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4. Navigating Legal Frontiers: Biodiversity Conservation in the Mumbai Metropolitan Region Amidst Rapid Urbanization

Manjusha Bhenwal

Assistant Professor, Anand Vishwa Gurukul College of Law.

“The greatest threat to our planet is the belief that someone else will save it.”

- Robert Swan, OBE

The famous words of the first person in history to walk the North Pole and the South Pole articulate the need of the hour wherein the personal commitment of each individual is imperative to secure a sustainable future for all.

As humanity grows and develops, immense pressure builds on the planet to provide for the rising demand. A recent press report by the United Nations Environment Programme raises concerns regarding financial allocations to nature-positive initiatives. Nearly \$7 trillion have been invested in activities causing direct harm to nature whereas \$200 billion have been invested in nature-positive solutions.¹ This disparity has arisen primarily from five sectors viz. construction, electric utilities, real estate, oil and gas, and food and tobacco which account for 16% of the overall investment flow globally but are responsible for 43% of aggressive activities associated with the destruction of forests, wetlands, and other natural habitats.

This study aims to understand the rapid urbanization of the ever-growing Mumbai Metropolitan Region and the challenges posed to its biodiversity and highlights the efforts undertaken by various authorities to balance nature and development.

A mixed-method approach, combining a review of data and reports from prominent national and international authorities, analysis of news articles from authentic sources, and scrutiny of relevant legal judgments, has been incorporated to enhance the credibility and comprehensiveness of this study.

Keywords: Biodiversity conservation, Mumbai Metropolitan Region (MMR), urbanization, environmental impact.

Introduction

Mumbai Metropolitan Region (MMR) spans an area of 6,328 sq. km., consisting of 9 Municipal Corporations, 9 Municipal Councils and over 1000 rural areas of Thane, Raigad and Palghar districts. Mumbai Metropolitan Region Development Authority is the “Special Planning Authority” appointed by the State of Maharashtra to prepare and execute plans for the development of the Mumbai Metropolitan Region.²

As per the 2011 census, the total population of the MMR stands at 235.98 lakhs, making it one of the most densely populated areas of the country. A study from the Indian Institute of Technology-Bombay (IIT-B) has shown that the built-up area of the MMR has grown 4.5 times and the population has grown threefold in 4 decades ranging from 1972 to 2011³. According to the report, the urban footprint has grown towards Vasai-Virar, Bhiwandi and Navi Mumbai areas, compared to the main island city, thus drawing attention to the rapid urbanization on the outskirts of Mumbai.

The Mumbai Metropolitan region also holds a prominent place from an ecological perspective as it houses prime biodiversity areas such as Sanjay Gandhi National Park, Tungreshwar Wildlife Sanctuary, Tansa Wildlife Sanctuary and Karnala Bird Sanctuary. The Mangroves form a strong ecosystem along the coasts of Versova, Sewri, Colaba, and Bandra and the creeks of Mahim, Gorai, Thane, Bhayander, Navi Mumbai, and Uran which protect the coastal communities from the direct impact of storms and harsh seas and coastal erosion. Migratory birds such as flamingos, egrets, sandpipers, plovers, herons and gulls grace the avifauna of the MMR every year⁴.

Concept of Urbanization

Before defining ‘urbanization’, it is of vital importance to understand what entails to classify as an ‘urban area’ in India. In terms of administration, an urban area includes all units like Municipal Corporations, Municipalities, Cantonment Boards, Notified Town Area Committees, Town Panchayats, Nagar Palikas, etc. are known as ‘statutory towns’. All statutory towns with a population of 1,00,000 and above are classified as ‘city’. Further, all places falling within the criteria mentioned below are also considered as urban areas⁵: -

- i. Minimum population of 5000 persons;
- ii. 75% of the total male working population engaged in non-agricultural endeavours;
- iii. Having a density of population of at least 400 persons/ sq. km.

The term 'urbanization' refers to the increasing population concentration in urban areas, resulting in the growth and expansion of cities and towns and involves the migration of people from rural to urban areas or the transformation of rural areas into an urban landscape and is characterised by the development of infrastructure, utilities, and amenities and changes in social, economic, and cultural aspects of society.

Urbanization is a result of complex factors such as industrialization, migration, livelihood, improved lifestyle and prospects, better facilities and ease of access to such facilities, and an abundance of opportunities, thus prompting the majority of persons to settle in an urban set-up.

The post-independence India underwent a massive rural-urban transformation. A UN report estimates that by 2035, 43.2% of India's population will be residing in urban areas⁶.

Effect of Urbanization on Biodiversity of the Mumbai Metropolitan Region

The need to accommodate the ever-increasing demands of a fast-developing city has unfortunately shadowed the natural abundance of the region. The financial capital of the country is now overcrowded, not just for the humans but also for the rich flora and fauna which has been a crucial part of the region's tapestry.⁷ The process has severely impacted the ecological balance of the region which, in recent times has arisen in the following aspects:

a. Reducing green areas and mangroves

The expanding population, housing, agriculture, and infrastructure development have drastically reduced green cover in the last 25 years⁸. The situation is further worsened by improper waste disposal, thus replacing lush greenery with mounds of untreated garbage.

b. Loss of habitat for wildlife and human-wildlife conflict

Urbanization significantly impacts the city's diverse fauna. A study by the Bombay Natural History Society reports a concerning decline in avian species.⁹

The limitless extension of human presence into wildlife territories has escalated the human-wildlife conflict. Though not yet consistent throughout the city, areas close to the forests such as Sanjay Gandhi National Park and Powai Lake are prone to sightings and attacks by wild animals, which is detrimental to both humans as well as animals.

c. Pollution

- Air Pollution in the Mumbai Metropolitan Region has been a constant source of concern, the level of pollution has risen to striking levels in the last few months

with the AQI (Air Quality Index) of various places in the suburbs declining to a 'very poor' mark¹⁰. The rampant construction work carried out throughout the region is one of the major causes of this decline.

