LOCAL ACTIONS, GLOBAL IMPACT: A STUDY TO EXPLORE WAYS TO INTEGRATE INDIGENOUS PRACTICES FOR CLIMATE CHANGE MITIGATION WITH REFERENCE TO INDIA

Shruti Pandit

Assistant Professor,

Thakur Ramnarayan College of Law, Dahisar (E), Mumbai-68, Maharashtra, India

Email ID: pshruti011@gmail.com

Phone: 9004281587

Tanisha Tapan Samanta

FYLLB Student

Thakur Ramnarayan College of Law, Dahisar (E), Mumbai-68, Maharashtra, India.

Email ID: tanishasamanta22@gmail.com

Phone: 8779989615

ABSTRACT

One of the prime issues which need urgent attention and the repercussions of which are being the news headline nowadays is the ***'Climate Change Crisis'****. Anthropogenic activities have played a key role in degrading the ecosystem. To mitigate the risks of climate change is not easy, unless efforts are made in multiple dimensions.*

States have a duty to safeguard the environment, forest and wildlife'[1] *and it is the* ***Fundamental Duty of the citizens to 'protect and improve the natural environment, including forests, rivers, lakes and wildlife'*** [2]*.*

Moreover, the much sidelined traditional or indigenous practices can be used for healing mother nature.

Hence, this research paper aims to highlight the necessity of concerted efforts of every individual to whom India is a home, to overcome the disastrous impacts of climate change by taking inspiration from invaluable indigenous knowledge and practices in India.

Several tribal communities across India possessing wide array of rich indigenous knowledge and performing sustainable practices have been highlighted and their esteemed importance of inclusion in the climate action plans and daily activities of people have been brought to one's attention. Moreover, case studies, case laws, statutes backing the rights of indigenous people and the challenges faced by them have been looked upon. To summarize, the present study answers the following:

- *Indigenous knowledge and practices, a gift to mitigate climate change.*
- *Curbing climate change, a collective and not an isolated effort.*

The research work aims to contribute to academic discussions and provide broader insights to environmentalists, policymakers, and legal experts to rectify the loopholes and fill in the gaps to address climate change by adopting indigenous measures to create a sustainable environment for all.

Keywords: sustainability, indigenous people, indigenous knowledge, indigenous practices, integration, local actions, climate change, mitigation, India

INTRODUCTION

"Nature is not a place to visit, it is home." - Gary Snyder

Few decades ago, climate change which had little or no importance, today, has become a pressing global issue causing alteration in the life patterns of humans and the flora and fauna.

Wildfires, melting glaciers, sudden shifts in weather patterns, etc. are some of the contemporary instances experienced round the globe.

India is already experiencing intense heatwaves in several states of India like Jharkhand, Maharashtra, West Bengal, Odisha, and Karnataka with temperatures exceeding 40 degrees

[1] Part IV, Directive Principles of State Policy, Article 48A, inserted in the Constitution of India, 1950 by the Forty-Second Amendment Act, 1976, S. 10 (w.e.f. 3-1-1997).
[2] Part IVA, Fundamental Duties, Article 51A(g), inserted in the Constitution of India, 1950 by the Forty-Second Amendment Act, 1976, S. 11 (w.e.f. 3-1-1977).

Celsius[3], smog, untimely rainfall, etc. In the year 2025, deadly rainfall and severe cloud bursts were experienced in most parts of India. Major cities like Mumbai, Pune and States like Karnataka, Kerala, Maharashtra are submerged due to record-breaking early-monsoons in May which typically experiences peak summer season in India.

Evidently, human actions like burning fossil fuels, deforestation, vehicles, factories and so on, are responsible for such hazardous Green House Gas (GHG) emissions adding up to health issues including death.

Such alarming signs indicate that it is the need of the hour for people to address the grave issue of climate change, together. World leaders are coming forward for mitigating climate change and climate action policies have been formulated like Paris Agreement 2015, Sustainable Development Goals (SDGs) targeted to be accomplished by the year 2030, net-zero emissions by 2050, etc. Legislations have been made to address climate change. However, the situation is worsening day-by-day.

It must be noted that, very few or no country has adopted the indigenous practices undertaken by the natives of that country to reduce climate change. Where no plans or policies are working and the world is stuck, there comes into picture the valuable indigenous knowledge.

Indigenous people who reside in the heart of nature, possess a plethora of indigenous knowledge, and have been preserving the ecosystem sustainably since their very existence. Passed down through generations these practices shall be of great assistance to curb climate change if incorporated with the local actions of citizens as well as in climate change policies. Yet, these traditional practices are often neglected in the modern era. This research paper aims to delve into the importance of indigenous knowledge and practices in climate change mitigation and how they can be integrated into daily activities of every individual to create a global impact, with special reference to India.

RESEARCH OBJECTIVES

- To evaluate the role of indigenous practices in climate change mitigation.
- To analyse the need for integrating local actions of citizens and indigenous practices.
- To scrutinize legal regulations advocating indigenous people and their knowledge in India.
- To explore case studies of indigenous communities and their practices in building a sustainable ecosystem.
- To recognize the constraints and advance solutions to create a global impact.

[3] "Severe heatwave grips multiple states in India; know why this is happening" *Times of India,* 2025, https://timesofindia.com/ (last visited Mar. 17, 2025).

METHODOLOGY

Present study is specific to India and does not cover regions outside India. Data has been collected from secondary sources like websites, magazines, journals, blogs, articles and more, after a thorough analysis. This research project has been undertaken with an aim to derive a deep analysis of the unrecognized Indian indigenous practices and their integration in everyday local activities to mitigate climate change. Citizen's role, legal recognition along with case studies are some of the factors highlighted in the paper. The findings of the study shall help to gain fruitful insights on traditional knowledge and practices and how they can be incorporated by the public at large to develop a sustainable future for all. Moreover, the research is designed using a mixed-method approach.

STATEMENT OF PROBLEM

In the contemporary times which is advanced than ever before, climate change seems to be a subject of great concern for survival of humanity. Despite upcoming technologies like AI, Carbon Capture and Storage (CCS) technologies, etc. mitigating climate emergency looks beyond human control. This indicates a loophole in employing measures to tackle the issue. Thus, much unexplored indigenous people, their knowledge and practices, who have expertise in worshipping nature and its resources, comes as a solution to fill the gap and address the crisis. Such practices can be integrated with local actions of individuals of a country, and with concerted efforts, the crisis can be mitigated.

