

Impact of Climate Change on Human Rights in Uttarakhand

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Abstract—Climate change is seen as one of the most important causes that stop the realization of human rights worldwide. Ecosystem of mountains, such as Indian Himalayan range, is facing various threats due to global warming, irregular rainfall, melting of glaciers, loss of biodiversity, and natural disasters. Environmental Protection is regarded as one of the most crucial issues in the Articles 21, 48A and 51A(g) of Indian Constitution where the Supreme Court of India has clearly defined that right to life includes right to live in a pollution free environment. The state of Uttarakhand that is in the core of Himalayan region is suffering from environmental degradation for the past few years. Kedarnath flood 2013, landslide, flash floods, and glacial disaster are some examples of the link between environmental protection and human rights.

In light of this issue, the concern of climate change becomes an important issue because it is related to environmental protection as well as constitution and human rights. Objective of this research is to find out the impact of climate change on human rights in Uttarakhand. This can be said with reference to the findings of the analysis carried out on the case study. As regards disaster and environmental management, the measures taken under legislative and policy formulations seem to be working quite well; however, some problems are being faced in some areas. Good adaptation policy formulation for climate change, community involvement in the process, ecological restoration, improved disaster risk management, and improved judicial control are some of the recommendations of the paper.

Index Terms—Climate Change, Disaster Management, Human Rights in Uttarakhand and Indian Constitution.

I. INTRODUCTION

Global warming has become an environmental problem of the current era. The global warming on earth has been created by greenhouse gases. An environmental change has occurred which has negative impacts on human rights. It is clear from the

report of IPCC that the area of the Himalayan Range has suffered global warming more than other areas of the world. This environmental problem causes glacial melting, climate change, and floods. Uttarakhand State has great ecological value in India. It is composed of mountainous regions 86% (eighty-six percent) geographically. This state has its economy based on agriculture, forestry, tourism, hydroelectric power production, and ecosystems.

The significance of the impact of climate variability becomes highly significant within the framework of sustainable development and socioeconomic growth. The impact of climate change on human rights which has appeared in the form of international human rights laws and in the Indian constitution is known to all people. The human rights which have been affected adversely due to climate change are as follows Right to Life, Right to Health, Right to Food, Right to Water, Right to Housing, Right to Livelihood, Right to Equality and Cultural Rights. However, the disaster at Kedarnath in 2013 became the proof of the link between climate variability, ecological degradation, underdevelopment and unpreparedness for natural calamities. The effects of the above disaster included loss of life, destruction of property, infrastructure, forests, agricultural land and economy which could not be revived. The other similar incidents occurred in the Himalayas like Chamoli, Joshimath, Uttarkashi, Pithoragarh and others due to landslide, glacial outburst floods, cloudburst and rainfall.

The fact is that the issue of environmental degradation takes place and leads to environmental pollution in the marginalized community since they reside in the mountains. The reason is that women from the marginalized community need to travel far away in order to get wood and water since they have nothing in their community. Farmers cannot practice agriculture due to the changes in the rainfall pattern. It is

dangerous for the native community since they have different culture and ways of life. " Article 14 of the Constitution ensures equal protection under the law. The right to life and personal liberty" enshrined in Article 21 of the Constitution of India has been interpreted by the judiciary as the "right to live in an environment free from pollution." Articles 48A and 51A(g): The Government shall conserve and develop the forests and wildlife and ensure that environment is protected and improved. The responsibility to take steps for forest and wildlife conservation has been placed upon the state through Article 48A of Directive Principles of State Policy while all citizens have the responsibility to conserve and improve the environment under Article 51A(g).

There are various laws which are enacted in order to protect the environment and also respect human rights in India. Some examples of constitutional provisions are as follows: This article makes the environmental protection a fundamental duty of citizens. Some of the important acts are: Forest (Conservation) Act, 1980 Environment (Protection) Act, 1986 Biological Diversity Act, 2002 Disaster Management Act, 2005 and National Green Tribunal Act, 2010.

The Himalayas states include Uttarakhand, which is known for its glaciers, rivers, forests, and biodiversity. The state of Uttarakhand plays a vital role in offering security to the rivers of this region because there are Ganges and Yamuna Rivers here. However, climate change has caused various problems to this region's ecological system, which includes the following: Rising temperatures, retreating glaciers, decrease in snowfall, Cloudbursts, Flash flooding, Glacial Lake outburst floods, Landslides, Forest fires, Changing monsoons and Biodiversity loss.