- Water resources in the region have been in a constant space of abandonment as some prominent water bodies in the region have deteriorated to the point that they cannot be called as rivers or lakes, a remark made by the Magsaysay Award winner water conservationist Rajendra Singh.¹¹

d. Climate Change

The incessant floods and waterlogging in Mumbai and surrounding areas due to concretization and improper and redundant drainage systems coupled with global warming and rising sea levels pose a serious threat to the very existence of the coastline of the region¹².

e. Socio-Economic issues

The drastic increase in the population of the Mumbai Metropolitan Region, particularly the main city of Mumbai has given rise to overcrowded illegal squatter settlements. These settlements lack proper housing and basic amenities such as potable water supply, electricity and sewage system. These issues further compound to create insufficiency in basic services such as healthcare and education¹³.

f. Effect on Health

All issues of the rapidly growing urban area manifest into one concern- affecting the health of the inhabitants of the region. While water-borne diseases such as gastroenteritis, cholera and typhoid have been prevalent in the region, there has been a visible trend in monsoon-related illnesses like malaria, dengue, leptospirosis and chikungunya due to improper sanitation and waterlogging during monsoons. The deteriorating air quality has led to a rise in the number of patients suffering from breathing ailments such as asthma and bronchitis.

Legal Framework for Urban Environment Conservation

India has been committed to sustainability and environmental consciousness from the very beginning. With the 42nd Amendment, the cause of environmental protection received constitutional sanction in the form of Directive Principles of State Policy and as per Article 48A, environment protection and improvement and safeguarding of forests and wildlife became the prerogative of the State. To attain this objective, various legislations have been enacted by the Centre and the State Governments.

The Ministry of Environment and Forests (MoEF) is the apex body concerned with the regulatory and administrative functions concerning the environment which is strengthened by Central and State Pollution Control Boards. The establishment of the Green Tribunal in 2010 has been an important milestone in India's commitment to environmental protection. The new Environmental Impact Assessment 2006 has made it mandatory for mining, thermal power plants, river valleys, infrastructure (road, highway, ports, harbours and airports) and industries to get environmental clearance and has put the onus on the state governments to issue clearances to the projects.

At the state level, all development initiatives are carried out in consonance with the Maharashtra Regional and Town Planning Act, 1966 and the Maharashtra Regional and Town Planning (MRTP) Rules. While housing projects are carried out in tune with the Maharashtra Housing and Area Development Act and the Maharashtra Real Estate (Regulation and Development) Act, the Mumbai Metropolitan Region Development Authority is established and functions as per the Mumbai Metropolitan Region Development Authority (MMRDA) Act. All the authorities endeavour and are committed to developing the region in a sustainable manner with due consideration to the ecological sensitivity of the region.

Judicial Approach to Environment Conservation

The Judiciary of India has always championed the cause of environmental protection and has always strived to maintain the balance between human life and the environment. The landmark decisions and principles such as the Public Trust Doctrine¹⁴, Polluter Pays¹⁵ and Precautionary Principle¹⁶ have set the foundations of environmental consciousness in the country.

Suggestions

Environmental consciousness and integrity have always been the essence of the nation's existence. The multifaceted functions of the welfare of all its people while walking the tightrope of sustainability are indeed a tough mountain to climb. This study acknowledges that there are mechanisms created by the State and has the following suggestions to ensure a smooth running of the state machinery, particularly in the Mumbai Metropolitan Region.

1. A strict no-compromise stance on environmental violations in the MMR with stringent penalties and an independent oversight body.
2. Awareness drives to instill a culture of environmental responsibility.

3. Emphasis on regular monitoring and legal mechanism upgrades for proactive identification of violations.
4. Simplification of environment checklist to empower stakeholders for self-assessment and voluntary compliance.

Conclusion

The Mumbai Metropolitan Region is at a critical juncture where the balance between rapid urbanization and biodiversity conservation is of paramount importance. Through a combination of existing legal frameworks, strict compliance and proactive community engagement it is possible to create a model for sustainable development that ensures the well-being of both the human population and the rich biodiversity of the region.

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9. Environmental Policy and Governance: A Comprehensive Overview

Priyanka Arvind Khakhadia

Assistant Professor, Anand Vishwa Gurukul College of Law, Thane.

Abstract

The evolution of humankind has drastically impacted the environment resulting in increasing environmental issues such as air and water pollution, deforestation, disturbing the wildlife etc., sensitizing the world towards the environmental issues. This paper attempts to explore the evolution of environmental policies and governance. It elucidates the range of acts and regulations made for conservation of the environment. In consonance with this exercise, the study underscores the contributing factors for the emergence of environmental policies and governance. This paper attempts to critically examine the National Environment Policy (NEP), and explores their role in providing frameworks for conservation, sustainable development and equitable resource utilization. This paper provides a comprehensive overview of the significant components of environmental policy and governance, emphasizing the intricate interplay between legal frameworks, institutional structures, and international collaborations.

Key Words: Environment, policy, legislations, governance.

Introduction

Over the years, there has been an increasing awareness and consciousness among the people about their right to a healthy environment. Since the late 1960s environmental policy has gradually evolved. While the previous initiatives addressed specific issues such as air and water pollution nationally as well as internationally, more recent concerns like the greenhouse effect, ozone layer depletion, and the loss of biodiversity transcend national boundaries and require for a broad international approach. No nation can afford to ignore the emerging environmental problems. In this connection, the first initiative was taken by the United Nations for the preservation of the environment. The principles and action plan for preventing and regulating degradation of the environment were developed at the U.N. Conference on the Human Environment in Stockholm held in June 1972. Further, on December 15, 1972, U.N general Assembly passed a resolution emphasizing the need for active co-operation among the States in the field of human environment (Dwivedi, 1997). Since the Stockholm Conference on the Human Environment, there have been many conferences and agreements not only at the

international level but also at the state level directed towards the protection of the environment and preventing environmental degradation.

Research Methodology

The main objective of this research is for analyzing and providing comprehensive overview of the various environmental policies and governance. Various qualitative data was collected and critically analyzed for this paper. Qualitative research methodology was used to formulate this study.

Early Environment Movements

Early environmental movements emerged in response to growing concerns about industrialization, urbanization, and the adverse impacts of human activities on the environment. These movements sought to raise awareness about environmental issues, promote conservation, and influence policy changes. Here are some key early environmental movements:

- Conservation Movement (late 19th to early 20th century)
- Dust Bowl Conservation Movement (1930s)
- Rachel Carson and the Environmental Movement (1960s)
- Greenpeace (founded in 1971)
- Earth Day (first celebrated in 1970)
- Chipko Movement (1970s)
- Montreal Protocol (1987)

These early environmental movements laid the groundwork for the modern environmental movement, shaping public consciousness, influencing policies, and fostering a sense of responsibility for the planet's well-being. They paved the way for continued efforts to address contemporary environmental challenges.