It has also been observed that there is lack of study, investigating the tribal families and their rich expertise in co-existence with nature by using sustainable measures, especially in India. Therefore, research has been conducted in this field providing a descriptive and detailed analysis of the Indian tribal peoples and their vast indigenous knowledge, legal recognition given to them and challenges faced. The purpose of the study is to uphold the rights of indigenous families and encourage their voice to incorporate their invaluable knowledge in everyday practices of the Indian people as well as climate action plans thus curbing the disruptions caused due to climate change.

CURRENT SCENARIO OF CLIMATE CHANGE IN INDIA

1. **Heatwaves**

   In 2025, India experienced its earliest heatwaves during winter season (January to February) on Feb. 25, in Maharashtra and Goa. It was recorded as the hottest February in a century. 2024 marked as the warmest year since 1901, with a surge of 0.90 degrees Celsius above the average temperature[4]. A study titled, *'Surface temperature increase over India during 1980-2020 and future projections: Casual relationships between drivers and trends'* conducted by IIT Kharagpur stated that India's surface temperature

[4] "IMD says 2024 warmest year in India since 1901" *Economic Times*, 1/01/25, http://economictimes.com (19/03/2025)

has been speculated to rise by 1.1°C to 5.1°C by the year 2100.[5] Along with surface temperature, marine temperature shall accelerate too.

A study was conducted by IITM, Pune, from 1905-2020, which found out that, the India Ocean experienced a temperature warmer by 1.2℃ and is speculated to rise up to 1.7℃-3.8 ℃ from 2020-2100[6]. Such frequent heatwaves are a result of climate change in India leading to instances like the deadliest landslides in Wayanad, Kerala, rainfall bursts in desert areas of Rajasthan, droughts especially in rural parts of India, wildfires of Arunachal Pradesh and many such incidents[7].

2. **Biodiversity**

Around 40% of the flora is expected to shrink in the Himalayas, with its Western region showing a greater decline in comparison to the east. Increased sea temperatures are causing a biodiversity loss with coral reefs, mangroves, and other aquatic lives suffering. The diverse coral reefs serving as a biodiversity hotspot in Andaman and Nicobar Islands is a major source of income through tourism, are prone to bleaching due to coral mining, sewage disposal, etc. Polluted water has endangered species like Gangetic and Indus River dolphins, Gharial crocodiles, etc.

Vulnerable bird species like Indian Skimmer are affected due to climate change[8].

As per IUCN Red list and WWF, Bengal tiger, Nilgiri Tahr, Indian Bison, etc. are at risk of extinction[9]. Himalayan flora and fauna including snow leopards are threatened. The Western Ghats have experienced the largest impacts on its endemic species, for e.g. the Amphibian species are going extinct[10].

3. **Agriculture**

India is evidently known as an 'Agricultural country.' However, the *'annadatas'* are suffering primarily due to ecological imbalance. Farmers have to work in extreme heatwaves which has been a headline since past 3-4 years. Unseasonal monsoon patterns, cyclones and floods affect the growth of crops. Hence, due to such unfavourable effects of climate emergency, agricultural produce is expected to fall by 16%, i.e. 2.8% GDP loss by 2030[11]. This in turn shall affect the economic stability of the country and switch the youth from refraining to take up agriculture as an occupation.

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[5] Santanu Chowdhury, "IIT-Kharagpur study: India's surface temperature may increase by 1.1 to 5.1 deg Celsius by 2100" *Indian Express,* Feb 26, 2025, https://indianexpress.com/9012672/ (last visited on Feb. 27, 2025)

[6] K. Jacob, "Warming of Indian Ocean to accelerate: IITM study" *The Hindu newspaper*, updated – 02/05/24, https://www.thehindu.com/ (last visited on Mar. 19, 2025)

[7] Mansi, "Extreme weather will be your new normal in 2025: Here's why" *India Today*, published on 12/03/2025, https://www.indiatoday.in/ (last visited on Mar. 19, 2025).

[8] Shanker K. et al., "Biodiversity and Climate Change: An Indian Perspective" (2018).

[9] Cherry Gupta, "National endangered species day 2024: Top 10 endangered species in India" *Indian Express,* 26/02/25, https://indianexpress.com/ 9334364/ (27/02/25)

[10] Global Amphibian Assessment 2 (GAA2) report, https://www.wti.org.in/feature/leaping-towards-extinction-amphibians-face-a-global-crisis/ (last visited on Feb. 27, 2025)

[11] W. Andrea, "A third of India's economy relies on nature: here's why corporates need to invest more in natural climate solutions" *WEF*, 5/8/2024, http://www.weforum.org/ (last visited on 27/2/25)

4. **Floods**

La Nina and El Nino have caused sudden rise and fall in the rainfall patterns, respectively. The coastline has risen from approx. 7,516.6 kms in the year 1970 to 11,098.8 kms in 2024[12]. A part of Puducherry has shrunk by 10.4%. Untimely rainfall and flood have become a frequent issue since 2020 e.g. Maharashtra floods, 2021 in the regions of Chiplun and Mahad, Assam floods, 2022, Wayanad floods and landslides (2024) that took lives of at least 123 individuals, etc. [13] [14].

Contemporarily in 2025 massive rainfall is being experienced in the month of May, which is known for its peak summer season, and regarded as the hottest month of India. Several parts of India including big cities like Bangalore, Mumbai, etc. are flooded, causing deaths and water-logging issues. Mumbai experienced early monsoons of more than 200 mm of rainfall within 24 hours breaking all records[15].

5. **Increasing Sea Level**

A surge in level of the sea internationally is speculated at 0.52-1.00 m till year 2100[16]. The rate of surge in level of the sea on an average was 1.3 mm a year from 1901 to 1971, which eventually accelerated to 1.9 mm a year from 1971 to 2006 with a sharp increase to 3.7 mm each year from 2016 to 2018 and goes on rising in the years after[17]. More than 200M residents live within 50 km of the sea in India. Hence, clearly, this increase shall result in serious harm to the sensitive coastal communities.

The Eastern coast of India i.e. Bay of Bengal, particularly the low-lying Ganges-Brahmaputra delta (world's largest delta), which is regarded as one of the most sensitive coastlines across the globe, is prone to witness disastrous storms, cyclones and floods on a frequent basis along with such sea level rise[18]. Birds, who are provided habitat by wetlands, may suffer due to hike in sea level. The intensity and frequency of cyclones are predicted to rise in the future.

