POL-4066

GAUHATI UNIVERSITY
Centre for Distance and Online Education

M.A. Fourth Semester

(under CBCS)

POLITICAL SCIENCE

Paper: POL 4066

ENVIRONMENT AND POLITICS

Contents:

BLOCK I : ENVIRONMENTALISM AND POLITICAL THEORY

BLOCK II : ENVIRONMENT AND DEVELOPMENT

BLOCK III: ENVIRONMENTAL GOVERNANCE

BLOCK IV: ENVIRONMENTAL ISSUES IN NORTH EAST INDIA

SLM Development Team:

Head, Department of Political Science, GU
Programme Coordinator, MA in Political Science, GUCDOE
Dr. Barnalee Choudhury, Assistant Professor, GUCDOE
Dr. Chayanika Sarma, Assistant Professor, GUCDOE
Dr. Jonaki Dutta, Assistant Professor, GUCDOE

Course Coordination:

Dr. Debahari Talukdar	Director, GUCDOE
Prof. Dhruba Pratim Sharma	Programme Coordinator, GUCDOE Dept. of Political Science, G.U.
Dr. Barnalee Choudhury	Assistant Professor, GUCDOE
Mr. Dipankar Saikia	Editor SLM, GUCDOE

Contributors:

Dr. Chayanika Sarma Assistant Professor GUCDOE	Block- I Block- II (Units- 4 & 5) Block- III (Unit- 2)
Dr. Jonaki Dutta Assistant Professor GUCDOE	Block- II (Units- 2, 3 & 6) Block- III (Units- 1 & 3) Block- IV (Units- 2 & 3)
Priyanka Kumari Kushwaha Research Scholar Dept. of Pol., Science Gauhati University	Block- II (Unit- 1) Block- III (Unit- 4)
Rashmi Saikia Research Scholar Dept. of Pol., Science Gauhati University	Block- IV (Units- 4 & 5)
Arunima Deka Assistant Professor OKD Institute of Social Change and Development	Block- IV (Unit- 1)

Content Editor:

Dr. Joanna Mahjebeen
Assistant Professor,
Dept. of Political Science, G.U.

Cover Page Designing:

Bhaskar Jyoti Goswami	GUCDOE
Nishanta Das	GUCDOE

ISBN: 978-81-989447-5-7
June, 2025

© Copyright by GUCDOE. All rights reserved. No part of this work may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise.
Published on behalf of Gauhati University Centre for Distance and Online Education by the Director, and printed at Gauhati University Press, Guwahati-781014.

CONTENTS

Page No.

BLOCK I : ENVIRONMENTALISM AND POLITICAL THEORY 04-140

Unit 1: Meaning and Concept of Environmentalism

Unit 2: The Evolution of Environment Discourse

Unit 3: Central Ideas of Green Political Thought

Unit 4: Ecofeminism

Unit 5: Eco-Socialism

BLOCK II : ENVIRONMENT AND DEVELOPMENT 141-280

Unit 1: New Paradigm of Development

Unit 2: Sustainable Development

Unit 3: Environmental Degradation

Unit 4: Ecological Modernisation

Unit 5: Ecological Citizenship

Unit 6: Urbanization and Environment

BLOCK III: ENVIRONMENTAL GOVERNANCE 281-381

Unit 1: Global Environmental Conventions

Unit 2: Environmental Movements in India

Unit 3: Environmental Jurisprudence and Environmental Policies in India

Unit 4: Environment and Civil Society

BLOCK IV: ENVIRONMENTAL ISSUES IN NORTH EAST INDIA 382-502

Unit 1: Issues Relating to Water and Forest Resources in Northeast India

Unit 2: Environment and Natural Disasters

Unit 3: Environment and Anthropogenic Disasters

Unit 4: Environmental Hazards and Social Vulnerability

Unit 5: Indigenous Communities and CPR

BLOCK- I

ENVIRONMENTALISM AND POLITICAL THEORY

Unit 1: Meaning and Concept of Environmentalism

Unit 2: The Evolution of Environment Discourse

Unit 3: Central Ideas of Green Political Thought

Unit 4: Ecofeminism

Unit 5: Eco-Socialism

UNIT- 1

MEANING AND CONCEPT OF ENVIRONMENTALISM

Unit Structure:

1.1 Introduction
1.2 Objectives
1.3 Meaning and Features of Environmentalism
1.4 Dimensions of Environmentalism
1.5 Historical Evolution of Environmentalism
1.6 Forms and Approaches within Environmentalism
1.7 The critiques and the Contemporary Relevance
1.8 Summing Up
1.9 References and Suggested Readings

1.1. Introduction

Environmentalism has emerged as one of the most influential socio-political and ethical movements of the 20th and 21st centuries, addressing urgent issues related to the degradation of natural ecosystems and the sustainability of human life. It encompasses a wide array of beliefs, practices, and policies aimed at protecting the environment and promoting ecological balance. As climate change, deforestation, pollution, and biodiversity loss intensify, environmentalism has taken center stage in global discourse. Here in this unit you will be able to learn the meaning and evolution of the concept along with its forms and contemporary relevance.

1.2. Objectives

After reading this unit you will be able to

- *know* the meaning of environmentalism;

- *analyse* the concept and dimension of environmentalism;
- *examine* the forms and approaches within environmentalism;
- *trace* the evolution of environmentalism;
- *analyse* the contemporary relevance of environmentalism.

1.3. Meaning and Features of Environmentalism

Environmentalism is a broad philosophical, ethical, and political movement that seeks to protect, preserve, and restore the natural environment from the harmful impacts of human activities. At its heart, environmentalism recognizes that the Earth's ecosystems—forests, rivers, oceans, atmosphere, wildlife, and biodiversity—are not only essential for the survival of all living beings but also possess intrinsic value that warrants respect and care.

The term "environmentalism" emerged prominently in the 20th century as the world began to witness the alarming consequences of unchecked industrialization, urbanization, and resource exploitation. However, the concern for nature is not a new phenomenon. Many ancient cultures and indigenous societies lived in close harmony with nature, practicing sustainable methods of resource use. What distinguishes modern environmentalism is its organized, global, and often political nature, where collective action and institutional reforms are sought to address environmental degradation.

Environmentalism is not a single ideology but a diverse and multi-layered movement that encompasses a range of perspectives—from conservation and pollution control to climate activism, ecological justice, and sustainable development. Some environmentalists focus on the preservation of wilderness and biodiversity, while others are concerned with human health, environmental equity, and the rights of future generations.

At a deeper level, environmentalism challenges the anthropocentric worldview that sees nature merely as a resource to be exploited. Instead, it advocates for an ecocentric or biocentric perspective, where human beings are viewed as part of a larger web of life, sharing a mutual dependence with the natural world. In its practical expression, environmentalism can take many forms, such as: Advocating for laws to reduce pollution and deforestation, Promoting renewable energy sources, Participating in climate strikes or clean-up drives, Supporting organic farming and sustainable consumption, Opposing harmful industrial or mining projects etc.

Environmentalism also encompasses moral and ethical concerns, urging individuals, corporations, and governments to act responsibly toward the planet. It asks fundamental questions about how we live, consume, develop, and relate to the Earth and its ecosystems.

In today's context—marked by global climate change, species extinction, resource depletion, and environmental injustice—environmentalism is not merely a movement of choice but a necessity for ensuring a livable future for all life forms.

Environmentalism is a broad and evolving field of thought and activism concerned with the protection, preservation, and sustainable management of the natural environment. It arises from the growing awareness that human actions—industrialization, urbanization, deforestation, pollution, and overconsumption—have led to severe ecological crises such as climate change, biodiversity loss, and environmental injustice. Over time, environmentalism has developed into a multifaceted movement that includes ecological science, ethics, social justice, and political critique. It not only advocates for practical conservation measures but also challenges the deep-rooted assumptions about the relationship between humans and nature.

A central aspect of environmental thought is the nature-culture debate, which questions the traditional Western dichotomy that sees nature and human society as fundamentally separate. In this view, nature is often imagined as a pristine, untouched wilderness, while culture refers to human civilization and progress. However, many environmental thinkers argue that this binary is artificial and problematic. They point out that humans are part of nature, and that cultural practices have always shaped and been shaped by ecological conditions. For example, indigenous communities across the world have long maintained sustainable relationships with their environments, integrating cultural beliefs with ecological knowledge. The nature-culture debate thus encourages a more holistic understanding of human-nature interactions and challenges the dominance of modernist, industrial conceptions of environmental control.