The International Efforts

The early attempts to develop international environmental laws was relating to birds, fishes, seals, etc., only. The earliest international covenant relating to environment is of 1967 relating to fisheries.¹ The Club of Rome emphasized the need for growth constraints and brought attention to concerns like ecological balance and sustainability. In 1972, the United Nations Conference on Human Environment (WCED, 1987) provided a forum for the global concern regarding environmental degradation. In his 1972 book "Limits to Growth," Osborn discussed issues such as famines, pollution, overcrowding, and a lack of resources. The 1987 Brudtland Commission report "OUR COMMON FUTURE" introduced groundbreaking development theory and elevated environmental concerns. The Commission concluded that there should be

complementarity and interdependence in the relationship between environmental conservation and economic growth.

Constitutional Amendments

The Constitution is known as the "basic law of land" from which all other laws derive their sanctity or validity. The Constitution of India provides a number of Directive Principles of State Policy. Our late Prime Minister Smt. Indira Gandhi at Stockholm Conference in 1972 observed, that environment cannot be developed in the condition of poverty, the major cause and effect of global environmental problems. The new paradigm for development thus emphasizes on growth that is equitable, stable, and sustainable. India is one of the signatories of the Stockholm Declaration which is known as the Magna Carta on Human Environment. Therefore, to fulfill its promise made at the Stockholm Conference, the Indian Parliament passed the 42nd Amendment to the Constitution in 1967. This 42nd Amendment incorporated two significant articles – Article 48-A and Article 51- A(g) to protect and improve the environment. Article 48A was added to the Directive Principles of State Policy and stated that "The state shall endeavor to protect and improve the natural environment and safeguard the forests and wildlife in the country." The Article 51 A (g) of Fundamental Duties states that it shall be the duty of every Indian citizen to protect and enhance the natural environment which includes forests, lakes rivers and wildlife and to have a compassion for living creatures. As a result, "Forests" and "Wildlife" were added to the Concurrent (Centre) list instead of the State list.

Article 21 of the Indian Constitution not only protects human rights but humans are also obligated to protect and preserve a species becoming extinct, conservation and protection of environment is an inseparable part of right to life. According to the court, "we are committed to safeguarding this endangered species because, like human beings, this species has a right to live on this earth." In a recent case, the Supreme Court ruled that the dire state of air quality had a negative impact on residents' rights to health, employment, education, and eventually their right to life. The court was obligated by the Constitution to address these citizens' legitimate concerns.² Article 32 and 226 of the constitution of India provides for Public Interest Litigation right which resulted in a wave of environmental litigation.

Indian Legislations enactments regarding the environment

India has implemented a series of environmental laws and regulations to tackle diverse facets of environmental protection, conservation, and sustainable development. Noteworthy among these legislations are:

1. Environment Protection Act (1986)
2. Water (Prevention and Control of Pollution) Act (1974)

3. Air (Prevention and Control of Pollution) Act (1981)
4. Forest (Conservation) Act (1980)
5. Wildlife Protection Act (1972)
6. Biological Diversity Act (2002)
7. National Green Tribunal Act (2010)
8. Solid Waste Management Rules (2016)
9. Plastic Waste Management Rules (2016)

A Glimpse of National Environmental Policy

The National Environment Policy builds on the existing policies like National Forest Policy, 1988; National Conservation Strategy and Policy Statement on Environment and Development, 1992; and the National Water Policy, 2002; National Agriculture Policy, 2000; National Population Policy, 2000; etc.

It is meant to serve as a guide for action in the areas of regulatory reform, environmental conservation programs and initiatives, and the study and enactment of legislation by the central, state, and local governments. The overriding idea of this policy is that, although protecting environmental resources is vital to ensuring everyone's livelihood and well-being, the best way to guarantee conservation is to make sure that those who depend on a given resource can make more money from conservation than from resource degradation.

The National Environmental Policy is the first complete strategy formulation project for environmental preservation. It considers the causes of degradation of land and suggests recommendations for corrective actions that are necessary in this regard. Fiscal, tariff, and sector-specific policies are among the variables that may unintentionally contribute to land degradation. Traditional land-use practices combined with science-based approaches such as large-scale dissemination, pilot-scale demonstrations, adoption of multi-stakeholder partnerships, promotion of agro-forestry, organic farming, environmentally sustainable cropping patterns, and adoption of effective irrigation techniques are the remedial measures proposed to address the issue.

Impact of Judiciary on Environmental Governance of the Country

The Indian judiciary, especially the higher judiciary made up of the Supreme Court of India and the State High Courts, has taken a significant initiative in environmental regulation. The function of the judiciary in environmental governance is discussed in terms of how it influences the implementation of current environmental legislation and how it intervenes in the process of creating environmental policies. In order to comprehend the various facets of the

judiciary's role in India's environmental governance, a brief analysis of a few chosen environmental cases has been conducted.

*M.C. Mehta and Anr. vs. Union of India and Ors.*³ addresses the notion of public liability. This case is also known as the Oleum Leakage Case. The Supreme Court of India issued a landmark decision that established the principle of Absolute Liability. The Court held that permission for operating any hazardous enterprise near human settlement could not be granted, and the industry was relocated.

*M.C. Mehta vs Union of India (Ganga Pollution Case)*⁴ The court ruled that several water-borne diseases may arise as a result of contaminants in the water and are exceedingly harmful to the population as a whole. On the subject of whose job it was, the court decided that it was the industries' responsibility to guarantee that their waste was properly treated and subsequently discharged.

*Indian Council for Enviro-Legal Action vs. Union of India*⁵ the court ruled that the financial expenses of preventing or remedying pollution-related harm should be borne by the companies who create the pollution under the "Polluter Pays Principle".

*Animal Welfare Board of India vs. A. Nagaraj and Ors.*⁶ In this decision, the Supreme Court outlawed Jallikattu, as well as other animal races and fights. It was observed by the court that the Bulls cannot be performing animals.

*M.C. Mehta vs. Union of India (Taj Trapezium Case)*⁷ The Taj Mahal's decline was impacted by both socio-economic causes and pollutants from chemicals, according to the Supreme Court. The court ordered 292 companies to switch to cleaner fuels such as propane rather than coke/coal or face relocation. The Gas Authority of India Limited was entrusted with overseeing the transition to gas. The court also acknowledged the fundamental rights of workers in these businesses and awarded compensation for wages lost during relocation.