6. **Air Pollution**

India's ranking is 3rd internationally with regards to air pollution having an average annual particulate matter of 2.5[19]. Out of 20 cities, 13 of the globe's most polluted cities lie in India itself[20]. Delhi is the most polluted capital in the world and Byrnihat,

[12] As per report of Ministry of Ports, Shipping and Waterways (2025), length of coastline of India.
[13] Umamaheshwara Rao, "MHA: India's recalculated coastline up 48% in years." *Times of India*, updated 4/01/2025, https://timesofindia.com/mha-indias-recalculated-coastline-up-48-in-53-years/ (last visited on March 4, 2025).
[14] https://en.wikipedia.org/wiki/Floods_in_India
[15] Snehal Mutha, "Mumbai breaks record, receives highest rainfall in May" *The Hindu*, updated on May 27, 2025, available at https://www.thehindu.com/ article69621953.ece last visited on May 29, 2025)
[16] As per research report of IPCC.
[17] *Government of India, Ministry of Environment, Forest and Climate Change*, p. no. 1, http://sansad.in/loksabhaquestions/annex/1714/ (last visited on May 29. 2025)
[18] Shetye et al. (1991)
[19] https://www.iqair.com/india (last visited on Feb. 27, 2025).
[20] "13 of world's 20 most polluted cities in India; Delhi most polluted capital: Report" *The Hindu newspaper*, 11/03/2025, http://www.thehindu.com/article69316060.ece (last visited on March 19, 2025)

Meghalaya is ranked world's most polluted city.[21] They can cause serious health problems from respiratory diseases to cancer. Annually, 2 million deaths are caused due to air pollution[22]. One of the main reasons for such rise in pollution is emissions from vehicle. Due to increase in income supporting an upliftment in the standard of living of the Indian people, almost every household owns at least a vehicle. Some also own more than one car. Being the world's most populated country, the number of vehicles on road in each state is huge, thereby emitting harmful gases like CO_2 and CO in the air.

E.g., ***The Taj Trapezium case***[23] drew attention to the deteriorating effect of air pollution in Agra on the UNESCO World Heritage site, Taj Mahal. The white marble of the monument was turning yellow along with brown and black spots. Vehicular emissions like Carbon Monoxide (CO), hazardous industries, iron, rubber and brick factories, engineering industries, glass industry at Firozabad, operation of Mathura refinery releasing Sulphur dioxide (SO_2), etc. located in the *Taj Trapezium Zone (TTZ)* which is an area of about 10,400 km^2 in the vicinity of Taj Mahal as established by the Supreme Court of India for safeguarding the monument from pollution[24]. All the abovementioned factors together were leading to acid rain and toxic emissions into the atmosphere that amounted to be the main sources of pollutants harming the white marble of the monument[25] [26].

INDIGENOUS PRACTICES

'Guardians of Nature' as they are addressed, indigenous people who are closely connected to the ecosystem, have developed fruitful insights on co-existence with nature sustainably. Such priceless information passed down through generations, serves as an innovative tool to resolve the danger of climate change, that can help make a global impact, part by part. Such practices should be integrated with the contemporary times by including them in the everyday activities of the citizens. For instance, home gardening, water conservation, practicing afforestation, etc. If households across India adopt them, it can make a big difference not just in India but also set an example globally!

Highlighted below is a detailed explanation on some of the indigenous people hailing from various parts of India and their innovative traditional practices to tackle climate change:

- **In the lap of Mother Nature: Co-existence**

  'Soligas' are forest-dwellers co-existing peacefully with tigers and elephants in the Bilgiri hills, Karnataka for centuries. The term 'Soligas' can be translated as 'children

[21] World AQR, 2024, Swiss Air Tech. Co.

[22] "Air pollution causes over 2 million deaths annually in India: BMJ study" *The Hindu*, Dec. 01, 2023, https://www.thehindu.com/ article67590177.ece (last visited on Feb. 27, 2025).

[23] M.C. Mehta vs Union of India and Ors. (AIR 1997 2 SCC 353).

[24] http://www.ttzagra.com/ (last visited on May 21, 2025)

[25] https://indiankanoon.org/doc/1964392/ (last visited on May 21, 2025).

[26] For more refer, M.C. Mehta vs Union of India & Ors. (2002 AIR SCW 1633).

of bamboo' which depicts their inter-connectedness with mother nature[27]. They predict rainfall by listening to bird calls and noticing their flying patterns. They keep themselves safe around animals by identifying their sounds and actions. By practicing shifting cultivation and gathering resources of the forest, their earn their income. Furthermore, they worship nature and protect other beings by reserving resources for them as well. For e.g., instead of gathering all the honey, they leave some for the animals.

This peaceful relationship that the tribal community has developed with animals and the way they have managed the region of Bilgiri have provided the public at large with clean air and water, reducing greenhouse gas effects, eliminating soil erosion, and mitigating climate change. It therefore stands very important to transfer such bunch of knowledge to future generations in order to avoid human-animal conflicts and conserve the environment in a better way![28]

- **Sustainable Agriculture**

The ***'Apatani tribes'*** from the Eastern Himalayas execute wet as well as terraced agriculture, rice-cum-fish farming using *ragi* and proper irrigation techniques using well-constructed canals connected to bamboo or pinewood pipe. They possess age-old knowledge about traditional rice cultivation. The whole cultivation technique is employed using organic ways without any artificial soil supplements. Apart from this, they also advocate for large-scale community participation including collective farming and agro-biodiversity.

The ***'Lahaula tribes'*** in the Western Himalayas exhibit commendable agro-biodiversity techniques like ice-water harvesting, mixed agro-livestock methods and combinatorial cultivation of traditional crops and cash crops. Organic manure is made using kitchen waste, livestock manure, night soil, etc. in a composting devised specifically for this purpose. Crop rotation, is commonly practiced for soil enrichment. Traditional medicinal plants and herbs are cultivated for more farm productivity. These methods help the tribal community to not only survive the extreme cold weather conditions but also generate revenue out of it.

The ***'Dongria Kondh tribes'*** from dry Deciduous Eastern Ghats follow organic farming and mixed-crop cultivation. They have innovated an agricultural technique of growing 80 multiple varieties of crops like paddy, pulses, millets, oil-seeds, etc., simultaneously. They cultivate upland paddy varieties that consume less water. No chemical pesticides are utilised thereby supporting environmental sustainability.

