



Unraveling India's Initiatives of Empowering Tribals for the Protection of the Environment

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Abstract. The unprecedented climate change at the global level has impacted on environmental crisis in India. Since, the 1950s, it has been noticed that human-made actions caused climate change. As a consequence of climate change, every year, a series of catastrophic cyclones/super cyclones occur in the Indian Ocean, causing severe havoc in the loss of property and the lives of thousands of people. Simultaneously, climate change also significantly impacted health, rainfall patterns, droughts, glacier melt, sea level rise, floods, intrusion of saltwater, agriculture production, food security, energy security, water security, the rise of temperature, migration, and conflict among a large number of populations. This scenario influences substantially of tribal livelihoods and impoverishes the economic condition of tribal communities in India. It also causes degradation of biodiversity and creates an imbalance in the ecosystem. It indicates an alarming bell for environmental scientists, policymakers, academicians, technocrats and for the government to ponder about the future of the tribal population in India. Such situations force the Government of India to adopt various strategies for policy measures to meet various challenges of climate change and to protect the lives and livelihoods of vulnerable tribal communities in the country. This study aims to understand and uncover the complexities of climate change by examining various root causes of environmental crises, and other manifestations of climate change. It unravels the issues of legislation and inadequate allocation of funds for the improvement of the environment. It also underscores the empowerment of tribals for the protection of the environment. This paper is based on secondary sources of data and follows the qualitative methods of research. The study finds that an integrated approach is needed for environmental governance, empowerment of tribal communities, and building a culture of resilience to environmental crises. It concludes by emphasizing the commitment of the government as well as the non-governmental organizations to the development of tribal communities and for the sustainable development of the environment.

Keywords: Environment, climate change, governance, empowerment of tribals, and sustainable development.

1 Introduction

Climate change has had an unprecedented effect on the environment since time immemorial. Since 1950, it has been significantly impacting the environment and ecology. Climate Change (CC) is a complex, multilateral problem that has serious consequences on various domains including the environment, economy and election (Adger, 2020). With the onset of liberalization, globalization, and privatization, the changing nature of climate has become a major issue for political debate and academic discussion. Academic scientific research suggests that necessary action taken on climate change will be effective in mitigating the catastrophic consequences of climate action. It is not feasible to interpret the precise effects of climate change. This is demonstrated by the growing recognition of the issue and the incorporation of climatic risks at the local and national levels of establishing policy (Ayers, 2014). Further, each State has its unique problems due to such climatic change depending on its geographical, topography, economic and socio-economic conditions. With the onset of industrialization, natural gases including carbon dioxide, and hydrochloride acid were regarded as crucial gases that are responsible for causing the greenhouse effect which ultimately resulted in CC (Murshed and Dao, 2020). As a consequence of CC, every year, a series of catastrophic cyclones/supercy clones occur in the Indian Ocean, causing severe havoc and resulting in the loss of lives of thousands of human beings and animals including property damage. Simultaneously, it has significantly impacted the health, pattern of rainfall, drought, melting of glaciers, rise in sea levels, floods, intrusion of saltwater, agricultural production, food security, energy security, water security, rise in temperature, and conflict among the population. It is only recently that governments have released the devastating nature of climate change which has resulted in an influx of new climate laws, standards and policies at the State and national levels in India.

To tackle the grave effects of CC, in December 2015, a significant international agreement was made by the UN Framework Convention on Climate Change (UNFCCC) to address climate change and to step up and intensify the actions for financial resources needed for a low-carbon, sustainable environment at the Conference of the Parties (COP-21), also popularly called as the Paris Agreement. The Paris Agreement has strengthened the Convention, uniting all countries and its people for the first time to achieve a common goal, which is to take bold action to stop climate change and protect the environment as well as prepare for its effects by providing more fund to help poor and developing countries. This agreement marks a starting point towards the fight against CC. The main objective of the Agreement was to maintain the current rate of global temperature rise while enhancing the global response to the particular consequences of climate change on the environment. It is noticed that the Union Government has provided significant support to the vulnerable tribal people to help in mitigating CC and helping to have a sustainable environment. The tribal communities have taken effective steps by engaging themselves in community plantation drives to spread awareness among people to protect forests and plant new trees. The tribal communities have also reduced the usage of forest wood

by adopting renewable sources of energy for their daily consumption which has led to preservation and protection of forests and the conservation of the environment.