Other landmark judgments

- Doon Valley Lime Stine Quarrying Case
- Ratlam Municipality vs. Vardichand Case
- Narmada Dam Case
- Ganga Water Pollution case and Bhopal Gas Tragedy Case
- Godavarman Case
- Delhi Vehicular Pollution Case

Conclusion

In conclusion, the research on environmental policy and governance underscores the pivotal need for coordinated endeavors in addressing environmental challenges and advancing sustainability. The intricate interplay between policy formulation and effective governance structures emerges as a central element in the pursuit of a harmonious equilibrium between human activities and the preservation of our planet. Furthermore, the historical examination of early environmental movements and scrutiny of contemporary international agreements illustrate the global dimension of environmental concerns. The research has also spotlighted the evolution of environmental governance, with institutions like the National Green Tribunal serving as specialized bodies to adjudicate environmental cases. In essence, the findings highlight that environmental policy and governance are integral components of a sustainable future. To safeguard our ecosystems, biodiversity, and the well-being of present and future generations, ongoing efforts to refine policies, strengthen governance structures, and foster global cooperation are not just a responsibility but a collective imperative for the well-being of the planet and its inhabitants.

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17. Cultural Heritage Preservation and Conservation with Special Reference to Chhatrapati Shivaji Maharaj Terminus (CSMT)

Ms. Julee Bahadare

Anand Vishwa Gurukul College of Law

Abstract

Preserving and conserving heritage is essential in order to uphold cultural identity and historical importance. This paper focuses on a distinctive study of the Chhatrapati Shivaji Maharaj Terminus (CSMT) which is an iconic railway station situated in the heart of Mumbai, designated as a UNESCO World Heritage Site. CSMT stands as a symbol of architectural grandeur, reflecting the Victorian-Gothic style prevalent in the late 19th century.

The primary objective of this study is to comprehensively examine the importance of CSMT station as a heritage site and diverse challenges associated with the preservation and conservation of CSMT, encompassing its architectural, cultural, and social dimensions. The study also involves an in-depth analysis of the factors contributing to the deterioration of CSMT, ranging from environmental elements to human activities. This study also adopts a multidisciplinary approach, incorporating perspectives from architecture, history, and preservation.

Keywords- Heritage, conservation, Chhatrapati Shivaji Maharaj Terminus (CSMT), architecture, history.

Research Methodology

This paper comprises of qualitative data which was collected after reviewing the literature. Secondary sources were used while making this paper. Descriptive research methodology was used to formulate this study.

Introduction

India is a tapestry of various customs, rituals, art forms, cuisine, music, dance, clothing, and languages, with each region of India having its unique cultural identity. Borne out of the rich history of India are the heritage sites in India that hold a captivating story about its incredible cultural dynamism. According to the definition from 'The United Nations Education, Scientific

and Cultural Organization (UNESCO): “Heritage is our legacy from the past, what we live with today, and what we pass on to future generations, our cultural and natural heritage are both irreplaceable sources of life and inspiration”¹ Heritage is a range of traditions, culture, monuments, and objects that have existed over the years. CSMT is among one such heritage sites which have seen amalgamation of various cultures through architecture.

The Colonial rule felt the need of a central railway terminus for Bombay which was built primarily for the army movements and it further led to enhancement of connectivity for trade purpose as well.² Construction of the terminus began in 1878 and it was completed in about ten years. A British architect named as Frederick William Stevens was commissioned to design the terminus. He combined Victorian Gothic Revival which had become a trend in England in the 1820’s and traditional Indian architectural styles, resulting in a unique and grand structure.³ The Gothic Revival style comprises of pointed arches, and CSMT prominently features these arches. Stained glass windows, which is a hallmark of Gothic architecture, are found in CSMT. The existence of large domes and smaller turrets is more reminiscent of traditional Indian architecture. The exterior of CSMT features statues of animals like lions and tigers, which forms a significant part in Indian culture and mythology.

Importance of Chhatrapati Shivaji Maharaj Terminus as a Heritage Site

Heritage reflects the identity, values, and history of a community as it plays a significant role in shaping the cultural expression of the society. Heritage sites hold great importance for a range of reasons a few being cultural and historical significance, tourism and economic factors, environmental importance, social and cultural identity. CSMT also encompasses all these factors and it also emphasizes on cultural amalgamation which occurred due to colonization in India. The construction of CSMT began in 1878 and was completed in 1887 to commemorate Queen Victoria's Golden Jubilee. CSMT was officially inaugurated on May 20, 1887. The station has witnessed significant historical events, including being the location where the first train in India departed from Bori Bunder on April 16, 1853. It stood as a witness to the evolution of Mumbai as a major trade and commerce hub during the British colonial era and continued to be the same in post-independence era as well.

In 1996, the station underwent a significant name change to honor the Maratha warrior king, Chhatrapati Shivaji Maharaj. It was named as Chhatrapati Shivaji Terminus (CST).⁴ The process of renaming aimed to restore historical and cultural relevance by acknowledging the

contributions of Shivaji Maharaj to Indian history.⁵ Again in May 2017, the home ministry officially sent a letter to the state government denoting the name change due to resolution passed by the government, following which the station was yet again renamed as the Chhatrapati Shivaji Maharaj Terminus (CSMT).⁶

CSMT was designated as a UNESCO World Heritage Site in 2004 as part of the Victorian Gothic and Art Deco Ensembles of Mumbai. This recognition highlighted the architectural and historical significance of CSMT on the global stage. The station also houses a museum called the "Heritage Gallery," which is located on the first floor of the building. The Heritage Gallery showcases the history and heritage of the Central Railway. It provides visitors with insights into the development of the railways in India, the construction of the CSMT building, and the evolution of the railway system over the years. CSMT is an intrinsic part of our built heritage as it consists of various elements which depicts Indian culture. It has endured various challenges, including the terrorist attacks in 2008. Despite facing adversities, the station continues to stand tall, symbolizing the resilience and strength of the people of Mumbai. It serves as a reminder of the city's ability to overcome obstacles and move forward and it will continue its legacy for the future generations to witness a splendour of our shared past.

Need for Preservation of CSMT

Preservation of heritage refers to the practice of protecting, conserving, and maintaining cultural, historical sites and traditions that hold significance for present and future generations. It involves various activities and approaches aimed at safeguarding and maintaining the integrity, authenticity, and value of heritage resources. CSMT was built as a key part of the larger project to enhance connectivity during the colonial era. CSMT is a living repository of Mumbai's cultural identity. Serving as a symbol of the city's rich heritage, the station encapsulates the spirit of Mumbai and its people. Preserving CSMT is akin to safeguarding a cultural anchor that connects the present generation to the collective history and traditions of the city. The preservation of its distinctive architectural elements contributes to the overall architectural diversity of the region. It stands as a testament to the craftsmanship and architectural accomplishments of its era. CSMT is a cultural landmark that holds immense significance for the people of Mumbai.⁷ In the context of CSMT, all these reasons collectively underscore the necessity for its preservation, acknowledging its cultural, historical, and architectural significance.