Another key debate within environmentalism is the conflict between anthropocentric and ecocentric worldviews. Anthropocentrism is a human-centered perspective that values nature primarily for its utility to humans—whether for food, fuel, recreation, or economic gain. This approach has historically guided much of modern development and environmental management. In contrast, ecocentrism asserts that nature has intrinsic value, independent of its usefulness to humans. Ecocentric thinking promotes the rights of animals, plants, rivers, and ecosystems, and calls for a shift in ethics that respects the interconnectedness of all life forms. This debate has significant implications for environmental policies and philosophies, especially when deciding between conservation for human benefit versus preservation for nature's own sake.

Furthermore, environmentalism has increasingly focused on the politicisation of nature—the idea that environmental issues are not merely technical or scientific concerns, but deeply political. This

perspective highlights how access to natural resources and exposure to environmental harm are often unequally distributed along lines of class, race, gender, and geopolitical power. For instance, poor and marginalized communities are more likely to suffer from industrial pollution, deforestation, and climate-related disasters, while wealthy nations and corporations often control and exploit natural resources globally. Movements such as environmental justice, ecofeminism, and indigenous environmentalism have emerged in response, emphasizing that the struggle for environmental protection must also be a struggle for social justice. The politicisation of nature thus reframes environmentalism as a site of conflict, negotiation, and resistance within broader structures of power and inequality.

So you have learnt that environmentalism today is not only about preserving green spaces or protecting endangered species. It is a rich and dynamic field that interrogates the fundamental ways in which humans relate to the natural world. By engaging with debates like nature versus culture, anthropocentrism versus ecocentrism, and the political dimensions of ecological crises, environmentalism continues to evolve into a deeply ethical, philosophical, and political discourse with global relevance.

1.4 Dimensions of Environmentalism

You have learnt that the concept of environmentalism goes beyond simply advocating for nature or protesting pollution—it is a comprehensive framework that encompasses values, ideologies, practices, and policies aimed at protecting and improving the natural environment. At its core, environmentalism seeks to establish a sustainable and ethical relationship between human beings and the Earth's ecosystems. It arises from the recognition that human survival and well-being are intricately tied to the health of the

environment. This means that clean air, safe water, fertile soil, and balanced ecosystems are not luxuries, but essentials for life.

You should also learn here that environmentalism is both a reaction to environmental crises—such as climate change, deforestation, and pollution—and a forward-looking philosophy that promotes responsible behaviour, policy reforms, and technological innovation. It challenges the traditional developmental paradigm that prioritizes economic growth at the cost of ecological destruction and instead encourages an alternative model of development that respects planetary boundaries. Over time, environmentalism has evolved to address not only ecological issues but also social, economic, and political inequalities, making it a deeply interdisciplinary and intersectional movement.

Environmentalism and ecologism are often used interchangeably, but they represent distinct approaches to the relationship between humans and nature. Environmentalism typically focuses on managing and protecting the environment within the existing political and economic systems, advocating reforms such as pollution control, conservation, and sustainable development. It tends to be reformist and pragmatic, aiming to reduce environmental harm while maintaining growth and human-centered progress. Ecologism, on the other hand, is a more radical and philosophical stance that sees the environmental crisis as rooted in the very structures of modern industrial society. It calls for a fundamental rethinking of human-nature relationships, emphasizing the intrinsic value of nature**,** ecological limits, and the need to transform social, political, and economic systems to live in true harmony with the Earth. Thus, while environmentalism works within the system to improve it, ecologism seeks to reshape the system itself based on ecological principles.

It needs mention here that environmentalism is a multi-dimensional concept, shaped by diverse perspectives and approaches. It can be understood through the following key dimensions:

1. Ethical and Philosophical Dimension

One of the foundational aspects of environmentalism is its ethical stance. It asserts that the natural world has intrinsic value, independent of its usefulness to human beings. This idea is particularly emphasized in deep ecology, a philosophical approach that calls for a fundamental shift in human consciousness, viewing nature not as a resource but as a living community to which humans belong. This contrasts with shallow ecology, which supports environmental protection primarily for human benefit. The ethical dimension also includes the moral responsibility to protect the planet for future generations, reflecting the principle of intergenerational justice.

