's water, had to walk long distances in the heat to fetch water.
- A non-profit Parmarth Samaj Sevi Sansthan has created a network of women water warriors in Bundelkhand, Jal Sahelis, and is facilitating women like Ganga and Babita to lead their villages towards water security.

Figure 8: Screenshot of an Article Featuring Linkage Between SDGs 5 and 2-3-4-6

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The provision for women to enter public spaces in terms of livelihood and decision-making in society can only come from a certain sense of autonomy that may be further emboldened through water security, as observed in multiple accounts.

Figure 8 showcases one such example of linkage. As one can observe in the screenshot, various facets in this style of reportage including the illustrations of woman protagonists in the cover image and the headline that celebrates them as the heroes of their communities set a different tone that deviates from the usual doomsday, alarmist narratives in mainstream environmental news.

Mongabay Series: [Clean Energy](#), [Eco Hope](#)

Addressing challenges in food systems with climate-smart agriculture

by Priyanka Shankar and Sahana Ghosh on 22 December 2021



• As technologies and practices for better water management and climate-smart agriculture (CSA) improve in India, solar-based irrigation systems and direct-seeded rice are gaining momentum.

Social channels



Figure 9: Screenshot of an Article Featuring Linkages Between SDGs 13, 14, 15, 16 and 17

It is a commentary on various challenges in food systems that employ climate-smart agriculture, as the title suggests. Given the nature of the article, a representative image has been used here. However, unlike usual generic, stock images, this one features a farmer working with irrigation pipelines in a field with multiple solar panels and greenhouses in the background. The relevance of the keyword 'climate-smart agriculture' is represented quite well by the screenshot featured in Figure 9.

vii. Even if one were to only study headlines and cover images of these articles under the constructive journalism framework, it may aid towards drawing comparisons to the mainstream style of coverage of environmental issues. This may also assist towards incorporating better environmental reporting practices that do not only focus on the negative but also positive

and constructive practices in society. These two facets are important, as these are openers to any news article and set the mood for readers to continue or leave.

Lastly, based on the analysis of all the linkages, the researchers have developed a map that showcases all the linkages between all the SDGs emerging from the articles (Figure 10). The red links with varying weights showcase primary and secondary linkages, while the blue links are tertiary but important nevertheless. The dotted lines that connect SDGs 16 and 17, while encompassing all the other SDGs, signify how the participation of peace, justice and strong institutions, i.e., governments and non-government organisations as well as global partnerships play a key role towards achieving all the other goals.