Key Factors that Contribute to the degradation of CSMT

Aging and Deterioration

The natural aging process and wear-and-tear leads to the degradation of construction materials like concrete, stone, and metal over time.

Environmental Degradation

As Mumbai is a metropolitan city, there is a lot of pollution, climate change occurring due to global warming, and environmental degradation also impacts CSMT's physical structure and surroundings. Air pollution, for example, contributes to the deterioration of architectural elements, affecting the station's aesthetic appeal and structural integrity.

Increased Operational Demands

As Mumbai's population and economic activities grows excessively, there is an increased demand on the station's operational capacity. Handling a higher volume of passengers and freight without corresponding upgrades and improvements leads to congestion, delays, and a decline in quality of the station.

Urban Development Stresses

The ongoing urban development exerts pressure on historical structures. Construction activities, alterations in land use, and heightened vehicular traffic induces vibrations and stress, affecting the structural integrity of the building. As it is a major hub, development projects are an inseparable part of its surroundings which makes it exposed to the dust particles and vibrations occurring due to huge machinery used in the construction process. Preserving historical structures like CSMT necessitates a holistic approach involving regular maintenance, strategic restoration efforts, and a steadfast commitment to sustainable urban development practices.

Some suggestive measures for preserving CSMT as heritage site are stated below:

Regular Maintenance and Inspection

Establishing a routine maintenance schedule to inspect and address any structural or aesthetic issues is very important. Regular checks can help identify and rectify problems before they become more extensive.

Implementation of Heritage Conservation Plan

Developing a comprehensive conservation plan that outlines specific strategies for preserving the historical and architectural elements of CSMT can help in conserving the station

more effectively. This plan could address restoration, repair, and maintenance activities while respecting the authenticity of the original design.

Public Awareness Campaigns

Conducting awareness campaigns to educate the public about the historical significance of CSMT is the need of the time. It will help in fostering a sense of pride and ownership among the local community, encouraging them to actively participate in its preservation. Not many people are aware about the "Heritage Gallery" museum which is an important element of the station, therefore awareness must be created regarding the Gallery and importance of CSMT, through various tourism pamphlets and magazines which will indulge a sense of pride among the individuals and create a collective consciousness.

Constituting Heritage Commission

The root cause of major problems in preservation and conservation of manmade heritage in India has been the absence of proper system and rational approach to identify and manage the heritage. It would be desirable to constitute "Heritage Commissions" at the centre and state and regional levels which can contribute in the preservation and conservation of important Heritage sites like CSMT. It is enforceable by the 74th Constitutional Amendment Act, 1992 to formulate such local bodies.

Conclusion

CSMT is a brilliant example of Victorian Gothic architecture blended with traditional Indian influences. Designed by Frederick William Stevens, the station is a visual masterpiece, showcasing intricate carvings, domes, and turrets. Its architectural grandeur makes it a symbol of Mumbai's rich history and cultural heritage. The building is adorned with pointed arches, spires, turrets, and intricate stone carvings. It is a living heritage site and a cultural icon. Its architectural splendour, historical significance, and role as a transportation hub make it a focal point for locals and visitors alike, emphasizing the enduring importance of CSMT in the cultural and historical narrative of Mumbai. Community efforts along with government initiatives can help in conserving and preserving this Heritage structure. As there have been a government initiative to renovate CSMT station, the renovation plan must not compromise with the original architectural pattern as it is a testament of our past. CSMT, being a unique tangible cultural heritage, forms a sense of belonging and shared legacy among native people.

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18. Impact of Social Media on Intercultural Adaptation

Nisha Gaikwad

Anand Vishwa Gurukul College of Law

Abstract

Social media helps individuals quickly create and share content globally. The existence of social media has influenced social life in society. The impact of social media on young generation has a very broad influence on their lifestyle and culture. The impact of media in both developed and developing countries is increasingly admired for reasons such as social and social welfare. The social media has made people's behavior patterns experience a shift in culture, ethics, and existing norms. Information and Communication Technology is the application of knowledge and skills used by humans to convey information or messages with the aim of helping solve human problems or social activities in order to achieve communication goals. Also, sharing of culture is the other major outcome of social media where people are nearly connected to each other even they are sitting on opposite poles of the globe. This has enabled easy cultural adaptation among the people travelling abroad for work purpose, student's visiting other countries to attain education & frequently travelling tourists. Because of the growing network the curiosity to know each others culture has also reached heights & people are enjoying this change. In this article I am focusing Social media's impact on intercultural adaptation.

What is Social Media?

Social media is a collective term for websites and applications that focus on communication, community-based input, interaction, content-sharing and collaboration.

From Instagram and TikTok to YouTube and WhatsApp, the social media platforms that users have at their disposal are endless. While social media is mainly used by individual people, brands and creators can also use social media marketing to connect with their audience, build their brand, and sell their products or services.

Social media has completely revolutionized the way modern-day society communicates and shares ideas, information, and content. What really separates social media from other types of media is that it's a two-way style of communication rather than a one-way communication

style built to deliver information with no way to reply back, such as newspapers, radio, and television.

What are Some Examples of Social Media Platforms?

The major social media platforms (at the moment) are Instagram, Facebook, WhatsApp, TikTok, Twitter, LinkedIn, Pinterest, YouTube, and Snapchat, with Facebook being the largest social media platform at nearly 3 billion people using it monthly.

To make things easier, we researched the top social media platforms in 2023. Some will be familiar to you, while others might sound new. We recommend reading through that list to see what social media apps might work best for you and your brand. And remember, you don't have to be on every social media platform to have a successful brand.

How Many People use Social Media?

As of January 2023, there are 4.76 billion active social media users around the globe, which means about 59% of the total global population uses social media. This number increased by 3% compared to the previous year.

Here are the Top 6 Social Networking Platforms of 2023, Ranked by Monthly Active Users (MAUs)

- Facebook: 2.96 billion MAUs
- YouTube: 2.2 billion MAUs
- WhatsApp: 2 billion MAUs
- Instagram: 2 billion MAUs
- WeChat: 1.26 billion MAUs
- TikTok: 1 billion MAUs

Adaptation to a New Culture

As a result of people's experiences moving from one culture to another and integrating successfully, the multicultural world has become a better place. When someone enters a new culture, they may first find themselves in a state of "disequilibrium," but they will eventually find their way back to equilibrium. This is what is meant by the term "intercultural adaptation".