Climate change is addressed through several international instruments. Important agreements include Paris Agreement, United Nations Framework Convention on Climate Change, Rio Declaration on Environment and Development, Stockholm Declaration and Universal Declaration of Human Rights. Although these instruments vary in legal status, they influence Indian environmental policy and judicial interpretation. The Human Rights Council of United Nations and other international treaties on environment have made it clear that there is a need to adopt adaptive and mitigative steps to safeguard the interest of vulnerable sections of society. This has led to a new area of study related to climate change and

human rights. The purpose of this study is to analyse the effects of climate change on human rights in Uttarakhand.

II. RESEARCH OBJECTIVES

The study seeks to achieve the following objectives:

1. To study the effects of climate change on human rights in Uttarakhand.
2. To analyse the laws and constitutional strategies adopted in relation to the protection of environment and human rights.
3. To analyse the role of Indian judiciary in relation to environmental rights.
4. To assess the efficiency of climate governance and disaster management policies.
5. Legal and policy reforms in climate justice and human rights protection.

III. RESEARCH QUESTIONS

Following are some research questions that may be put forward with respect to this study:

1. Effect of climate change on human rights in Uttarakhand.
2. Constitutional protections that safeguard people against environmental pollution due to climate change.
3. Understanding of the right to environment under Article 21 of Indian Constitution in relation to judicial interpretation in India.
4. Obstacles that hinder the implementation of climate adaptation strategies.
5. Required modifications for building up climate resilience in Uttarakhand.

IV. RESEARCH METHODOLOGY

For the present research study, the doctrine approach will be adopted. For this particular research study, it can be concluded that the research study is mixed in nature, meaning the combination of descriptive research as well as analytical research. The various secondary sources like Constitution of India, acts made by the parliament, judgments of the Supreme Court, judgments of the High Court, judgments of National Green Tribunal, government reports, reports of IPCC assessment, UN reports, reports of National Human Rights Commission, research articles, books, and law journal articles have been used in the above

research study. With regard to the analysis of various secondary sources used above, qualitative legal analysis method will be adopted. The present research study has only relied upon the secondary sources.

V. LITERATURE REVIEW

The very geographical position of the state of Uttarakhand in the Indian Himalayan regions makes this area highly susceptible to the impacts of climate change because of the sensitive dependence of the region on its natural resources and vulnerability to various types of natural disasters such as floods, landslides, glaciers, droughts, and water shortage. These are some of the concerns of human rights as far as climate change is concerned: right to life, right to health, right to food, right to water, right to livelihood, right to shelter, and right to environment. Many studies have been done on the issue of vulnerability to climate change in Uttarakhand, India.

The issue of vulnerability and adaptation associated with climate variability and water scarcity in Uttarakhand is discussed in the paper entitled by Ulka Kelkar, Kapil Narula (2008) et al. It was discovered that climate variability brings additional strain on the water resources and negative impacts on the rural population who relies on traditional water management practices. Therefore, the major focus of the study was on the link between climate change impacts and social vulnerability of people, especially farmers. The link between climate change and human rights is investigated by Poonam Kumria (2019). The author investigates the impacts of climate change on the rural population whose lives are dependent on agriculture, forest, water resources, and nature as a whole. The author claims that climate change impacts the security of livelihood and protection of human rights.

As per the study carried out by Rupan Raghuvanshi and M. A. Ansari (2021), the concerns associated with the vulnerability of farmers to issues of climate change have been highlighted. The study indicates that the problems of rainfall, climate change, and climate uncertainty have negative impacts on agricultural production and livelihood of people. As evident from the above analysis, the importance of research can be identified in the context of human rights as the problem of livelihood and food security among people living in the hills area results from low agricultural

income. The problems associated with disaster due to climate change and vulnerability of infrastructure in Uttarakhand have been analysed by Gagandeep Singh and Ashish Pandey (2023). Severe weather conditions, landslides, floods, and infrastructure damage have been highlighted as issues that threaten human life, security, and development in the area.