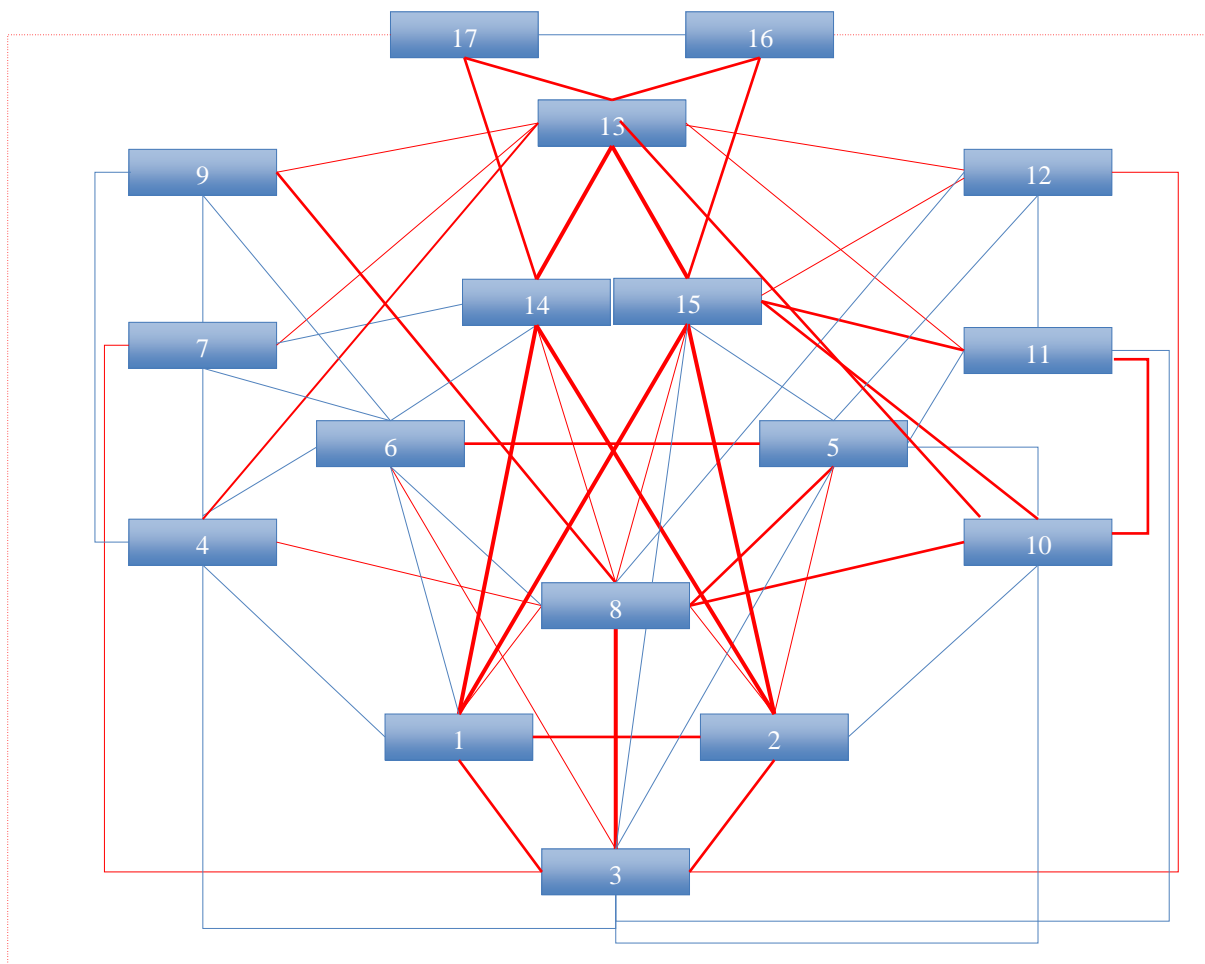


Figure 10: Linkage Map of SDGs Based on the Eco Hope Series.

VIII. CONCLUSION

The need to communicate environmental issues, especially in this time of visible climate effects observed worldwide, is well established. However, news must not just inform citizens but also educate, engage and prepare them. A shift from previous styles of unscientific and alarmist reportage of environmental news has to be consciously taken by news organisations worldwide. While constructive and solutions-based coverage may definitely be one of the ways forward, this study has elucidated how a single article focusing on conservation on the surface actually has linkages with multiple areas such as employment, poverty, food and water security, climate action, clean energy, etc. Even journalists may not be contemplating about these linkages from the perspective of SDGs while putting together such stories; which makes this study even more relevant. Stories showcasing interlinking of SDGs may further motivate citizens, policymakers, governments and international bodies over the need to expedite these goals for the betterment of not just their own future but also of the future of coming generations. The role of journalists and media organisations as communicators is crucial. It is recommended that extensive media research on target SDGs may be undertaken by researchers that may further help in understanding the linkages between these and communication strategies used for the same. While constructive journalism practising platforms are few, with even lesser numbers covering environmental issues,

research on such platforms and their methods of news coverage will prove beneficial towards SDG-covered areas such as Climate Action, Life on Land, Life below Water, Sustainable Cities and Communities, etc.

DECLARATION STATEMENT

Funding	No, I did not receive.
Conflicts of Interest	No conflicts of interest to the best of our knowledge.
Ethical Approval and Consent to Participate	No, the article does not require ethical approval and consent to participate with evidence.
Availability of Data and Material/ Data Access Statement	Not relevant.
Authors Contributions	All authors have equal participation in this article.