Similarly, in the Western Ghats and the Niligiri hills, the ***'Irular tribes'*** use pesticides made from native plants like neem, babul, etc. They undertake *11 seed preservation methods and 16 methods of pesticides using plants*. Seeds like millets are stored under deep soil (covered by cow dung). It can be preserved till a year; rice grains are reposited with aromatic herbs developed locally in a mud house, etc. They also have indigenous

[27] "Soliga Tribes" *Drishti*, http://www.drishti.com/current-affairs/soliga-tribes (last visited on march 20, 2025)

[28] RK Sugoor, Lopamudra Das, "From peaks to valleys: A holistic exploration of Western Ghats" *Yojana*, p.no. 18.

knowledge about cross-breeding thus developing genetically modified crops aligning to the indigenous patterns. Studying the behaviour of ants, sheep, etc. they forecast weather. They believe phenomena like evening rainbow, cloudiness in the morning, as indicators of rainfall whereas dense fog suggest of no rainfall in the region[29] [30].

- **Weather Forecasting**

The ***'Bodos'*** in North-East India predict rainfall using flying pattern of insects. Usually termites stay under the soil, they come out to fly especially prior to rainfall. Insects like crickets sing during monsoon. It is believed that, less croaking sound of frog calls low rainfall and huge croaks invite heavy rainfall. Ants tend to shift their eggs and food resources to higher land implying occurrence of heavy monsoon period. Mosquitoes lay eggs in cow dung indicating prolonged rainfall. If the swarm of bees fly to the north, it is seen as a sign of approaching rainfall. As against this, if they fly to the south, it indicates summer season ahead. Bodos also observe actions of birds to indicate weather patterns. For instance, arrival of spring season is determined by the singing of Koel whereas, sunny days are speculated by singing of Dove bird early in the morning. Likewise, chirping of stork calls for rainy days and fowls climbing on to the roofs of the houses relate to the incoming floods. If a peacock cries sitting on the highest branch of a tree, then it is considered sunny days but if it cries sitting on the lowest branch, then there will be rainfall. As per the Bodos, animals also play a vital role here. For e.g., cows mowing in their shed predicts rainfall. Also, if the sky appears to be red in the evening, then Bodos believe that there will be rainfall the next day, dark clouds coming from the west, states thunderstorm and rainfall. If the mango trees blossom with many flowers and fruits, it signifies heavy rainfall along with hailstorm and windstorm when jackfruit trees bear more fruits[31].

When ants start making small mounds beside their nests, the ***'Toda tribe'*** from Niligiri hills, Tamil Nadu expect monsoon.

Apart from this, the ***'Jarawa tribe'*** residing in Andaman and Nicobar Islands use an innovative and tradition method of anticipating the strength of cyclones by scrutinizing the actions of fishes. It indicates a cyclone when fishes swim near the shoreline[32].

- **Sustainable Food Practices**

Indigenous food systems comprise of locally available resources, unprocessed food items and minimal or no use of technology. Such food systems are sustainable and highly nutritional, and hold the potential to eradicate hunger, solve the issue of

[29] Balaji M., "Harnessing indigenous wisdom for climate resilience: Insights from Indian communities" *Climate Connection,* Feb. 20, 2024, http://climateconnection.org.in/ (last visited on Feb. 28, 2025)

[30] A. Amitava, et al. "Climate change resilient agricultural practices: A learning experience from indigenous communities over India." (2022), http://doi.org/10.1371/journal.pstr.0000022 (last visited March 1, 2025)

[31] Wary, Jaysagar. "Weather forecasting: a study on the indigenous knowledge prevalent among the bodos tribe of North East India"Vol. 7, issue 28, ISSN - 2348-2397, p. no. 107, Sept. 2021.

[32] Dr. Eilia Jafar, "Storms, droughts, displacement: How climate change is hitting India's tribes" *India Today,* updated Feb. 15, 2025, https://www.indiatoday.in/ 2680088-2025-02-15 (last visited March 2, 2025)

malnutrition, as well as protect the environment[33]. For e.g., the ***'Khasi Community'*** of Meghalaya practice sustainable food system using jhum (shifting cultivation) without chemicals and home gardens. Nearly 63 plant species like roots, cereals, legumes, fruits, vegetables, etc. of different varieties are grown using kitchen gardens and jhum cultivation. In the slash and burn cultivation, only ash is used by burning biomass obtained after clearing the land for the purpose of cultivation[34].

- **Management of Ecology**

The ***'Bishnoi community'*** from Thar desert region of Rajasthan is a religious tribal community that sets an example of preservation of nature by holding the religious value as the foundation. Measures like water conservation, preserving flora and fauna and practicing afforestation are undertaken by them. They manage the ecosystem based on laws developed by them using their religious beliefs[35]. They have developed public care centres for animals, to cure the sick, injured and vulnerable fauna. Moreover, they have established regulatory systems to plant Khejri trees to prevent desertification and monitor deforestation activities, if any in the area. Even during times of scarcity of water, it is ensured that the sacred animals are provided enough water for their survival. Once in 1730 it so happened that, the King of Jodhpur sent his men to chop-off the sacred *Khejri trees*, however, *Amrita Devi* belonging to the Bishnoi community hugged one of the trees while exclaiming, *"A chopped head is cheaper than a chopped tree."* She was followed by 362 other men, women and children who sacrificed their lives to protect the religious tree. This incident is known in history as *'Khejrali Massacre'*[36]. The Bishnoi community till this date safeguard religious trees and religious animals like *Blackbuck*[37].

The ***'Kadar tribes'*** from Kerala and Tamil Nadu are known for their sustainable management practices supporting climate resilience. They use bamboo for construction, protect the resources of their region through cultural institutions created by them[38].

[33] K. Ridhima, S. Manisha et al., "Co-Existence of Sustainable indigenous food systems and poor nutritional status in Ho indigenous community, India: an exploratory study" *Environment Res. Letters*, 19 (May 2024), 064033 (last visited on June 1, 2025)

[34] Sahana Ghosh, "Sustainable food" *Scroll,* Nov. 07, 2021, https://scroll.com/article/1009851/ (last visited on March 2, 2025)

[35] Dr. Eilia Jafar, "Storms, droughts, displacement: How climate change is hitting India's tribes" *India Today,* updated 15/02/2025, http://www.indiatoday.com/ 2680088 (last visited March 2, 2025)

[36] S. Mukul, "When 300 Bishnois sacrificed their lives to save trees from a Maharaja" *India Today*, updated 18/10/2024, http://www.indiatoday.com/ 2619054-2024-10-18 (last visited on June 01, 2025)

[37] N. Farhat et al., "The Bishnoi: Revisiting Religious Environmentalism and Traditional Forest and Wildlife Management in the Thar Desert." *Env. and Society Portal* (2024), 10, R. C. C. for Env. & Society. DOI:10.5282/rcc/9846, ISSN 2199-3408.