The need for considering the human rights perspective in analysing adaptation and mitigation of climate change in the area of Uttarakhand is discussed in the article by Amit Upadhyay and Abhinav Mehrotra (2024). According to the authors, the climate change strategy must take into account not only environmental but also justice, equity, participation, and vulnerability aspects related to specific groups of people. Climate, ecology, and socio-economic factors have been analysed in the study conducted by Tiwari, P., et al. (2024). It has been concluded that the areas of Uttarakhand are extremely vulnerable to climate change due to the variability of the climate, natural disasters, low level of adaptation and infrastructure.

Decision of Uttarakhand High Court about River Ganges and Yamuna comes within the scope of O'Donnell (2018). This paper is an attempt to analyse the factors that have caused such a decision and include Indian Constitution, environmental legislation, culture, religion, and others. Legislation on the Rights of Nature can be seen as innovation in environmental governance, along with challenges arising out of it. The debate regarding the legal procedure leading to the decision of the Uttarakhand High Court on the right to life of rivers and other natural sources is considered. According to Upadhyaya & Nayak (2024), the present research will examine the process of the development of the aforementioned legal procedure and its role in the development of environmental law in India. The aim of the present research is to analyze the influence of judicial activism, public trust doctrine, sustainable development, and intergenerational equity on environmental pollution and climate change.

Based on the findings from investigations in the Himalayas, climate change is seen to be gender discriminatory since it affects women more than men for the simple fact that women fetch water, do household chores, and cultivate the land. Women will be affected as a result of water scarcity due to climate change, deforestation, and agricultural inefficiency. Gender-specific policy formulation is necessary to

reduce the vulnerability of women to climate change. It has been possible to identify many environmental and socio-economic determinants which increase the vulnerability of the population to the dangers posed by climate change through research undertaken in the state of Uttarakhand. Environmental determinants include glacier melting, deforestation, urbanization, growing tourism, hydroelectricity production, road constructions, and cloudbursts. There are also socio-economic factors which make the population vulnerable to climate change. Various empirical studies indicate that women, marginal cultivators, forest dwellers, and villagers are vulnerable to climate change.

Academic sources on the topic of climate change have gradually started to realize the diverse dimensions of climate change from the perspective of human rights. Mountains in the world, including Himalayan Mountain Ranges, are very vulnerable to the impacts of climate change due to the melting glaciers, changes in the pattern of snow fall and extreme climatic conditions. It is very true for Indian scholars to state that Article 21 of the constitution is an essential source for environmental rights. The right to life does not mean just life; it also means healthy environment.

Research Gap

There are many studies conducted by the scholars for issues related to vulnerability to climate change, disasters, agriculture issues, and inadequate water supply in the case of Uttarakhand. But climate change as per human rights (human rights regarding climate change and constitution rights, environmental, indigenous knowledge, migration, and gender inequalities) are ignored by the scholars. Some areas of research can include Climate change and right to life under Article 21 of the Constitution; People's displacement because of the disaster; Impact of climate change on genders; Climate change and involvement of local community in adaptation; and Government's responsibility regarding protection of the climate.

VI. JUDICIAL CONTRIBUTION TO PROTECTION OF ENVIRONMENT IN INDIA

This is general information regarding ecosystems in the Himalayan region that are very sensitive. The court system always highlighted that it was very important

to develop some standards for environmental protection while developing roads, hydroelectric projects, mining operations, and tourism. Due to the flood in north India in 2013, a few issues have arisen relating to judicial review of construction and deforestation. There has been substantial contribution that has been made by the judiciary of India in protecting the environment and human rights because of the liberal interpretation of the constitution. Even though there is no such thing as "clean environment" in the constitution of India, yet Indian constitution, especially Article 21 of the constitution, has been extensively interpreted to include the right to live in an ecologically balanced environment. The Indian Judiciary that introduced the notion of environment protection from its being statutory right to becoming a fundamental right under the Constitution of India. Below follows the list of accomplishments which have been achieved through judicial activism within the context of legal background concerning climate change in the Himalayas. The Indian Judiciary Extension of Article 21, Environment rights as human rights, right to ensure future generation through inter-generational equity, Sustainable development and public interest litigation.