2. Scientific and Ecological Dimension

Environmentalism is strongly rooted in scientific understanding of ecological systems. It draws upon disciplines such as environmental science, biology, climatology, and geology to explain how ecosystems function, how human activities impact the environment, and what measures are needed to mitigate these impacts. Scientific research provides evidence on issues like global warming, species extinction, pollution levels, and ecosystem degradation, making it a critical tool for environmental policy-making and advocacy. Without the backing of science, environmental claims lack credibility and direction.

3. Political and Legal Dimension

Environmentalism also functions as a political movement, demanding institutional reforms and regulatory frameworks that prioritize environmental protection. Governments play a central role

through laws, policies, and international agreements such as the Paris Climate Accord or the Convention on Biological Diversity. Political environmentalism includes lobbying for green policies, organizing protests, and forming green political parties. The legal dimension involves enforcing environmental laws, ensuring compliance, and holding polluters accountable. It also includes the recognition of environmental rights as human rights, especially for vulnerable communities.

4. Economic Dimension

The economic dimension of environmentalism critically examines the impact of industrialization, capitalism, and consumerism on the planet. Traditional economic models are based on the assumption of infinite growth, often ignoring environmental costs. Environmentalism promotes sustainable development and green economy models, which focus on balancing economic progress with ecological sustainability. Concepts like ecological economics, carbon pricing, and circular economy attempt to internalize environmental costs and reduce resource dependency. This dimension encourages investment in renewable energy, eco-friendly technologies, and sustainable agriculture.

5. Social and Cultural Dimension

Environmentalism is also shaped by cultural values, social practices, and community knowledge. Indigenous and traditional communities often have rich ecological wisdom, developed over centuries of living in harmony with nature. This local ecological knowledge is increasingly recognized as vital for sustainable resource management. Additionally, the environmental justice movement highlights how environmental degradation disproportionately affects marginalized and poor communities, both within and across nations. Environmentalism therefore includes the struggle for equitable

access to clean water, air, and land, linking ecological concerns with social justice and human rights.

6. Educational and Awareness Dimension

Another vital dimension of environmentalism is the emphasis on environmental education and public awareness. Promoting ecological literacy from schools to community platforms helps in shaping environmentally conscious citizens. Campaigns, documentaries, eco-friendly lifestyle promotions, and climate change communication strategies are tools used to inform and influence behavior. This dimension aims to bridge the gap between knowledge and action, fostering a culture of sustainability in everyday life.

So it can be summarised that the concept of environmentalism is dynamic and multi-faceted, encompassing ethical values, scientific knowledge, political action, economic alternatives, cultural practices, and educational strategies. These dimensions interact to create a holistic approach to tackling environmental challenges. As the world faces increasingly complex environmental crises, understanding and engaging with these diverse dimensions of environmentalism becomes essential not only for preserving nature, but for ensuring justice, equity, and well-being for all.

1.5 Historical Evolution of Environmentalism

The evolution of environmentalism traces humanity's changing relationship with nature, shaped by spiritual, cultural, economic, and scientific developments across different historical eras. Although the term "environmentalism" is relatively modern, concerns about protecting the natural world have existed for centuries in various

forms. In many indigenous and ancient societies, such as Native American tribes, Aboriginal Australians, African tribal communities, and ancient Indian and Andean civilizations, nature was revered as sacred and closely tied to spiritual and daily life. Communities developed sustainable practices such as sacred groves, rotational agriculture, and seasonal hunting that respected ecological balance. These early forms of environmental consciousness were embedded in cultural traditions and spiritual beliefs rather than formalized ideologies or movements.

With the onset of the Scientific Revolution and Enlightenment in the 17th and 18th centuries, nature began to be understood more as a system to be studied, classified, and utilized. This new worldview, combined with the rise of industrial capitalism during the Industrial Revolution, led to unprecedented levels of resource extraction, urban pollution, and ecological disruption. In response, early environmental thought emerged in the form of romanticism and naturalist literature. Thinkers like Henry David Thoreau, John Ruskin, and William Wordsworth criticised industrial modernity and idealized nature as a source of purity and spiritual renewal. These intellectual foundations paved the way for organized conservation efforts in the late 19th century, particularly in the United States and Europe, where national parks were established, and natural resource management became a concern for the state.