[38] K. Divya, "Conservation—a contested story: the State and the Kadar Adivasis, India" 16/1 Law, Env. & Dev. Journal, 2020, 20, https://www.lead-journal.org/a1602.pdf (last visited on June 01, 2025)

UNITY IS STRENGTH: ROLE OF EVERY INDIVIDUAL

It shall be the fundamental right of a person to live in a wholesome environment[39] [40]. The ***State is mandated to protect and improve the environment and safeguard forests and wildlife***[41] [42]. Additionally, it is the ***Fundamental Duty of the citizens to conserve the natural environment and other living creatures including lakes, rivers, wildlife and to have compassion for them***[43] [44]. Therefore, it shall be of utmost importance for every citizen to play a role to address the disastrous issue.

Going back in time, during the ancient period, *'Kautilya's Arthashastra'* included laws on environment protection. People worshipped nature including its resources as their *'Dharma'* or duty.

Hence, it is very clear that the Indian culture as well as the existing laws make it a duty of every individual to unite and make efforts to adapt to the nature and practice climate resilience[45]. Taking lessons from the same and abiding by the quote, ***"Unity is Strength"***, climate change must be addressed in a unified manner with people coming forward at large, making contributions, either small or big, to achieve a sustainable and green future for all.

INTEGRATING INDIGENOUS PRACTICES WITH DAY-TO-DAY ACTIVITIES

"From afar, many urban present-day issues seem novel and unique with no historical reference solutions to look at, but the reality is very different." – Anonymous

Despite several conventions, meetings and initiatives of the leaders globally, every other day some instance of climate change can be seen as a breaking news. This indicates that people are lacking in formulating the right sustainable policies and day-by-day the issue is going out of hand.

As a solution to this, the often-neglected rich indigenous knowledge and practices can be incorporated in the climate change mitigation plans as well as in the daily activities of the common individuals. For instance, home gardens and kitchen gardens can be created, weather prediction techniques can be used, organic farming employing the techniques adopted by the tribal communities can be practiced and many more This will only heal mother nature and

[39] According to Art. 14 & Article 21 of the Constitution of India, 1950
[40] M.C. Mehta vs Union of India (AIR 1987 SUPREME COURT 1086).
[41] Part IV of Constitution of India, Directive Principles of State Policy, Forty-Second Amendment Act, 1976, S. 10.
[42] For more see, Sher Singh v. State of Himachal Pradesh and Ors. (2014), available at https://indiankanoon.org/doc/194586080/, last visited on May 29th, 2025.
[43] Part IVA of Constitution of India, under Art. 51A(g), Fundamental Duties, Forty-Second Amendment Act, 1976, s. 11.
[44] For more see, Animal Welfare Board of India v. A. Nagaraja and Ors. (AIR 2014 7 SCC 547).
[45] Dr. Paramjit J. et al., *Environment Protection, Sustainable Development and the Law, (Allahabad Law Agency, Haryana, 2017).*

overcome the climate crisis thereby reducing the number of deaths caused due to climate change.

LAWS PROTECTING INDIGENOUS COMMUNITIES

1. **Forest Rights Act, 2006**

   Forest Rights Act, 2006[46] established by ***Ministry of Tribal Affairs*** officially recognized the rights of vulnerable indigenous families to exercise their accessibility and control over forest produce within their territorial boundaries[47]. The act was later amended in 2012 which was recognized as ***'Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Amendment Rules'***. It gave the communities a chance to share their ideas and techniques for ecological sustentation[48]. It facilitated social engagement making their voices reach the general public at large. Such exchange of information serves as a great help to make people aware of addressing such hazardous issue. Moreover, it is a step towards bringing the natives in the mainstream by valuing their existence and bunch of knowledge.

2. **Panchayats (Extension to Scheduled Areas) Act, 1996**

   It acknowledges enhancing sovereignty of indigenous people to preserve mother nature and its produce. It also strives to protect their varied ethnicity[49]. This encourages transfer of traditional knowledge to the upcoming generations and nurture it. These practices shall play a big role to adapt to the climate crisis.

JUDICIAL RECOGNITION

1. ***Narmada Bachao Andolan v. Union of India & Others***[50]
   - **Facts:** *Sardar Sarovar dam* was proposed to be constructed called on *Rewa river* affecting coastal communities residing in Madhya Pradesh & Gujarat. This raised issues focusing on the management, utility and ecological impacts on the river. Thus, for resolving the said issue, a Tribunal was established by the Government under ***Inter-State River Water Disputes Act, 1956***. The Tribunal formulated the *Narmada Control Authority* and a *Review Committee* to keep a check on the development project. In addition to that, another group comprising of environmentalists assisted NCA to identify the impacts of the developmental

[46] For more see, Adivasi Kanikkar Samyuktha Sangham (AKSS) and Anr. v. Union of India and Ors. (2019 SCC OnLine Ker 817), http://www.scconline.com/ (last visited on May 29, 2025)
[47] MoTA, https://tribal.nic.in/FRA.aspx#. (last visited on March 4, 2025)
[48] K. Kumar, *Sacred landscapes, Indigenous Knowledge and Ethno-culture in Natural Resource Management, advances in Geographical and Environmental Sci.,* p. no. 215, Delhi, ISBN 978-981-97-4206-6
[49] *Governance, Resources & Livelihoods of Adivasis in India: Implementation of Panchayats (Extension to Scheduled Areas) Act, 1996 & Forest Rights Act*, S.R. Sankaran Chair (National Seminar), Held on 18-19 NOVEMBER, 2016 in Hyderabad, published by SRSC National Institute of Rural Development & Panchayati Raj, http://nirdpr.org.in/srsc-pub-290618.pdf (last visited on March 4, 2025)
[50] AIR 2000 SC 3751

project on the ecosystem and eliminate them. However, as the construction advanced, petitions were filed under ***Article 21 of Indian Constitution and 107th ILO Convention***, regarding the treatment of catchment area and on time rehabilitation programmes. Moreover, the people residing in the nearby areas were getting affected due to this project.

- **Issues:**
  i. Whether the provisions declared by Ministry of Environment abided by?
  ii. Whether the project was not subject to thorough research and analysis of the ecological impact it may lead to?