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Appendix

Table 1: SDG Linkages in Articles of Eco Hope Series of Mongabay India.

S.no.	Title	SDGs
1	A restored wetland brings hope to some in flood and drought prone Chennai	15, 14, 11, 13, 1, 6,
2	Pramila Bisoyi's journey from protecting India's national bird to the corridors of power	15, 5, 11, 4, 13
3	Once fighting for Bodoland, 35 men divert their efforts to grow a forest	15, 1, 6, 8-2, 11, 9
4	Indian cobra genome sequence can pave the way for new antivenoms	15, 9, 3
5	Indian government proposes a 10-year plan to protect birds	15, 12, 9, 7, 3, 14, 11, 16
6	Return of indigenous crops helps reduce farm distress and restore ecosystems	11, 15, 13, 3, 1, 2, 8, 12, 5
7	Artificial reefs breathe new life for Tamil Nadu's fishing communities	14, 9, 8, 12, 13, 10, 1, 2, 11
8	Sikkim braces for climate extremes	13, 4, 3, 6, 14, 15, 6, 5, 8-2-1, 10, 16
9	Looking beyond protected areas to conserve species in tea-garden terrains	15, 12, 8-2-1, 3, 1
10	A tiger on my land	15
11	Small but precious: small forest patches act as islands and corridors of biodiversity	15, 11, 16, 17, 3, 10
12	[Video] The barefoot ecologist who brought forests to life	15, 5, 10, 13, 6, 1,
13	Saving sparrows in cities, one nest at a time	15, 12, 11, 9, 4
14	Conservation is serious business at this private nature reserve in Uttarakhand	15, 6, 8-2-1, 11, 5, 4
15	Madhya Pradesh's 'fluoride warriors' unleash citizen science to empower community	6, 4, 5, 3, 9, 13, 2
16	Why India needs its fishers to save dugongs and their seagrass habitat	14, 13, 15, 11, 12, 8-2-1, 4,
17	Periyar Tiger Reserve, a trendsetter in converting poachers to protectors	15, 8-2-1, 10, 11, 9, 4
18	Mapping the ability of tea gardens to sequester carbon dioxide	15, 13, 8, 2, 9
19	Women act to make slums climate-resilient, one house at a time	13, 5, 3, 9, 1, 6, 7, 10, 8, 11
20	Sunrays light up dark villages in Jharkhand	8-2-1, 7, 6, 9, 10, 11, 4, 13
21	Villagers develop a protective ring around the Ranthambore tiger reserve	15, 11, 10, 8-2-1, 4, 3
22	Indian scientists building DNA database to protect the elusive red panda	15, 11
23	Ganjam fisherwomen unite to get back fish trade from monopolistic traders	5, 8, 14, 10, 1, 2, 4, 13, 15
24	"Ladies First!": Women fight against solid waste dumping in this Himachal Pradesh village	12, 5, 8-1, 15, 3, 2
25	Agrobiodiversity initiatives open women's horizons in Kerala	5, 1, 2, 15, 10, 8, 11, 13
26	Conservation biologists navigate the new normal	15, 3, 14, 11, 4, 17
27	[Commentary] In a pandemic, a chance to make India's recovery and growth equitable	1, 2, 6, 8, 12, 7, 9, 10, 3, 16, 15, 11, 13
28	[Commentary] Finding the middle ground with the Changpa herders in Ladakh	15, 8-2-1, 11
29	Nanotechnology applications can boost agricultural output in emergencies	2, 9, 8-1, 3, 12, 11, 14, 15, 6
30	From east to west, cyclones on Indian coasts are a reminder to put climate agenda ahead	13, 15, 14, 3, 11, 9, 12, 16, 3, 6, 8-2-1, 10, 4
31	[Commentary] India's Biological Diversity Act finally shows progress due to NGT	15, 14, 10, 9, 8-2-1, 16
32	Community conservation strengthens biodiversity in Simlipal Tiger Reserve	15, 14, 11, 10, 12, 8-1, 6, 2, 13
33	How carbon cycles in Pichavaram mangroves	15, 14, 13, 6, 8-2-1
34	Ecosystems-based adaptation keeps water running in Bhojdari even in dry months	6, 2, 13, 11, 8-1, 15, 14, 9, 12, 3, 16, 17
35	Bridging the gender gap through groundwater monitoring in a Rajasthan village	5, 6, 11, 2, 17, 10, 4, 8, 1, 3
36	Hope for healthy yak rides on Druk, the yak bull from Bhutan raised in Sikkim	15, 8-2-1, 10, 12, 13, 16, 17, 11
37	Rare Gunther's toad sighting highlights farms as biodiversity hotspots	15, 2, 6, 8-1, 11, 12, 14, 10, 16
38	[Commentary] Making communities central to conservation	15, 10, 8-2-1, 11, 12, 14
39	Deep below the surface, boreholes offer clues to past warming in the Western Ghats	13, 15, 9, 6, 2, 8-1, 3
40	[Commentary] Why the plane could, yet the country can't, run on biofuel?	7, 9, 13, 2, 8-1, 14, 15, 12, 9
41	India's first two 'Tsunami Ready' villages	11, 10, 14, 15, 2, 3
42	How Rhizophora mangroves on Car Nicobar islands fought back a rapid sea-level rise in 2004 tsunami	15, 14, 13
43	Reverse migration cheers up agricultural sector in villages	8, 2, 1, 3, 10, 5, 15, 9, 12
44	Splintered habitats may imperil egg-carrying butterflies	15, 11, 2, 3
45	Bat call library for the western Himalayas takes wing	15, 13
46	Sundarbans endangered as per IUCN's Red List of Ecosystems framework, cautious optimism advised	15, 14, 13, 8-2, 9, 12, 1, 10, 17
47	Nilgiris district collector says, environment before development	15, 12, 10, 11, 16, 3, 8-2-1, 6, 5
48	It takes a village – and an inspired leader – to protect Kutch's unique inland mangroves	15, 13, 11, 8-2-1, 14, 4
49	A budding botanist's quest for plant-indigenous community relations	15, 10, 11, 5, 12, 3,