The early 20th century marked the institutionalization of conservation and preservation movements. Conservationists like Gifford Pinchot advocated for the rational use of natural resources for the public good, while preservationists like John Muir called for protecting wilderness areas from human interference altogether. During the colonial period, top-down environmental policies were imposed in many regions such as British India**,** colonial Africa, and Latin America**,** where colonial powers established forest reserves,

national parks, and extraction zones that excluded indigenous communities**,** disrupted traditional land use, and ignored local ecological knowledge—often prioritizing resource extraction, commercial forestry, and revenue generation over ecological balance and community rights. In countries like India, British forest laws disrupted local resource management and led to conflicts between state authorities and forest-dependent communities, sowing the seeds for later grassroots environmental activism.

After World War II, industrial expansion and technological advancement brought new forms of environmental degradation. Air and water pollution, chemical contamination, and habitat destruction intensified, especially in urban and industrial areas. The modern environmental movement gained momentum in the 1960s, particularly after the publication of Rachel Carson's *Silent Spring* in 1962, which exposed the dangers of pesticides and awakened public concern about human impact on nature. This period witnessed the emergence of environmental organizations, scientific activism, and environmental education. In 1970, the first Earth Day was celebrated in the United States, symbolizing the rise of a mass-based environmental consciousness.

Stop to Consider:

Limit to Growth and Tragedy of Commons:

The concepts of Limits to Growth and the Tragedy of the Commons highlight critical concerns about environmental sustainability. The Limits to Growth, introduced in a 1972 report by the Club of Rome, argues that unchecked economic and population growth will eventually exceed the Earth's finite resources, leading to ecological collapse unless urgent changes are made to consumption patterns and development models. It emphasizes the need for sustainable

limits to industrial expansion, resource use, and pollution. The Tragedy of the Commons, proposed by Garrett Hardin in 1968, describes how individuals acting in their own self-interest can deplete shared natural resources—like fisheries, pastures, or clean air—resulting in collective ruin. Both concepts underscore the dangers of overuse and mismanagement of common resources and call for cooperative, regulated approaches to ensure long-term ecological balance.

The 1970s and 1980s marked a turning point as environmentalism became a global and institutionalized movement. International conferences such as the United Nations Conference on the Human Environment in Stockholm (1972) and the publication of the Brundtland Report (1987) introduced the concept of "sustainable development," calling for a balance between ecological protection and economic growth. Environmental laws, government agencies, and environmental impact assessments became widespread during this era. At the same time, concerns expanded beyond pollution to include global issues like ozone depletion, deforestation, species extinction, and nuclear risks.

By the 1990s, environmentalism took on a more justice-oriented and inclusive approach. Activists and scholars began to highlight the unequal distribution of environmental harms, particularly in poor and marginalized communities. This gave rise to the environmental justice movement, which connected ecological concerns with issues of race, class, gender, and indigenous rights. At the global level, the Earth Summit in Rio de Janeiro (1992) reinforced commitments to sustainable development and led to major treaties on climate change and biodiversity. The late 20th century also witnessed the growing influence of environmental non-governmental organizations (NGOs) and the strengthening of civil society advocacy on ecological issues.

Since the 2010s, environmentalism has entered a new and dynamic phase, shaped by growing awareness of the planetary crisis and energized by the rise of youth-led movements and indigenous activism. With climate change accelerating and its impacts becoming more visible—through devastating floods, wildfires, droughts, and heatwaves—this era has seen an unprecedented mobilization of global citizens demanding urgent environmental action. One of the most significant developments has been the emergence of youth movements, such as Fridays for Future led by Greta Thunberg, which have galvanized millions of young people around the world to protest climate inaction, challenge political apathy, and demand a sustainable future. These youth movements bring moral urgency and intergenerational justice to the forefront of environmental debates. Simultaneously, indigenous communities have gained increased recognition for their role in environmental protection, as their traditional knowledge and deep-rooted connection to land and ecosystems offer vital insights into sustainable living. From the Amazon to the Arctic, indigenous leaders have been at the forefront of resisting deforestation, extractive industries, and land grabs. The 2010s have also seen a shift in environmentalism toward more intersectional and justice-based approaches, linking ecological concerns with social inequality, gender, race, and economic exploitation. Technological advancements and social media have amplified these voices, turning local struggles into global causes and making environmental advocacy more inclusive and decentralized. As the world confronts the complex realities of the Anthropocene—an era where human activity significantly shapes Earth's systems—environmentalism today embodies not just a movement to protect nature, but a broader call to rethink our economies, politics, and ethics in an age of ecological emergency.