- **Judgement:** The Apex Court highlighted a balanced approach. It upheld the need to construct the dam sustainably by abiding according to the rules decided. It permitted construction up to 90 meters above level of the river, provided that, any further change shall be subject to prior approval from the Environmental Group.
  The Court acknowledged the States suffering from water scarcity that leads to infringement of ***Article 21*** and emphasized that rivers like Narmada hold the capacity to eliminate such obstacles of the people, especially those belonging to the dry regions.
  Furthermore, the Court drew attention towards inclusivity and valuing rights of indigenous groups thereby ensuring that they are entitled to the benefits of proper rehabilitation, access to services like electricity and water through such developmental projects. Hence, this case recognised the need for maintaining equilibrium between development and ecology encompassing the well-being of the natives and practicing social inclusivity[51].

2. ***M.K. Ranjitsinh & Others v. Union of India & Others***[52]
   - **Facts:** Great Indian Bustard (hereinafter referred to as GIB) which is Rajasthan's State bird, is critically endangered as per IUCN red list[53], probably due to factors revolving around climate change, pollution, etc. Apart from these overhead power lines have also been the reason for a decline in their number since GIB's weak vision along with huge size makes them to collide with the transmission lines.
     Hence, a PIL was filed in the Apex Court to seek directions to install bird diverters, dismantle power lines, etc. required for framing policies to to stop such decline of GIBs and conserve it.
     An interim order was delivered by the Court on *April 19, 2021*, that imposed restrictions on construction of overhead transmission lines covering a large area of 99,000 km^2. It further mandated for underground set-up of the transmission lines

[51] https://indiankanoon.org/doc/1938608/
[52] 2024 INSC 280
[53] "State bird of Rajasthan: Know Everything at One Place" published on Aug 19, 2022 https://animalplanetory.com/state-bird-of-rajasthan-know-everything-at-one-place/

where such birds were found in huge number. Moreover, bird diverters were ordered to be installed.

- **Issue:** Whether an equilibrium can be maintained in protecting the Great Indian Bustard and curbing climate degradation using Indian Constitutional provisions, laws and global policies?

- **Judgement:** The Court upholding on the seriousness of the issue emphasised on using green or renewable energy like solar electricity. It observed the pressing need to combat climate change for which India has made contribution by participating in various global conventions, as for instance, the Government has set up a plan to attain *500 GW by 2030*[54]. For the first time, ***Article 21*** was expanded to include ***'Right to a Healthy and Safe Environment'*** and ***'Right to be Free from Disastrous Impacts of Climate Change'***. The need and significance of solar energy was highlighted by the Apex Court as a crucial measure for a worldwide shift towards sustainable fuels.
  Taking into consideration the above-stated facts, the Court recalling its restrictive injunction decree dated 18/04/21, observed that ceasing the introduction of power lines for dissemination of solar electricity in a wide region of around 99,000 km^2 would not address the root cause of reducing number of the GIBs. Moreover, there are multiple technical obstacles in undergrounding these lines. The committee was ordered to submit a report by 31/07/2024.
  Furthermore, it directed the State to investigate the matter with immediate action and formulate protocols to conserve GIBs. It held that State is bound by the duty to ensure that flora and fauna is not harmed in such developmental projects. State was also ordered to meet its targets decided under international conventions like curbing climate change, climate resilience and ensuring a sustainable environment by using indigenous conservation practices[55] [56].

CASE STUDIES

a. Mendha Lekha village

Mendha Lekha is a forest area encompassing deciduous trees in Gadchiroli district of Maharashtra. ***Gond tribes*** find the area as their home. Their survival is heavily dependent on subsistence method of farming and variety of forest produce including food, fuel, timber, and fodder. Nearly 80% of the village area is covered by green and legally controlled by the villagers. Their earnings primarily are dependent upon gathering non-timber forest produce and labour work. However, this ecologically diverse land has been through years of struggle for its present-day development. It happened so, a development project was proposed by the government for constructing

[54] *PIB Delhi*, posted on April 05, 2023, https://www.pib.gov.in/1913789 (last visited on May 29, 2025)
[55] https://indiankanoon.org/doc/128036238
[56] M. Shreshtha, "M. K. Ranjitsinh v. Union of India: The Supreme Court's very own Sophie's Choice moment" *Bar and Bench*,2024, http://www.barandbench.com/ (last visited on March 22, 2025)

hydropower dams. The dams would have submerged widespread green cover displacing thousands of tribals from the region.

In 1985, a march for Independence was initiated by the villagers against the project. People like *Devaji Tofa* performed a leading role in the developmental dam project. The agenda for discussions centred majorly on collaborative accountability and establishing a regulatory system for the use of natural produce.

The movement triumphed due to transparent and democratic process of decision making and thereby led to establishment of a forest conservation and regulatory management system. Since then, village institutions like *Gram Sabha, Mahila Mandal, Abhyas Gats* have been collectively conserving the flora and fauna of the village thus creating employment opportunities, and enhancing ecological and social balance. To execute the rules of the *Gram Sabha*, a *Van Suraksha Samiti* was formulated. Additionally, a *Joint Forest Management (JFM) initiative* was introduced that handles over deteriorated land and forest areas to natives for developing rich timber produce.

On *28/08/09*, ***Mendha*** was lawfully recognized as *Community Forest Resource (CFR)* under ***Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006***. It is a pioneering village in India to enjoy the liberty to use, control and conserve the green cover within its boundary. With such development, the Mendha village made much progress in multiple facets be it social, ecological, or economical and has established self-rule to conserve their forest for future generations[57] [58] [59].

b. <u>Niyamgiri Case</u>

The ***Niyamgiri case (2013)***[60] is a landmark judgement pressing on environmental justice by upholding the rights of the indigenous families of that zone. Here, ***Dongria Kondh tribes*** hailing from Odisha claimed their rights over the land of Niyamgiri hills and its resources. *Vedanta*, mining company from London, in partnership with the Odisha government proposed to construct a bauxite mining project in the region. The company had a full-fledged plan to build an open-cast mine which would have destroyed the *Vamsadhara river* that is the only source of drinking water to them that was also being utilised for irrigation. Eventually, it would have resulted to the displacement of Dongria Kondh tribal community from the region.

The community believed the hill range to be sacred, created by *Niyam Raja*. Passed down through generations, the people possess wide-scale information of flora and fauna. Over centuries, the tribal group has set an example to maintain the rich

[57] "The forest of Mendha-Lekha – ICCA in Maharashtra, India," http://www.iccaconsortium.org/2018/03/26/ (last visited on March 10, 2025).

[58] *Mendha Lekha Village*, Kalpavriksha Environmental Action Group, http://kalpavriksh.org/ (last visited on March 10, 2025).

[59] Neema Pathak Broome, "Production of Best Practices and Lessons Learned Booklet: October –January 2003" October 30, 2003, https://www.iccaconsortium.org/Mendha-for-CBDshort05122003as-sent-to-Rosario.pdf (last visited on March 22, 2025).