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50	The shepherd who digs ponds for animals	15
51	Migratory openbill storks find safe haven in Andhra village	15, 11
52	A citizen's movement to protect wetlands emerges in Jammu and Kashmir	15, 11, 10
53	[Book Review] An ode to the young voices echoing the earth's call for help	15, 13, 14, 6, 12, 11, 4, 3, 10, 16
54	Beekeeping empowers women, brings in honey and lush kitchen gardens	5, 8, 1, 3, 4, 2, 15
55	How an engineer found his calling in conserving wetlands	15, 6, 12, 11, 8-2-1, 13
56	Sankar and his community dig canals to save Muthupet's mangroves	15, 8, 13, 2, 3, 1, 14, 11
57	Saving Darbhanga's wetlands from encroachment and apathy	15, 6, 11, 13, 12, 8-2-1, 10
58	A group of women protect Sindhudurg's mangroves through ecotourism	5, 15, 11, 8-2-1
59	Govt. NGO, citizens join hands in Maharashtra to conserve heritage trees	15, 2, 3, 11
60	Navi Mumbai couple fights to save a bird haven from becoming a golf course	15, 14, 11, 16
61	Invoking tradition and science to revive Meghalaya's ponds	6, 15, 11, 13, 8-2-1, 3
62	People power to clean up Pune river, bit by bit	15, 12, 11, 9
63	Story of a river bed, a geological marvel and community pride	15, 6, 11
64	Returning to traditional practices to save Vidarbha's 'Lake District'	15, 8-2-1, 5, 11, 4
65	The sparks of optimism in a challenging year	15, 8-2-1, 5, 11, 6, 13, 7
66	A birder involves community and authorities to protect Haiderpur wetland	15, 11, 6, 8-2-1, 12
67	A community movement saves a Goan heritage lake and brings hope	15, 6, 11, 16, 8-2-1, 14, 13
68	Women revive ponds for water security in Bundelkhand	5, 6, 11, 15, 8-2-1, 4, 10
69	A cluster of villages conserve shy blackbucks in Odisha's Ganjam	15, 11
70	World Wetlands Day: Celebrating the champions who protect our wetlands	15, 6, 11, 8-2-1, 5, 3
71	Chowkidar turns conservationist for winged friends in Chambal	15, 11, 8-2-1, 12
72	A community-created mangrove forest protects a village from eroding away	15, 11, 13, 10, 8-1-2
73	Genomics offer clues to how forest trees responded to the last Ice Age	15, 13, 16, 3, 7, 8-2-1, 11
74	The monks who protect the Bhagajang wetland	15, 11, 3, 10, 12, 6
75	Managing waste to save the wetlands of Himachal Pradesh	15, 11, 10, 12, 6, 8-2-1
76	Welcome to Tsomgo lake: Please don't litter	15, 11, 8-2-1, 12, 16, 6, 7
77	Community restores grasslands in Lamkani, making the village drought-resilient	15, 11, 6, 12, 8, 2, 1, 4
78	Indian "Green Oscar" winner Nuklu Phom envisions a Biodiversity Peace Corridor	15, 10, 11, 8-2-1, 13, 4