M.C. Mehta v. Union of India (1987) Also called "the Oleum Gas Leak case," the verdict is said to be one of the landmark judgments for the environment in Indian Constitution. Following the leakage of oleum gas in Shriram Food & Fertilizer Industries, there were injuries to many people and an advocate even died due to this accident. The Public Interest Litigation petition that was filed by M.C. Mehta, an environmentalist, in Supreme Court of India, states that according to the verdict of the Supreme Court, there should be every effort from such industries so that there are no hazards from their actions. Judgment in the case of Expanded Article 21, Linking environmental protection to human dignity leads to the environmental rights and constitutional rights of hazardous industries.

According to the above Subhash Kumar v. State of Bihar (1991) judgment, right of an individual to a safe environment is regarded as human right. In the above case, it is alleged that some industries were responsible for polluting the Bokaro river leading to pollution of drinking water in that place. According to the above Supreme Court judgment, "right to life includes the right to enjoy pollution free water and air". Dismissing the writ petition as a private matter and not a public

interest matter, the above judgment was rendered. The above legal case describes the right to pollution-free water as a human right, right to pollution-free air as a human right, link between environmental pollution and human rights and citizens can invoke Article 32 in relation to environmental infringement.

Vellore Citizens Welfare Forum v. Union of India (1996) case wherein the problem of pollution due to the industries in the State of Tamil Nadu was brought before the court. The environment, the agricultural lands and the sources of groundwater were polluted because of the emission of pollutants from the industry. These are the three major principles that were enunciated by the Court regarding the environment law.

Indian Council for Enviro Legal Action v Union of India (1996) case, there were certain industrial units which were causing pollution due to chemical pollution. As per the decision taken by the court, it was stated that “Polluting Industries should bear the costs for the compensation to the persons affected and the cost of restoration of the environment should be met by the polluters” and “environmental protection is a constitutional obligation.” This led to the incorporation of the Polluter Pays Principle as an important concept in environmental law.

T.N. Godavarman Thirumulpad v. Union of India (Forest Cases) (1997) which are pending now in India are highly significant in terms of formulating environmental policies in India. The following gains have been achieved through the judgment of Supreme Court in the present case expansion in the interpretation of the term 'forest', banning felling down of trees illegally, relating to the protection of forests and conservation of biodiversity and wildlife.

A.P. Pollution Control Board v. Prof. M.V. Nayudu (1999) 2 SCC 718 Supreme Court of India made it clear that the role of scientific information is significant for environment management. Supreme Court of India observed that scientific information is very significant in environmental cases, decisions must be taken based on scientific information, and there must be a principle of precaution in environmental authorities in case of any doubts.

Mohd. Salim v. State of Uttarakhand (2017) Status of Legal Personality has been conferred upon by: High Court of Uttarakhand to Rivers Ganga and Yamuna. Indeed, the High Court of Uttarakhand has done well

in recognizing the significance of granting legal personality to the rivers.

Lalit Miglani v. State of Uttarakhand W.P. (PIL) No. (2017) High Court of Uttarakhand has provided legal personality to glaciers, forests, lakes, wetlands, air, and many more natural elements of Uttarakhand. The judgement brings out the link between environmental degradation and safeguarding the future generation.

Peter Smetacek vs. State of Uttarakhand (2024), Public Interest Litigation, High Court of Uttarakhand, Prohibition on felling down trees in Jones Estate, Bhimtal, keeping in view the significance of forests in the environment.

In Re: Forest Fires in Uttarakhand (Suo Motu PIL), High Court of Uttarakhand (2016 – 2025), The High Court has been repeatedly raising appeals regarding the problem of forest fires as forest fires pose a threat to forests, environment and even to human life.

Role of the National Green Tribunal (NGT)

NGT has come into existence due to the enactment of the NGT Act of 2010 with the objective of carrying out judicial processes quickly and effectively on issues relating to the environment. Some of the orders issued by NGT pertain to the restoration of the environment that is affected, illegal mining, protection of rivers and forests, environmental clearance, and Precautionary Principle and Polluter Pays Principle. With respect to the state of Uttarakhand, the NGT has been of great importance with regard to waste management and river pollution.

VII. ANALYSIS AND DISCUSSION

The incorporation of climate change into the human rights discourse has occurred through constitutional provisions, judicial decisions, governmental papers, and human rights discourse. The following are some of the factors as to why the effects of climate change ought to be addressed in terms of human rights issue in the state of Uttarakhand, owing to the sensitivity of its environment, geographical nature, river fed by glaciers, and dependency on natural resources.