[60] Orissa Mining Corporation Ltd. vs Ministry of Environment and Forest and Others (Civil Writ Petition No. 180 of 2011).

biodiverse area which is a home to animals like *tigers, leopards and giant squirrels*. Hence, this project hampered the tribal community's sacred relationship with the Niyamgiri hills and its abundant resources.

Prior acquiring mining permission, Vedanta constructed refinery and conveyor belt that aimed to transfer the *Bauxite* down from the hills to the refinery in Lanjigarh. The government provided assent for the project following the condition that no green cover should be hampered; further the declaration was 'patently false'– Vedanta took control over around 60 hectares of village forest, that helped to maintain adequate oxygen level. To add upon this, the refinery completely disrupted Kinari village forcing the ***Majhi Kondh*** families to leave the region and move to a rehab colony. It was witnessed by the residents of the region that a toxic effluent called the *red mud* that is the refinery's primary waste discharge substance got released into the Vamsadhara river due to which it was also destroyed.

However, people united and objected against the company not just locally but also nationally, and internationally. The case was heard by the Hon'ble Supreme Court of India who recognized the spiritual and cultural rights of the natives. It directed for a referendum to be constituted among the impacted Gram Sabhas and to have the consent on the project from the tribal families. The Court also emphasized the government to ensure the rights of indigenous communities are not sidelined in such developmental projects and they must be given a platform to express themselves.

After much struggle, locally and globally, finally the mining activities were withdrawn and the tribal community got back their access to their sacred hill. The case received much attention from celebrities and international leaders and the efforts of the tribal people were applauded by all[61] [62].

c. ***Adivasi Movement in Silent Valley (Kerala)***

Between 1970s-1980s a pivotal environment protection effort known as the ***'Silent Valley Movement'*** was undertaken. It laid the foundation of amendments in the legal system of India in term of environment protection. The facts of the case state that Silent Valley which is an environmentally rich tropical rainforest located in Palakkad district of Kerala, was endangered by a developmental project. The *Kerala State Electricity Board* proposed to construct a hydropower plant over *Kunthipuzha river* which flows through the Silent Valley Forest. The project although was necessary for energy generation for the residents of Kerala, it had the potency to hamper the rich ecology of the forest which served as a home to several endangered species like *Lion-tailed macaque* (a species specifically found in the valley), *sambar*, *Niligiri Wood pigeon*, and many more[63]. There were human settlements as well living in the region for years. These people (natives) included tribes such as ***Irula, Kurumba***, etc. who were

[61] S. K., "Niyamgiri: 10 years since India's first environmental referendum" *Down to Earth*, 19/04/23, http://www.downtoearth.org.in/88850, (March 22, 2025)

[62] https://www.survivalinternational.org/dongria (March 22, 2025)

[63] "Silent Valley National Park", *Kerala Tourism*, https://www.keralatourism.org/malabar/silent-valley-national-park/39# (last visited on May 28, 2025)

responsible to guarding the biodiversity of the forest[64]. Locals in cooperation with other environmentalists who were concerned about the loss of the region's distinctive environmental conditions and dislocation of indigenous groups begun a drive to cease the plan from flooding the Silent Valley Reserve Forest and harming its ecology and the livelihoods of the tribal people. The project intended to flood the Reserve Forest; thus, a movement was launched by the locals in collaboration to other environmentalists concerned about the loss of the area's unique ecosystem and the displacement of indigenous communities to prohibit it from advancing. A task force came to be established under the guidance of *Vice President of World Wildlife Fund India*, which investigated about the project for more than a year through surveys that concluded about cessation of it. As per the report submitted by the task force, the construction of hydroelectric dam shall seriously harm the dense vegetation and its resources. The task force committee also suggested that in case the dam is required to be constructed, then the government must also adhere to the 17 recommendations highlighted in the said report.

In 1980, the then *Prime Minister Indira Gandhi* interrupted, thereby responding to the increasing environmental impacts in the abovementioned region. Finally, the project was withdrawn in 1983 and Silent Valley was declared a *National Park*, safeguarding it from future exploitation.

In this way, the Silent Valley Movement proved to be a success that drew attention towards environmental crisis and spread awareness about tribal communities surviving in those regions and the need to secure their rights. A *National Committee for Environmental Planning and Coordination* came into being to scrutinize negative implications on the environment of development projects. Furthermore, the *Environmental Protection Act, 1986*, was framed as a result of the movement including provisions for conservation and improvement of environment and avoiding ecological imbalance. Clearly, India's environmental management policies were given a new direction by the happening of this Movement[65].

d. Baiga tribes: The Forest Fighters (Madhya Pradesh)

Baiga tribe from Dindori district, Madhya Pradesh, a Particularly Vulnerable Tribal Group, is known for its thrive of protecting the green cover and achieving self-reliance in a period of 16 years. 110 Baiga tribal families united to conserve around 1,500 hectares of forest cover which has supported in the preservation of the entire biological variability, comprising of *43 leafy vegetables*, *13 forms of mushrooms*, *18 types of tuber plants*, *24 fruit variations*, *29 non-timber forest produces and 26 rare herbal species*[66].

[64] *Silent Valley National Park*, Ecology and Significance, http://silentvalley.gov.in/AboutThePark/Ecology (last visited on May 28, 2025)
[65] Sweta, "Silent Valley Movement, History, Significance and Result" *Study IQ*, 2024, https://www.studyiq.com/articles/silent-valley-movement/ (last visited on March 23, 2025)
[66] A. Singh, "The Forest Fighters: The tale of primitive Baiga tribe in Madhya Pradesh village" *New Indian Express*, Updated on 08/01/23, http://www.newindianexpress.com/good-news/2023/Jan/08/the-forest-fighters-the-tale-ofprimitive-baiga-tribe-in-madhya-pradesh-village-2535655.htm (last visited on March 23, 2025)

The Baiga tribe relies on forests for survival, using traditional knowledge to sustain themselves. Unfortunately, the Baiga tribes have been subject to social discrimination and isolation, thus infringing their Fundamental Rights. By the emergence of industrialization, the preserved surrounding environment was being harmed[67]. To overcome these issues, a movement was initiated to eliminate the depletion of the green cover leading to harmful impacts on biodiversity. Strict rules were formulated upon, like debarring non-natives to chop-off trees, following the Precautionary principle to prevent forest fires, etc.[68]. Moreover, the tribal group had a long struggle of nearly a century to get themselves recognized under the ***Forest Rights Act, 2006***. For the first time territorial rights were entitled under the Act. It safeguards their community rights over land, standard of living including their culture and lifestyle. To be more precise, not just the rights and self-rule of the Baiga tribes were recognized but also their traditional knowledge and practices received acknowledgement[69].