2 Literature Review

The climate transition is quantified by changes in characteristics that correspond to average conditions, such as rainfall, wind patterns, and warmth. According to the IPCC, CC is defined as alterations in the average as well as the variability of the climate's attributes over an extended period, typically in many decades. It describes any alteration in the climate. The CC occurs throughout time due to both natural and human-caused variations (Pepin, 2022). The particular consequences of global warming in developing countries are contingent upon a country's climate as well as its unique set of geographical, social, cultural, economic, and political circumstances, all of which vary widely from one another (Dale, 2017). The CC is a global issue and it puts agriculture, wildlife, and sustainability in jeopardy. The CC threatens the nation's efforts to eliminate poverty by threatening farming, biodiversity, and ecosystems. A lack of food, malnutrition, destruction of habitat, and unemployment are all linked to CC and it continues to pose a threat to the development of many countries around the globe (Dechassa, 2016). A study conducted by Caritas, India reveals that tribal communities can better protect the forest as their identity and survival depends on the forest. They conserve the forest better than other people. They are the indispensable forces behind the protection of the ecosystem.

Indian tribes better preserve their natural forests, and habitat and promote conservation through sustainable practices of farming, protecting wildlife, collecting forest products and fishing. The traditional rituals and belief systems of tribals also contribute to the protection of the environment. UN Climate Change Learning Partnership (UNCC: Learn) collaborative initiatives noticed that indigenous people have innovative ideas and knowledge for protection of the biodiversity and conservation of the environment. Pradip Chattopadhyay's study (2016) focuses on the relationship of Santal tribes with nature indicating how Santal tribes were strongly associated with forests, hills rivers and other surroundings. Nature provides all resources for sustenance and contributes to an integral part of Santal tribal culture. Therefore, the tribal communities also protect the environment and conserve biodiversity. Nhamjahao Kipgen (2016) investigates the relationship between tribal culture, ritual practices, agriculture, and the management of natural resources. He found that women are more connected with nature and they conserve and nurture the ecology and resources in a better way. The above literature highlights the strong bond between tribal communities and the environment. It also emphasizes the creation of tribal culture, tradition, belief and value systems based on various living and non-living elements or symbols of nature. The socio-economic-cultural practices have been associated with and flourished due to their continuous engagement and interactions with the environment. However, in recent times, a huge gap has been generated between the tribal community and the natural world due to various

developmental interventions made by the State forces and other agencies like greedy corporate entities.

3 Objectives

- (i) To understand and uncover the complexities of climate change by examining various root causes of environmental crises, and other manifestations of climate change that affect biodiversity.
- (ii) To examine various public policy initiatives such as different Laws, Rules, Regulations, and legislation made by the government for the improvement of the environment.
- (iii) To explore the initiatives/provisions made by the government to empower tribal communities in the protection of the environment.

4 Methods of the Study

This study is based on qualitative and exploratory research where the data and other information are collected from various secondary sources and analyzed in different ways as per the needs of the research. The other relevant information is gathered from various publications, documents and reports of various national (Government of India) and international institutions/organizations. Subsequently, the data related to the protection of the environment by tribals are collected from the data source of the Ministry of Tribal Affairs, Government of India. Data available has been carefully checked, discussed and analyzed for a better understanding of the efforts made by the tribal communities to protect and preserve the environment.