Being in this position is a natural result of the fact that the individual lacks knowledge of the new culture. New cultural adaptation is defined as "the dynamic process by which individuals establish (or restore) and maintain a relatively stable, reciprocal, and functional relationship with the environment upon moving to an unfamiliar cultural environment".

Adaptation to a new culture involves a variety of aspects, including behavioural and psychological changes, since people from different cultures interact with each other in different ways. Engaging with a new culture necessitates an individual's ability to adapt as well as his or her ability to learn about the new culture. This includes having an apparent understanding of the distinctions and similarities between one's own culture and the new civilizations. When it comes to intercultural competency, for example, curiosity and openness are important qualities to cultivate. As part of the intercultural process, communication is critical in breaking down barriers and eventually adapting to a new culture via speaking with people from the new culture. While many of these talents may be learned, and taught, many of them can only be learned and discovered by the individual, especially in the initial few days of arriving at a new cultural environment.

In terms of psychological aspects, emotions play a key role in the adjustment process. People can think clearly about intercultural occurrences without resorting to psychological barriers if they have a strong emotional control (Matsumoto, Hirayama, and Le Roux, 2006). As a result, if people are unable to manage their emotions, they may have a difficult time adapting to new cultures. Because of this, people need to regulate their emotions in order to adapt to the host culture more easily.

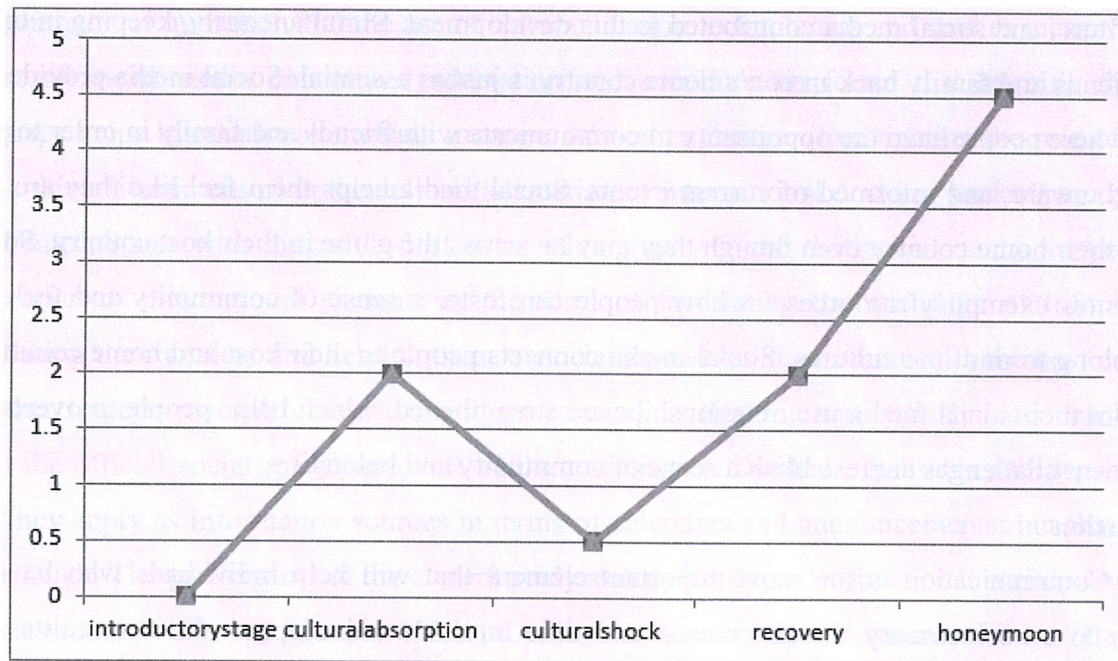
Models of Intercultural Adaptation

One of the most commonly used models in the literature on intercultural adaptation is called the recuperation model. This model describes how people adapt to a new culture by recuperating from their previous experiences, relearning, and then reintegrating into their new environment

The Recuperation model explains the "cultural shock" phenomena which is used to explain the recovery concept (Oberg, 1960). Culture shock refers to an individual's worry when they enter a new cultural environment (Oberg, 1960). When a person is at ease, this type of anxiety subsides. When a newcomer experiences culture shock, he or she must overcome it before adapting to the new environment. After the honeymoon stage, the sojourners begin to adapt by integrating into their hosts' society. When the sojourners reach this point, they're in crisis mode (i.e., culture shock). U-curve recovery is possible for sojourners who have overcome culture shock after a given period of time and are able to adapt progressively to their new culture

until they achieve a state of full adjustment, in which they are able to operate satisfactorily in their new culture (Chen, 2013).

Chart representation on Recuperation model



How Does Social Media Actually Helps in Cultural Adaptation

The study provides rich information regarding the relationship between the usage of social media and intercultural adaptation. For the purpose of this study focuses on 3 key concepts, including connection/relationship, adjustment, and community. The results of this study emphasize the importance of how seeking connections on social media sites impacts intercultural adaptation. One can infer that people strengthen, build, and maintain relationships through social media. The interactions and conversations establish interconnectedness, which is an important component for communicating with people in the host and home countries. These connections and relationships are important for overcoming adjustment challenges and establishing a sense of community. Adjustment is an essential factor in intercultural adaptation, and social media influences this process. Social media serves as a place for interaction and conversation in order to get in touch with contacts abroad and ask about the intercultural experience. Furthermore, becoming aware of stereotypes is part of the adjustment process. The information on the different points of view was available to them, and simply being aware of and recognizing the different impressions create a wider world view. Connection/relationship also

influences one's sense of community while adapting to a new culture. After arriving in the new country, people meet each other in new country and they used social media to connect to the individuals. Forming these relationships created a sense of belonging and integration into the new culture, and social media contributed to this development. Simultaneously, keeping in touch with friends and family back in one's home country is just as essential. Social media provides an outlet where people have the opportunity to communicate with friends and family in order to stay updated, aware, and informed of current events. Social media helps them feel like they are still part of their home country even though they may be across the globe in their host country. Social media sites exemplify resources for how people can foster a sense of community and feel like they belong to multiple cultures. Social media connects people to their host and home countries, and from their social media use, relationships are strengthened, which helps people to overcome adjustment challenges and establish a sense of community and belonging.

Conclusion

Communication is the most important element that will help individuals who have to migrate to a new country for any reason and time interval, and adapt to the new culture. In today's digital world, social media is the medium in which young individuals prefer to communicate most, even with their closest relatives. Social media, which facilitates, accelerates and colorizes mutual communication, also offers very useful opportunities for young people who experience international studentship.