79	Shrimp farming gets a push in Uttar Pradesh as India looks to boost exports in fisheries sector	8-2-1
80	Two young women in Nagaland are leading a crusade against e-waste	15, 5, 12, 11, 9, 3, 8
81	Rural job scheme guarantees carbon sequestration	8-2-1, 15, 13, 10, 6, 16
82	How Sarmoli became a poster child of ecotourism in Uttarakhand	15, 11, 5, 8-2-1, 4, 3, 9, 10, 13, 12
83	Reviving the critically endangered gharials in Odisha	15, 12, 11
84	Desert areas of Rajasthan bloom under afforestation efforts	15, 11, 6, 12, 8-2-1, 4, 13
85	Are we overlooking the role of grasslands in mitigating climate change?	15, 13, 12, 11, 17
86	[Commentary] Nature-based solutions hold the key to transform our cities into resilient spaces	11, 13, 15, 12, 9, 6, 3, 16, 7
87	Microbial boost to Himalayan dry toilets can help mainstream organic farming	2, 8, 1, 6, 15, 11, 13, 12, 7
88	Clean tap water mission in Puri hopes to replenish groundwater	6, 3, 2, 12, 15, 9
89	Kerala's homegardens are a natural solution for climate change mitigation	13, 15, 2, 11, 8, 1, 6, 14, 12
90	[Interview] The glass ceiling has been shattered, says ZSI's first woman director	5, 15, 2, 10
91	Keeping alive a mangrove conservationist's legacy to protect Kerala coast	15, 10, 1, 4, 14, 13, 11, 9, 12, 2, 3, 8
92	Why tiger conservation efforts need genetic data	15, 17
93	Worshipping Waghoba: Faith meets conservation in Maharashtra where humans and leopards share space	15, 11, 10
94	Protecting a forest on a hill in Imphal	15, 11, 14, 13
95	Goa's pilot seaweed farm explores viability of this climate-smart algae	13, 2, 6, 3, 8, 14, 1, 10, 5
96	An indigenous community in Meghalaya offers lessons in climate resilience	13, 12, 2, 8-1, 11, 3, 10, 6, 4
97	[Photos] A Kashmir spring is protected by a local festival	15, 6, 11, 8-2-1
98	Integrated farming systems emerge as possible climate adaptation solution	13, 2, 8-1, 12, 11, 15
99	Solar power helps farmers irrigate fields in water-scarce Bastar	7, 6, 2, 8-1, 5, 10, 16, 13
100	Planted forests can tackle flood and erosion impacts along the Brahmaputra	15, 11, 8-2-1, 13, 10
101	Tackling agrobiodiversity loss in Odisha's Similipal protected area	15, 11, 2, 8, 1, 13, 6, 12
102	Surveying maps, roping in authorities and building a community for Bengaluru's lakes	6, 11, 15, 12
103	Aadhimalai, winner of UN Equator Prize from Nilgiris, offers a lesson in indigenous economics	5, 10, 8-2-1, 11, 13, 12, 4
104	In Arunachal's Sessa Orchid Sanctuary communities collaborate with forest officials to conserve orchids	15, 11, 10, 8-2-1
105	Addressing challenges in food systems with climate-smart agriculture	13, 7, 2, 6, 8, 1, 9, 5, 10, 16