5 Discussion on Complexities and Causes of Climate Change

Significant variations in the weather, snowfall, or patterns of wind that last for a long time are referred to as "climate change". Climate change is a genuine and pressing issue that is already having an impact on humans as well as the natural world. It is noticed that major modifications are taking on Earth's surface, such as rising sea levels, melting glaciers, vaporization of snow, and increasing atmospheric and water temperatures. Both man-made and natural events have played a significant part in exacerbating the problem of climate change. Since the formation of the Earth 4.5 billion years ago, the weather has been fluctuating. Temperature is influenced naturally by causes such as movements in the tectonic plates of the planet's crust, eruptions of volcanoes, and changes in the Earth's orbit. Over the past million years, the outermost layer of the planet has experienced multiple ice ages, encompassing warm (interglacial) and cooler (glacial) periods. Changes in the Earth's orbit revolving around the sun have resulted in 100,000-period cycles of arctic and interglacial generations. On the other hand, man-made events such as the industrial revolution in

the 1800s, have acted as a catalyst in accelerating the increase of global temperatures. Along with that, the use of petroleum and natural gases in industrial activities has been responsible for causing the CC.

5.1 Human-made Causes for Climate Change

Humans are the major stakeholders of climate change. They contribute to climate change because they release atmospheric greenhouse gases i.e., carbon dioxide onto the earth's surface. The atmosphere contains more atmospheric carbon dioxide now than past few million years ago. In the 21st century, the rate of carbon emission has increased by 40% due to human beings, such as Chlorofluorocarbons (CFCs). There are various causes responsible for contributing to climate change and the degradation of the environment are discussed here:

5.1.1 Burning of Fossil Fuels

For a long time, carbon dioxide, which is present in fossil fuels like petroleum, natural gas, and coal, was being “locked away” underneath. Workers take them out from the soil and destroy them, releasing the accumulated carbon dioxide towards the environment. The Intergovernmental Panel on Climate Change (IPCC) states that emissions from energy sources such as fossil fuels are primarily responsible for global warming. In 2018 and 2019, industries and energy from fossil fuels accounted for 89% of worldwide emissions of carbon dioxide (CO₂). Coal contributes more than 0.3C to 1C increase in the global average temperature, making it the dirtiest fossil fuel on earth and a major cause of climate change. Large amounts of carbon are released when oil is burned; approximately one-third of all carbon emissions come from this source. In recent times, numerous oil spills have severely damaged our ocean's ecosystem. Nevertheless, natural gas contributes to 5% of global carbon emissions. Hence, fossil fuels are one of the biggest contributors towards climate change.

5.1.2 Deforestation

Deforestation is the intentional eradication or diminution of woodlands and trees. It releases a large quantity of carbon that is stored inside the trees into the environment as carbon dioxide, which exacerbates climate change. Over the past decade, the humid tropics specifically countries like Africa and South America have seen the greatest rates of deforestation. According to estimates from the UN Food and Agriculture Organization (FAO), from 1990 to 2020, almost 420 million hectares of forest land were lost. Although it has decreased, between 2015 to 2020, 10 million hectares of forest were lost annually. The necessity for forest products globally is the root cause of deforestation. Large tracts of woodland are destroyed by agribusinesses, who then use the spaces for livestock pasture and the planting of valuable commercial agricultural products like soybeans and palm kernel oil. The transformation of land use is dominated by forest destruction, which is responsible for 12–20% of the emission of greenhouse gases worldwide. Further factors adding to the above

emissions include the vanishing of tropical peatlands and improvements to forests that negatively affect an ecosystem's form or operation without affecting its acreage. Due to habitat loss and destruction, few tropical forests have transformed into sources of carbon, releasing more carbon dioxide into the natural environment. These changes and contributions led to climate change which ultimately affects the environment.

5.1.3 Manufacturing Goods

Industries emit carbon dioxide, mostly from burning petroleum and coal to create electricity for electronics manufacturing and resources for polymers, clothes, metals such as iron, steel, copper, etc. In addition to mines and other types of industrial operations, setting up industries releases harmful gases. These gases are often employed in the making of goods as fuel for machinery. Likewise, chemicals made from energy sources are utilized for creating specific products, such as polyester. One of the major global generators of atmospheric greenhouse gases is the manufacturing industry. Hence, the manufacturing industry is a major contributor to the degrading standard of the environment through climate change.