Through social media platforms, international students can communicate with individuals both from their homeland and from the country where they study, and they can obtain information that will facilitate their adaptation. Educational preferences of young people to invest in their future are now beyond the borders of home countries. In this respect, international studentship has become a reality of today. Therefore, world states see this phenomenon as a commodity and compete to attract international students to their countries. In the intercultural adaptation process, individuals use social media for various purposes such as getting to know other cultures and countries, establishing relationships with friends and classmates, and being informed about events from their own countries.

Even when they are in their own country, international students can obtain sufficient and correct information to choose the countries and universities that may be suitable for them through social media. Moreover, social media also helps with the cultural adaptation process,

especially in learning the language of the country. Likewise, it has been stated that social media is an important source of information in terms of recognizing the cultural values and understandings of the country. Similarly, some studies investigating the relationship between the phenomenon of migration and the use of communication technologies and studies measuring the effect of social media on cultural adaptation and acculturation found that learning the new language helps international students increase cultural exchange. Investigating the role of social networking sites in ensuring the cultural adaptation of international doctoral students studying in the United States with the method of auto-ethnography found that social media supports the adaptation of international students in the form of facilitating the exchange of information, alleviating their anxiety and helping them to socialize and build community in the host country. Another important result obtained from our research is that international students can benefit from the official social media accounts of the universities, faculties, institutes and departments that they apply as information sources in terms of calendars and announcements; but that this is not enough. The participants of the current study stated that the most functional social network is the classroom WhatsApp groups, which provide mostly interpersonal communication. Based on this finding, it is necessary to make suggestions to use the official social media accounts of the institutions more actively, to provide foreign language support for new or prospective international students, and to use them more interactively in accordance with the spirit of social media. Social media platforms facilitate intercultural adaptation depending on how proficient international students are in using the host language, who they communicate with on social media, and how they use social media. As a result, in the light of all the results obtained in this study, it is possible to suggest that social media helps international students learn the culture, values and characteristics of the country they come to study and provide their cultural adaptation in a faster and healthier way.

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21. Effects of Climate Change and it's Impacts: A Comprehensive Overview

Sohini Chattopadhyay

Assistant Professor, Anand Vishwa Gurukul College of Law, Thane.

Abstract

Climate change, driven by human activities, is a pressing global concern with widespread repercussions. This concise overview explores its multifaceted impacts on the environment, society, and economy. Scientific evidence reveals rising global temperatures, altered precipitation patterns, and heightened frequency of extreme weather events, posing threats to ecosystems, biodiversity, and human well-being. Shifts in species distribution, ecosystem disruptions, and biodiversity loss are evident ecological impacts. Human societies grapple with challenges such as rising sea levels, changing agricultural conditions, and water scarcity, affecting food security, livelihoods, and community stability. Health risks, including the spread of diseases and heat-related illnesses, compound vulnerabilities. Urgent global action is imperative, necessitating sustainable practices, renewable energy adoption, and resilient adaptation strategies. This abstract underscores the need for interdisciplinary research and international collaboration to address the interconnected challenges posed by climate change, fostering effective strategies for a more sustainable and resilient future.

Keywords: Climate Change, Global Warming, Environmental Impacts, Biodiversity Loss, Extreme Weather Events, Sustainable Development.

Introduction

Climate change poses a significant challenge for our planet. It is a result of human activities that release substantial amounts of gases into the atmosphere, contributing to the Earth's warming. This warming triggers various alterations, with far-reaching consequences for our surroundings. This overview aims to examine the impacts of climate change on our environment, lifestyle, and economic well-being.

Visualize an increase in temperature and changes in precipitation patterns, disrupting the habitats of plants and animals. This alteration makes it challenging to cultivate the necessary

food. Coastal areas are grappling with problems caused by rising sea levels, creating hardships for many communities.

Grasping the essence of these transformations is essential. We will delve into the methodologies scientists employ to understand these shifts and explore actionable measures to foster a healthier and safer planet for all.

Research Methodology

The main objective of this research is for investigating the various effects of climate change and how it employs a versatile approach to systematically explore the global phenomenon. By integrating both descriptive and exploratory elements, the methodology seeks to gain a holistic understanding of the varied effects on the environment, society, and economy. The data collection process merges quantitative analysis, utilizing authoritative climate datasets, with qualitative insights obtained from various reports and case studies. The analysis utilizes a combination of quantitative tools and qualitative thematic analysis to extract meaningful patterns. The methodology conscientiously acknowledges potential limitations and concludes with a comprehensive presentation of findings, emphasizing their implications for sustainable development.

Climate Change and its Effects on Weather Patterns¹

As global temperatures increase, significant alterations in weather patterns emerge, resulting in heightened intensity and unpredictability of occurrences such as droughts, hurricanes, and floods. Unusual weather events, scarcely witnessed in the lifetimes of our grandparents, are now becoming more prevalent in our own. However, the impacts of climate change exhibit regional disparities, inducing severe drought in one area while escalating the potential for floods in another.

As per the findings of the Intergovernmental Panel on Climate Change (IPCC), the Earth has undergone a warming of 1.1 degrees Celsius (1.9 degrees Fahrenheit) since the onset of the preindustrial era 250 years ago. Scientists emphasize the critical need to address the fundamental causes of climate change, specifically the combustion of fossil fuels like coal, oil, and gas. Failure to act on these root issues may propel the planet towards a dire scenario, witnessing a potential 4- degree Celsius (7.2 degrees Fahrenheit) temperature rise by the year 2100.

Global Warming and its Effects

Global warming is a widespread phenomenon characterized by the gradual increase in the Earth's average temperature due to the buildup of greenhouse gases in the atmosphere. Gases like carbon dioxide and methane trap heat, resulting in the commonly known warming effect referred to as global warming.²

The Indian Constitution forms the basis of environmental laws, emphasizing protection and enhancement. The "Directive Principles of State Policy" mandate states to safeguard the environment and wildlife. Citizens are constitutionally bound to preserve nature. Since the late 1980s, the judiciary has significantly shaped environmental policies, recognizing the right to a clean environment under Article 21. Principles like sustainable development and the "polluter pays" concept were judicially acknowledged before being enshrined in the National Green Tribunal (NGT) Act of 2010. The Ministry of Environment collaborates with regulatory bodies to enforce environmental laws. India's legal system includes the Supreme Court and state-specific High Courts, while the NGT expedites environmental cases nationwide.³

The Climate Change Bill 2015, was passed to set a target for the reduction of targeted greenhouse gas emissions; to establish a National Committee on Climate Change; to provide for carbon budgeting and carbon trading schemes and to encourage other such activities to reduce greenhouse gas emissions and for matters connected therewith or incidental thereto.⁴

Effectively addressing global warming necessitates collaborative international efforts to reduce greenhouse gas emissions, transition to renewable energy sources, and implement sustainable practices. Both India and the global community must collaborate to mitigate the impacts of global warming and enhance resilience to the changing climate.