106	Deepen understanding of Indian mangrove ecosystems, says mangrove scientist	15, 13, 14, 11, 8-2-1
107	Hope in the time of a pandemic: Positive news from 2021	15, 13, 11, 5, 6, 14, 8-2-1, 12,
108	Artificial nests for barn owls help farmers befriend these natural rodent killers	15, 2, 11
109	Clean energy startups innovate on products to aid farmers, rural areas	7, 6, 2, 13, 8-1, 16, 12, 5, 9
110	Interwoven in the living root bridges are stories of biodiversity and human interactions	15, 11, 10, 13, 4
111	Grasses spur mangroves to grow in an erosion-riddled Sundarbans patch	15, 13, 12
112	[Video] A Kerala village's quest towards carbon neutrality	13, 15, 12, 11, 16, 8-2-1, 5
113	Indian grasslands hold a treasure trove of endemic plants	15, 13
114	Saving elephants from train hits near Deepor beel in Assam	15, 11, 16, 12
115	[Photos] Lessons from a 74-year-old farmer who switched to organic sugarcane farming	13, 2, 1, 8, 11, 12
116	Sewing their way to a sustainable menstruation	5, 3, 11, 15, 12, 4
117	Successful model of development in tandem with mangrove restoration	15, 9, 11, 16, 13, 12, 8-2-1, 5, 10, 14, 3
118	Climate resilient millets boost livelihood opportunities for Odisha's tribal women	5, 8, 2, 1, 13, 10, 4
119	The reality of saving young mangroves in the Sundarbans	15, 13, 5
120	Pune citizens recycle clay from Ganesha idols to minimise impacts of clay mining	15, 3, 11, 12, 6
121	Longwood Shola forest is a water source for villages in the Nilgiris, maintains biodiversity	15, 6, 2, 13, 12
122	Clouds, droughts and other elements of nature recur in Rajasthan's folk songs	11, 15, 2, 6, 5, 8-1
123	[Book Review] 'First Steps' tracks the beginnings of citizen science in India	15, 11
124	Urban farms offer a fresh perspective on managing kitchen waste and nurturing a community	11, 12, 2, 8, 1, 13, 10, 3
125	Nations adopt Global Biodiversity Framework amid concerns over watered-down targets	15, 14, 10, 17, 11, 16, 12, 13, 5, 2
126	To increase fish production, Odisha turns to cage aquaculture	2, 8, 1, 5
127	How an equitable model of irrigation is changing this drought-prone Maharashtra region	6, 2, 8, 1, 10, 12, 13
128	Hosur forest division runs campaign to collect illegal guns in a move to protect elephants	15, 16
129	Working with biomaterials to add to the sustainable energy mix	7, 3
130	India budgets for mangroves and wetlands	15, 16, 8-2-1, 11, 13, 12
131	[Interview] Scientist Ruth DeFries on deforestation: There isn't one driver, there's a different context in different places	15, 10, 12, 8, 2, 1, 7, 13
132	[Interview] Conservation scientist Joli Rumi Borah on integrating traditional knowledge in research	15, 11, 10, 8-2-1, 12, 16
133	[Video] Restoring the perennial Thamirabarani river with people power	15, 6, 8-2-1, 12, 9, 11

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