5.1.4 Transportation

Most automobiles, cars, vessels, and aircraft run on petroleum or natural gases. It is an important generator of atmospheric greenhouse gases, especially carbon emissions. Automobiles, whose engines that burn gasoline consume fuel that is derived from petroleum like fuel oil. Freight and aeroplane emissions are still increasing. Around 25% of the globe's carbon dioxide pollutants are linked to the energy generated by automobiles. Moreover, trends indicate that energy usage for vehicles will significantly increase over the upcoming years. Hence, in upcoming years transportation will contribute majorly to the degradation of the quality of air and that will ultimately affect the environment, human and animal world.

5.1.5 Food Production

India is the most populous democratic country in the world. India has been producing surplus food grains for the last few years to meet the growing demands of its people. The production of huge crops results in the release of nitrogen oxides, methane, and other environmental pollutants through a variety of processes, including forest destruction, cutting down of trees for farming and grazing purposes, livestock absorption, the manufacturing and usage of fertilizers and manure for cultivation, alongside the highly energy-intensive maintenance of vessels used for fishing as well as agricultural machinery, which usually necessitates the combustion of fossil fuels. It is noticed that food production contributes significantly to the changing of the climate. Furthermore, the transportation and packing of food increases the production of greenhouse gases.

5.1.6 Powering Buildings and Power Consumption

Globally, properties, commercial as well as residential, consume over 50 per cent of all energy. They still emit a lot of greenhouse gases because their primary sources of heat are natural gas, coal, and petroleum. Furthermore, the combination of rising air conditioner ownership, increasing demands for electricity, and rising use of electrical consumption for gadgets. lighting and other electronic devices contribute a lot to climate change. Numerous factors, such as your place of residence and electricity consumption, accessibility, dietary intake, and the quantity of garbage dumped contribute towards emissions of greenhouse gases. Utilizing goods like gadgets, clothes, and polymers adds to this as well. A large amount of the carbon dioxide emissions in the globe are caused by private homes. Hence, rich people bear the biggest responsibilities because they contribute more towards the emission of atmospheric greenhouse gases than the poorest half of the global population.

5.2 Nature Made Causes

5.2.1 Orbital Changes

The Milankovitch Theory explains the three distinct periodic shifts in the Earth's inclination and rotation that cause climate swings spanning 10 thousand to 1 Lakh years. These orbital shifts are covered in the temperature over time module. These variations include the angle (visibility) of the axis of Earth every 41,000 years, the shifting (acceleration) of Earth's axis every 23,000 years, as well as shifts in the configuration (eccentricity) of Earth's orbit every 100,000 years. According to Milankovitch, glacial periods start at a latitude of 65°N when the three cycles align to promote a prolonged period of higher winter solar energy and lower summer solar radiation. The weather in the northern latitudes is favourable for somewhat higher temperatures as well as larger levels of water vapour in the atmosphere, which results in heavier snowfall. Less melting of winter snow and the building of glaciers are encouraged by a relatively mild summer for the northern latitudes.

5.2.2 Volcanic Eruption

Eruptions of volcanoes generate nanoparticles such as ash and smoke, nitrogen oxides, and atmospheric carbon dioxide. Liquids and particles that float in the air are called aerosols. In addition, soot, dust, salt crystals, bacteria, and viruses might be among them. As incoming solar energy is scattered by aerosols, a modest cooling effect results. A portion of daylight can be blocked by volcanic aerosols, which can result in a cooling that lasts for one to two years. The year 1816 also called the "year without a summer", started with the explosive eruption of Mount Tambora in Indonesia. It is possible that this was the biggest known eruption in human history. Volcanoes spew sulfur dioxide (SO₂) and ash particles into the stratosphere at the time of heavy eruptions. After some days, the larger molecules settle whereas sulfur dioxide and water vapour react to form sulfurous aerosols, which are made up of

sulfuric acid (H_2SO_4) and sulfate particles. Breezes over the earth's surface carry such sulfurous particles regardless of an eastern or a western direction. Because of this, hemispheric or global cooling is more likely to result from volcanoes that erupt at lower latitudes, or nearer the equator. Since sulfurous aerosols are limited to wind patterns around the poles, cooling is less likely to result from volcano eruptions that occur at higher latitudes, or closer to the poles.