Climate Change as Human Rights Issue

Climate change influences various fundamental rights of humans that are granted to the citizens by the constitution such as the right to life (Article 21), right to health, right to livelihood, right to food, right to

water, right to equality, and right to dignity. People in Uttarakhand face the adverse effects of climate change due to severe weather conditions, glaciers melting, rainfall, and landslides.

Environmental Governance in Uttarakhand

While the legislation is quite complete, nevertheless there are some issues regarding the enforcement of laws. These include the lack of participation of the local communities in environmental decision-making and the lack of control over the EIA procedure. Construction works, development of tourism, and building of hydropower stations have resulted in stress on the ecosystems. Environmental governance involves the coordination of the efforts of the government, scientists, courts, and local community.

Disaster Management and Adaptation to Climate Change

The floods in Uttarakhand that occurred in 2013 have revealed some flaws in the disaster management system and improper land use. Despite the fact that there have been some improvements in the disaster management system, nevertheless more actions should be taken.

Role of Judiciary Contribution

In relation to environmental protection, the judiciary of India has done a great deal in the interpretation of Article 21 as the right to live in a healthy environment. The doctrines of law that can be considered include the Precautionary Principle, Polluter Pays Principle, Public Trust Doctrine, and Sustainable Development. Nonetheless, the success of this strategy is dependent on the efficiency of the government.

VIII. FINDINGS

The impact of climate change will instantly affect the basic human rights of the state of Uttarakhand. The delicate ecosystem of the Himalayan region can be affected by glacier melting, rainfall, landslides, and biodiversity loss. Environmental degradation will affect the vulnerable section of people like women, children, elderly, small cultivators, and forest dwellers. The constitutional law that provides protection to the environment is Article 21 of the Constitution. This is decided from the judiciary intervention. A unique jurisprudence has evolved in the Supreme Court

regarding environmental law which reconciles with the constitutional provision and also sustainable development. There are various environmental laws in India but their enforcement is variable at different periods.

IX. SUGGESTIONS AND RECOMMENDATIONS

In order to achieve any progress in the field of human rights regarding the problem of climate change in the region of Uttarakhand, it will be necessary to undertake the following measures. These include Climate Adaptation Strategy, Disaster Preparedness Plan, Sustainable Development, Forest Conservation, Water Resource Conservation, Community Empowerment, Climate Change Awareness Programme, Improved Judiciary and Human Rights in Climate Change Policy Framework and Improved Environmental Impact Assessment. This has been done taking into consideration the need of the concerned State Government to formulate a strategy of climate adaptation through risk assessment and the identification of vulnerable hill areas that require prioritization, while preparing for disasters. The area requires the development of an early warning and disaster preparedness and communication system.

All development projects should be initiated only after undertaking an environmental carrying capacity assessment study. Development cannot take place in a fragile environment. Ecological knowledge from the community needs to be integrated into the process of adaptation to climate change. Education of citizens regarding climate change, disasters, and environment should be offered through educational institutions such as schools. Courts and tribunals need to be very strict in the enforcement of laws regarding the environment. The policies on climate change need to make sure that the issues regarding protection of the vulnerable people, resource-sharing, and right of people to take part in decision-making processes are addressed.

X. CONCLUSION

One of the primary issues that will need to be addressed in order to ensure the protection of human rights of the people in Uttarakhand is that of climate change. With regard to flooding, landslides, the melting of glaciers, forest fires and even unexpected rainfalls, such issues not only pose a threat to the

wellbeing of the people in terms of health, drinking water, food, shelter, but may even claim their lives. The task is complicated by the sensitive nature of the ecosystem in the Himalayan region due to the fact that the local communities depend on the environment in everything. In terms of law, there is the Constitution of India which includes Articles 21, 48A and 51A(g). This would definitely be successful as far as the legal steps that have been taken according to the constitution are concerned. Sustainable development is extremely essential in terms of planning and management. Through reducing risks and restoring the ecosystem and vulnerable groups, success can be achieved by the people.

The approach which is based on the perspective of climate change and human rights emphasizes the importance of environmental conservation from both an ecological and constitutional perspective. Through the science and law approach along with governance, sustainable development of Uttarakhand will definitely be achieved without damaging the Himalayan environment.

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