Sustainability and Climate Change

Sustainability amid climate change entails the adoption of practices and policies that safeguard both the environment and society, simultaneously addressing and adapting to the impacts of a shifting climate. As the Earth confronts unprecedented challenges from climate change, the embrace of sustainability emerges as pivotal for constructing resilience and ensuring a steady, fair future.⁵

Transition to Renewable Energy

Shifting away from fossil fuels towards renewable sources like solar, wind, and hydropower is a vital facet of sustainable practices. This transition curtails greenhouse gas emissions, mitigating the catalysts of climate change.

Responsible Resource Management

Sustainable practices revolve around prudent resource management to curtail environmental degradation. This encompasses judicious water usage, diminished deforestation, and the endorsement of circular economies emphasizing recycling and waste reduction.

Preservation of Biodiversity

Safeguarding biodiversity is fundamental to sustainability. With climate change jeopardizing various species and ecosystems, sustainable endeavors concentrate on conserving habitats, facilitating restoration, and shielding endangered species to preserve ecosystem equilibrium.

The Indian Constitution forms the cornerstone of environmental laws, outlining state duties to protect nature and citizens' fundamental responsibility to conserve the environment. Since the late 1980s, the judiciary has played a pivotal role in shaping environmental policies, expanding the constitutional right to life to include a clean and pollution-free environment under Article 21. Sustainable development, the "polluter pays" principle, and the precautionary principle were initially recognized by the judiciary before being codified in laws like the National Green Tribunal (NGT) Act of 2010.⁶

The Ministry of Environment, Forest & Climate Change (MoEFCC), in collaboration with the Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs) for each state and union territory, administers and enforces environmental laws. Specialized regulatory bodies oversee diverse environmental laws, including the State-level Environment Impact Assessment Authority, the Ozone Cell, and the Forest Advisory Committee. India has one Supreme Court, and each state has its own High Court. Notably, the NGT, with multiple benches across the country, expedites environmental cases and provides relief and compensation for damages to individuals and property.

In essence, sustainability amid climate change embodies a comprehensive approach that acknowledges the interconnectedness of environmental, social, and economic systems.

Biodiversity and Effects of Climate Change

The impacts of climate change on biodiversity are increasingly apparent, signaling a pivotal realm of research and concern. Human-induced activities, particularly the combustion of fossil fuels and deforestation, are driving climate change, presenting profound consequences for Earth's diverse ecosystems and the myriad species they harbor.⁷

In 2002, the Indian Parliament implemented the Biological Diversity Act to safeguard biodiversity and facilitate the sustainable management of biological resources in partnership with local communities. This legal measure is in harmony with India's dedication to the United Nations Convention on Biological Diversity (CBD).⁸

The main aim of the Act is to ensure the preservation of biological diversity, promote the sustainable use of its components, and establish fair resource utilization to prevent undue exploitation of biodiversity. Given India's prominent status as one of the globe's most biologically diverse nations, this legislation is crucial for safeguarding its biological heritage.

Some of the important features of the Biological Diversity Act 2002 encompass:

1. Regulation of access to the nation's biological resources
2. Conservation and sustainable management of biological diversity
3. Safeguarding local communities' knowledge regarding biodiversity
4. Equitable distribution of benefits with local conservationists and knowledge holders
5. Protection and rehabilitation of endangered species
6. Engagement of state government institutions through dedicated committees

Offenses under this Act are both non-bailable and cognizable. Grievances related to benefit sharing can be adjudicated at the National Green Tribunal (NGT) for decisions made by the National Biodiversity Authority or a State Biodiversity Board.

There are several types of legislation related to bio-diversity in India. Some of them are like-9

- Fisheries Act 1897
- Indian Forests Act 1927
- Prevention of Cruelty to Animals 1960
- Biological Diversity Act 2002
- Environment Protection Act 1986
- Air (prevention and control of pollution) act 1981

- Forest Conservation Act 1980
- Water (prevention and control of pollution) act 1974
- Wildlife protection act 1972

Overall, the impacts of climate change on biodiversity are multifaceted, emphasizing the pressing need for extensive research and conservation initiatives.

Case Laws

Ridhima Pandey v. Union of India¹⁰

Summary

In March 2017, nine-year-old Ridhima Pandey lodged a climate change case with India's National Green Tribunal. Advocating through the Public Trust Doctrine and India's Paris Agreement commitments, she stressed the necessity for increased efforts to combat climate change. Pandey, acting on behalf of children and future generations, asserted the entitlement to a healthy environment. Despite India's significant greenhouse gas emissions, the tribunal rejected the case on January 15, 2019, arguing that climate change is addressed in impact assessments under the Environment Protection Act and that international agreements are already incorporated into government policies.

Society for Protection of Environment & Biodiversity v. Union of India

In 2016, an environmental society contested the NGT against a draft notification exempting building projects from environmental clearance. The society argued that unregulated construction would irreversibly harm the environment, conflicting with India's international commitments under the Rio Declaration 1992 and Paris Agreement 2015. The Ministry of Environment and Forests defended the draft as a policy for affordable housing. The NGT sided with the environmental society, stating the draft weakens environmental clearance, violating the non-regression principle in international environmental law. The ruling deemed specific project exemptions illegal. The construction sector contributes significantly to carbon emissions, requiring environmental clearances for responsible business practices linked to climate change and SDGs.

Conclusion

In conclusion, the extensive examination of the effects of climate change and its impacts underscores the urgency and complexity of the challenges facing our planet. The evidence

presented illuminates profound alterations occurring across ecosystems, societies, and economies, emphasizing the imperative for immediate action.

Addressing the impacts of climate change necessitates global collaboration and transformative action. Imperative components include sustainable development practices, a rapid transition to renewable energy sources, and the implementation of resilient adaptation strategies. The interconnected nature of these challenges underscores the importance of interdisciplinary research and international cooperation in developing effective strategies.

As we navigate the intricacies of a changing climate, the research presented in this overview acts as a call to action. It highlights the need for informed decision-making, innovative solutions, and the commitment of individuals, communities, and nations globally. A comprehensive understanding of the effects and impacts is crucial for collective efforts to build a more sustainable, resilient future for our planet. The time to act is now, and the path forward requires a unified effort to address the multifaceted challenges posed by climate change.

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