5.2.3 Radiation by Sun

The total quantity of radiation from the sun varies by incredibly small amounts. The output of energy from the sun changes by 1.3W/m^2 . The quantity of sunspots has an impact on the variation in solar radiation. Sunspots are areas of the sun's surface that are darker in colour. A sunspot develops when an intense magnetic field prevents gases emanating from the sun from travelling and transferring thermal radiation. As the sunspots are colder than the surrounding environment, they seem dark. The quantity of sunspots varies from a maximum to a minimum amount roughly every 11 years. When sunspot activity is high, the sun produces a little bit more radiation. The area becomes brighter than normal and reflects much heat as a result of the sunspots' suppression of heat waves. Very few sunspots seem to be connected to a colder temperature, whereas more sunspots help in warming the planet's surface.

6 Policies for Protection and Preservation of the Environment

Climate change is a significant and debatable issue in the 21st century. The climate change issues are not only discussed by the academia and environmentalists but also widely discussed by scientists, technocrats, bureaucrats and also by the policymakers. As a result, the Government of India legislated multiple policies about the protection and conservation of the environment. There is a pressing demand for the protection of the environment and also to safeguard flora and fauna which have been also ingrained in our Constitution. Article 48A of the Indian Constitution says that states must strive to ensure the protection and improvement of the environment and safeguard the flora and fauna of the country. Further, Article 51A of the Indian Constitution reflects on the protection of the environment which is the basic duty and responsibility of every individual. It is the fundamental and prime duty of every individual in India to preserve and improve the condition of the environment and its flora and fauna. There are different legislation focusing on protection and conservation of the environment, some of the major policies are discussed below.

6.1 The Wildlife (Protection) Act, 1972

The rapid decline in the condition of the environment is happening today due to increased and uncontrolled industrial development and changing climatic conditions which forced us to realize the necessity of environmental laws. Many animal and plant species have been led to extinction or endangerment due to the unregulated destruction of the environment. Therefore, the National Government introduced the

Wildlife Protection Act (WPA) in 1872. Until, 1872, wildlife was under the State subject of "forests". After the introduction of the legislation by the Union Parliament, the subject became part of the Concurrent list. The WPA provides a scope for protection to the endangered species of animals and plants and establishes areas that are declared as reserved areas for wildlife. Areas protected under the Act include community reserves, conservation reserves, tiger reserves, sanctuaries and national parks. Some initiatives taken under the Act were Project Tiger Conservation, Project Elephant and creating wildlife corridors that provide safe paths to facilitate the movement of animals without human interference.

The Act has six schedules that provide different levels of protection. Schedule 1 provides the highest extent of protection and violation will result in the highest amount of punishment. Species such as Blackbuck, and Asiatic Cheetah are protected under this Schedule. Schedule 2 also provides a high level of protection and it is prohibited to trade the species listed under this schedule. Some species protected under this schedule are the Indian Cobra and the Himalayan Black Bear. Species which are not endangered are mentioned under Schedules 3 and 4. These schedules give lesser protection and violators are awarded lesser punishments. Certain species protected under Schedule 3 are the Chital, Hyena, and Sambhar and Schedule 4 are the Flamingo, Falcons, Magpie, Hares and Kingfishers. Schedule 5 includes animals that are regarded as vermin such as Common Crows, Mice, Rats and Fruit Bats. Schedule 6 regulates the cultivation, possession, and sale of certain breeds of plants such as the Blue Orchid, the Red Orchid, Slipper Orchids and the Pitcher Plant. When we protect wild animals, we create an ecological balance and we protect ourselves to create an ecologically balanced world.