GLOBAL RECOGNITION OF INDIGENOUS PEOPLE

* **IPCC Reports**

  Inter-Governmental Panel on Climate Change (IPCC) has acknowledged the vulnerable indigenous groups and have stressed on adopting their extensive knowledge and practice about land-based mitigation and other adaptation techniques as well as draws attention towards the significance of opting them in climate action plans[70]. As per IPCC's latest Global Assessment Report, these practices *"can accelerate wide-scale behaviour changes consistent with adapting to and limiting global warming to 1.5 degrees Celsius"*[71].

* **Community-led climate initiatives in Latin America and Africa**

  These initiatives aim at employing climate adaptation and mitigation strategies like agroforestry, land management sustainably, etc., empowering locals to execute the same. Such measures can be undertaken in India and other nations as well to adopt climate resilience.

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[67] Dr. Chakali Bramhayya, "The status of human rights of Baiga tribes in Central India: Exploring the violation of human rights and the role of welfare policies in empowering Baiga tribes in Central India"Journal of Advances and Scholarly Researches in Allied Education, E-ISSN: 2230-7540,13, 2, 06.2017, https://ignited.in/index.php/ 6753/13309/33248 (last visited on March 23, 2025)

[68] S. Anuraag, "The Forest Fighters: The tale of primitive Baiga tribe in Madhya Pradesh village" *New Indian Express*, updated on 08 Jan 2023, http://www.newindianexpress.com/ 2535655.html (last visited on March 23, 2025)

[69] C. Anupam, "Baigas get home" *Down To Earth*, 2016, http://www.downtoearth.org.in/52666 (last visited on March 23, 2025)

[70] P. Shukla, E. C. Buendia et al., "Climate Change and Land: an IPCC special report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas fluxes in Terrestrial Ecosystem" *IPCC*, 2019, http://www.ipcc/ (last visited on March 17, 2025)

[71] G. Sahana et al., "IPCC report warns India likely to see more extreme weather events" *Mongabay*, 21, http://india.mongabay.com/2021/08/ (last visited on March 22,2025)

* **COP 26**
  During the ***United Nations Climate Summit at COP 26*** in Glasgow city in Scotland, indigenous practices were highlighted, and were seen as a solution to avert climate change or adapt to the same.

CHALLENGES

→ **Modernization**
Modernization is one of the reasons for degradation of the essence of indigenous knowledge and practices that has impacted its transmission across generations. These practices are seen to be known only among tribal people, whereas others are unaware of it much.

→ **Scientific Knowledge and Technology**
In this era of development, flourishing technology has taken over Indigenous Knowledge Systems, thus hampering credibility among people and reducing its scope of usage. For instance, today, common individuals have no idea about weather prediction (even though the native communities practice it) and completely rely on the scientific and technological systems for the same.

→ **Language Barriers**
Vulnerable traditional languages are improbable to be transferred by word of mouth. Such language barriers cause a restriction on the broader implementation of such practices[72].

→ **No Legal Recognition**
Quite a few legislations recognize the rights of indigenous people. This obstructs their enjoyment and rule over their land. Despite possessing expert knowledge about conservation of ecology, there are hardly any laws allowing them to put forward their opinion in climate action policies.

CONCLUSION

'Vasudhaiva Kutumbakam' that can be translated as, ***'The Whole World is One Family,'*** is a principle followed in India which not only includes preserving human relations, but extends beyond, to include Mother Nature and its resources as well[73]. It highlights the inter-dependency of humans and other living beings on planet Earth[74]. The said concept is followed by the

[72] Lutz et al., "Obstacles to implementing indigenous knowledge in climate change adaptation in Africa" 373 *Journal of Env. Management,* p.no. 3 (Table 3) (2025).
[73] K. K Arun, "The concept of Vasudhaiva Kutumbakam (The World is a Family): Insights from the Mahopanisad" *National Journal of Hindi and Sanskrit Research* (2023), ISSN: 2454-9177, p. 42
[74] K. K. Arun, "The concept of Vasudhaiva Kutumbakam (The World is a Family): Insights from the Mahopanisad" *National Journal of Hindi and Sanskrit Research* (2023), ISSN: 2454-9177, p. 43 Environmental Ethics.

indigenous people that has been passed down through generations. Their traditional practices like those of organic farming and co-existence with ecology as aforementioned, teach the world to curb environmental degradation and ecological imbalance.

Unfortunately, these communities frequently face threats due to industrialization and globalization. As a solution to this, government should carry out and sponsor investigation and research about the lost traditional practices to bring them into the limelight. Their rights and responsibilities must be backed legally to provide them a dignified life. Global collaborations can be made with the tribals to provide them a platform to acknowledge their ideas with the aim to include their knowledge in the climate action policies. This shall call for large scale recognition, backing by law, and community participation, thereby bridging the gap between indigenous knowledge and present climate change policies. NGOs must come forward to address the issue.

Moreover, in today's digital era, social media can be a great weapon to spread awareness and accelerate the transfer of indigenous knowledge from person to person. Climate change mitigation is not just the duty of the top-level authorities that is the Government, instead, it asks for ***'Unity'*** from individuals belonging to different parts of the globe, just how the indigenous people practice it. Their ways can be inculcated in local practices of every individual. Taking inspirations from the ***'Aptani'*** and ***'Lahaula' tribes***, sustainable agricultural methods can be employed by the farmers by going 'all organic'. Since the world is experiencing untimely severe weather conditions, people can learn weather prediction techniques just how the ***'Bodo'*** and the ***'Toda' tribes*** do. Instead of using chemical pesticides with various bad impacts, farmers can use pesticides made from commonly available plants like neem as followed by the ***'Irular' tribes***. Inspirations can be drawn from ***'Khasi community'*** in developing home/kitchen gardens ensuring sustainable food systems. Lessons can be taken from the ***'Soliga'*****, *'Bishnoi'* and *'Kadar tribes***' to worship mother nature and undertake sustainable management measures. Afforestation shall be practiced and biodiversity must be preserved.

Hence, every person should consider nature as part of their family. Just as we safeguard our dear and near ones, mother nature who has offered us bountiful resources, deserve to be safeguarded and handled with due care. Eventually, by carrying out sustainable practices, climate change will not be a crisis anymore.

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