There are certain challenges faced under the WPA, 1972 include a lack of awareness among the masses about the importance of the conservation of wildlife, an increase in conflict between humans and wildlife due to the encroachment in the habitat of wildlife, illegal trade of wildlife and its by-products, poaching, improper coordination between various wildlife authorities and Departments and the government agencies and authorities such as the police, revenue and customs departments. Further, the act does not provide adequate punishments to offenders. Climate change is a huge factor that needs to be taken into consideration to effectively protect wildlife from extinction. In subsequent times several legislation were made to ensure the protection and conservation of the environment. Some of the important legislation are discussed below.

6.2 The Water (Prevention and Control of Pollution) Act, 1974

The Water (Prevention and Control Pollution) Act, of 1974 focuses on regulation and prevention of water pollution. It aims to restore, maintain and improve the quality and purity of water. The State Pollution Control Boards have the power and authority to regulate and make policies for improvement in the water quality. The above institutions are the Statutory Institutions that have been created under the Water Act,

of 1974. it gives power to the institutions to set standards for industries and plants that dump toxic substances and pollutants in water bodies.

6.3 Forest Conservation Act, 1980

It was introduced for the protection of forests and the conservation of its resources. It provides the Right to the Union Government to implement various provisions of the Act. It is mentioned that the State Governments can only make decisions based on the approval of the Union Government. It provides punishments and penalties in case of violations. It further, provides provisions to set up an Advisory Committee regarding Central and State conservation of forests.

6.4 The Air (Prevention and Control of Pollution), Ac, 1981

It has been noticed that the swift decline in quality of the air, the United Nations and its signatories Nations came together to discuss to control and prevent further pollution in a conference namely, the UN Conference on Human Environment that was held in Sweden from 5-16, 1972. Considering the resolutions made in the conference, India passed numerous legislation for the preservation of natural resources. This Act is one of the main legislation which aims to specifically control air pollution in the country. It consists of 54 Sections and 7 Chapters. Under this Act, the Central Pollution Control Board and different State Pollution Control Boards were established. These Boards have given authority to enforce and implement the provisions mentioned under the Act and perform functions by the objectives of the Act. Under this Act, there is a limit set to the extent of toxic substances such as particulate matter, carbon monoxide, lead, Nitrogen Oxide, Sulphur Dioxide and other harmful compounds that can be released by industries, vehicles, power plants etc. that act is the main source of air pollution in the country. Under the Act, State governments can designate areas that have a high level of air pollution.

6.5 The Environment (Protection) Act, 1986

This Act was passed as a result of the Bhopal Gas tragedy, 1984 which has indicated the devastating effects on the environment, property and health of individuals and loss of lives. It was passed under Article 253 which dealt with the provision to give effect to agreements at an international level. This Act gives the power to the Ministry of Environment to declare areas as ecologically fragile. It has granted more power to the Union Government to take the appropriate policy actions for improving the conditions and protecting the environment. It also directs the State and Union authorities to prepare an execution plan consisting of various rules and other regulations of control, prevention, and abatement of the pollution in the environment.

6.6 Biological Diversity Act, 2002

This Act was introduced in the Parliament to implement the various principles discussed under the UN Convention on Biological Diversity, 1992. It recognizes the

right of countries to be able to use their own country's biological resources. The objective of the Act was to conserve biological resources and ensure that such resources were being used sustainably and equitably by all communities and sections. To regulate the usage and access of biological resources, a three-level system was introduced and subsequently, it was included, at the bottom/local level, there was the Biodiversity Management Committee, at the State level, there was the State Biodiversity Boards and finally top, at the Union level, there the National Biodiversity Authority for effective management of biodiversity.

6.7 National Environment Policy, 2006

The National Environment Policy, of 2006 focused on more coverage and bridge the existing gaps in environmental problems during that time. It also focused on how to create a healthy environment by taking State-led initiatives with cooperation from the citizens as well as other stakeholders. This policy specifically gives importance to the State's galvanized efforts and role and recognition of citizens and other institutions for creating a healthy ecosystem and enhancing the quality of the environment. It tries to ensure that environmental issues have been added as the mainstream concern in the developmental initiatives.

This policy intends to guide various activities including regulatory reforms, conservation of the environment, and review and modify certain legislation related to the environment to be initiated by the Central/State/Local Government. The National Environment policy has adopted possible measures and developed a mechanism how for harnessing natural resources by strengthening the management of the environment with a focus on collaborative efforts by various stakeholders, like public agencies, academic and scientific institutions local communities and also with international development partners/agencies. The Environmental Policy, 2006 addresses the key challenges that India has been facing over the last few years. This policy intends to protect and conserve the ecological systems and natural resources that are essential for the life, livelihood and well-being of every human being particularly the tribal people while giving priority to the conservation of the environment and environmental resources from its degradation. It also ensures equitable access to environmental resources and livelihood security for all tribal people and poor sections of the society. At the same time, this policy focuses on the judicious utilization of natural resources to meet the present needs as well as meet the aspirations of the future generation. However, this policy integrates all concerns of the environment and reflects on socio-economic development while enhancing resources for environmental conservation along with a focus on environmental governance.

6.8 National Green Tribunal Act, 2010

The National Green Tribunal Act, 2010 was introduced to provide adequate compensation and administrative and legal remedies to those individuals affected by pollution and other damages to the environment. It aligns with the Rio Summit held in 1992 and Article 21 of the Indian Constitution which includes in its ambit the right of

all individuals to have a healthy environment. The Tribunal has to dispose of a case within 6 months of appeal and has original jurisdiction over matters about substantial questions regarding the environment. The decisions of this Tribunal can be appealed further at the High Courts and the Supreme Court.

7 Government Initiatives for Empowering Tribal Communities for the Protection of the Environment

The tribal population constitute 8.6% (104 million population as per 2011 Census) of the total population of India and inhabits 15% of the geographical area. They play a pivotal role in the conservation and protection of the environment, and ecology, and maintain unity in diversity in India. The tribal people have a rich culture, tradition, heritage and unique customs and lifestyles. They are primarily connected with nature as their life, livelihood and survival depend on the healthy environment and ecological balance. Their survival, knowledge, lives, development and healthcare are at risk due to the swift environmental degradation, increased industrial activities, conflicts, waste mismanagement, deforestation and improper use of forest land. These communities need the protection and preservation of their land from being illegally usurped by companies, industries and the government.

The government has undertaken various policy measures to empower tribals and transform their livelihoods. In recent times, the Government of India has inspired the tribal communities by recognizing different tribal movements (Mizo movements, Khasi-Garo movements, Kol movement) and contributions of tribal leaders (Adivasi Heroes: Gond Maharani Veer Durgavati, Rani Kamalapati, Veer Maharana Pratap, Bhagwan Birsa Munda) those who had sacrificed their lives for freedom struggle. India is celebrating and recognizing the contribution and efforts of tribals in the field of art, craft, and culture, and preserving the rich heritage of tribals including the innovative methods of protecting and preserving the environment. The Government of India has allocated a budget of Rs. 24,000 crores (Central share Rs. 15,336 crores and State share Rs. 8,768 crores) for holistic development (covering basic amenities such as nutrition, health, education, rural development, road and telecom, electricity, housing, drinking water, sanitation and including sustainable livelihoods) of 75 Vulnerable Tribal Groups (PVTGs) across 18 States and Union Territories (22,544 villages, 200 districts, covering 28 Lakh population) in India and it will be implemented by nine Ministries, Government of India. The government of India has been emphasizing and empowering the tribal communities by focusing on the Schedule Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

7.1 Schedule Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

The Forest Rights Act (FRA) 2006 aims to recognize the rights of forest-dwelling indigenous communities and other traditional forest dwellers to access forest products and other resources. The tribal communities have been depending on forests for their life and livelihood and fulfil a variety of requirements including socio-cultural needs. Although the government has legislated different policies including participatory forest management policies, it does not include the comprehensive needs of the tribal community. The FRA, 2006 gives a unique identity to tribals and recognizes the symbiotic relationship of the Scheduled Tribes with the forests, and their close dependence, and connection with the forests as well as the generation of traditional knowledge for the conservation and preservation of forests. This Act grants individual rights of land ownership for habitation and self-cultivation. It also provides a variety of community rights and other accessibility to the entire tribal community including habitat rights for particular Vulnerable Tribal Groups, community rights such as grazing, access to water bodies for their use, fishing, and access to biodiversity. It provides the right to the Nomadic and Pastoral Community to access seasonal resources, community rights to traditional knowledge and intellectual property rights, and recognition of traditional customary rights. This Act also grants the rights to the tribal community to manage forest products and other resources for sustainable use and the right to conserve, preserve and protect the environment. This Act provides community rights to allocate forest land for developing infrastructure and to fulfil the basic amenities of the tribal community for their holistic development. This Act not only provides a variety of rights and gives the right to access forest resources but it also enhances the standards of the tribal community by providing fair compensation and transparency in land acquisition and protects the tribals from eviction without rehabilitation and settlement.

This Act further gives a scope of empowerment to the Gram Sabha and tribal people to make a decisive decision in the matters of making local policies and other schemes that impact them. It also allows rights holders to think about their duty and responsibility for the protection and conservation of biodiversity, and the preservation of adjoining catchment areas, forests, wildlife, water sources and other sensitive areas that have ecological importance. The tribal community takes the sole responsibility to stop any kind of destruction initiatives affecting these resources or natural heritage and cultural rights of the tribal community. This Act fulfills the following three major objectives: (i) to provide justice to the tribal and forest-dwelling communities that have been historically neglected; (ii) to ensure land rights, food security and livelihood of the forest-dwelling Scheduled Tribes and other traditional dwellers; (iii) to provide rights for strengthening forest conservation and conservation of biodiversity for an ecological balance. This Act has also provided multidimensional benefits to the tribal communities as it aims to protect the land rights of the tribes and other marginalized communities who are historically settled in such forest lands. This Act strengthens the local governance system, alleviation of poverty and management

and conservation of natural resources. Under this Act, the government report reveals that 22,35,124 individuals (48,15,146.22 Acres area granted under individual rights), 1,14,049 tribal community (1,32,86,066.05 Acres area granted under community rights) rights have been granted across the country since implementation of the Act. The Government of India has been undertaking various programs/policies such as tribal empowerment, water, cultural pride, Lifestyle for Environment (LiFE), health and wellness, and digitization of scholarship schemes for empowerment and holistic development of the tribal population in the country.

8 Conclusion

The climate change has a devastating effect on the environment. The study advocates the need for judicious and efficient management of natural resources to meet the aspiration of present needs and fulfil the hopes of future generations. It gives importance to the role of tribal communities in protecting the environment from the degradation of ecology due to climate change. The study reveals that tribal communities take responsibility with a commitment to protecting the biological diversity, and ecological balance and to meet desired goals of sustainable development. Although there are several policies enacted by the Indian Parliament for 75 years of its independence some of them have not achieved true success because of the lack of willpower of local politicians, inefficient policy implementation, mismanagement of allocated resources and non-involvement of community people. As climate change is impacting rapidly both humans and animals, it is a need of the hour for all stakeholders including the local tribal community to unite and actively participate in the implementation process of environmental policies/projects and ensure an effective monitoring system is in place for protection, conservation, preservation, restoration and promotion of the environment. Climate change, pollution, deforestation, loss of biodiversity and development are serious threats to the life and livelihood of indigenous people. It is important to ensure the commitment of the government as well as non-governmental organizations to join hands together to design an integrated sectoral policy framework for empowering the tribal communities to protect, preserve and conserve the environment for achieving sustainable development.

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