Environmentalism has posed significant challenges to traditional political theory, which historically prioritized human-centered concerns such as state power, justice, rights, and liberty, often neglecting the ecological context in which political life unfolds. Traditional political thought, rooted in liberal, socialist, or even conservative frameworks, typically focused on human society in isolation from nature, viewing the environment either as a backdrop or as a resource to be managed. However, the rise of environmentalism has pushed political theorists to reconsider foundational concepts—such as citizenship, justice, and sovereignty—in light of ecological limits and interdependence. It questions anthropocentric assumptions and calls for a broader, more inclusive framework that considers non-human entities, future generations, and ecosystems as part of the political community. This has led to the emergence of new fields such as green political theory and environmental political thought, which seek to integrate ecological sustainability into normative political analysis and institutional design, thereby reshaping the scope and focus of political theory itself.

So it can be summarised that the history of environmentalism reflects a growing awareness of the complex interdependence between humans and nature. From ancient reverence to modern science, from conservation to climate justice, environmentalism has matured into a multidimensional and globally relevant movement. It continues to adapt to new challenges, seeking to build a more equitable and ecologically sustainable world. Environmentalism reflects political theory by challenging and expanding its core concepts such as justice, rights, power, and citizenship to include ecological concerns. It questions anthropocentric assumptions and highlights how environmental issues are deeply political, involving inequality, access to resources, and intergenerational ethics. By

urging political theory to consider the non-human world, future generations, and the limits of growth, environmentalism reshapes traditional debates and calls for more inclusive, sustainable, and ecologically grounded political frameworks.

1.6 Forms and Approaches within Environmentalism

It has already been mentioned above that environmentalism is not a monolithic ideology; rather, it encompasses a wide spectrum of forms and approaches that reflect different philosophies, strategies, and goals. These variations arise from differing views on how best to protect the environment, what aspects of nature deserve priority, and the roles that humans should play in ecological systems. From grassroots activism to international policymaking, from spiritual reverence to scientific intervention, environmentalism includes diverse paths that contribute to its overall vision of ecological sustainability and justice. The major forms and approaches within environmentalism are discussed below.

1. Conservationism

Conservationism is one of the earliest and most well-established forms of environmentalism. It emphasizes the wise and sustainable use of natural resources to ensure their availability for future generations. The core belief behind conservationism is that nature should be managed responsibly and efficiently to balance human needs with environmental health. It supports activities like reforestation, wildlife protection, soil conservation, and sustainable agriculture. This approach is often associated with the "resource management" perspective, where nature is viewed as a valuable asset that should not be wasted or depleted. Governments, NGOs, and forestry departments often apply conservationist principles in managing parks, forests, and water bodies.

2. Preservationism

In contrast to conservationism, preservationism advocates for the protection of nature in its untouched, pristine state**,** regardless of its utility to human beings. This approach is rooted in the belief that natural landscapes, ecosystems, and species possess intrinsic value and spiritual significance, and therefore should be left undisturbed. Preservationism gained momentum in the 19th and early 20th centuries through the efforts of thinkers like John Muir, who campaigned for the creation of national parks in the United States. This approach opposes industrial activities such as logging, mining, and dam-building in ecologically sensitive areas, even if done sustainably. Preservationists argue that humans should act as stewards of the Earth, not its exploiters.

3. Political Environmentalism

Political environmentalism refers to efforts aimed at influencing public policy, legal systems, and international agreements to protect the environment. This approach views environmental degradation as a consequence of weak or exploitative political and economic structures, and thus seeks systemic change. Political environmentalism is expressed through lobbying, environmental legislation, formation of green political parties, environmental litigation, and participation in global climate summits. It includes campaigns for banning harmful practices (like single-use plastics), enacting laws for wildlife protection, or ratifying treaties such as the Kyoto Protocol or Paris Climate Agreement**.** Environmental justice movements that demand equitable distribution of environmental benefits and burdens also fall under this approach.

4. Grassroots Environmentalism

Grassroots environmentalism refers to community-led, bottom-up environmental efforts that arise in response to local environmental

issues. It is rooted in the direct experiences of people affected by deforestation, water pollution, land acquisition, or industrial contamination. This form of environmentalism is often participatory, inclusive, and closely connected with issues of livelihood, health, and cultural identity. One notable example is the Chipko Movement in India, where rural women hugged trees to prevent them from being cut. Grassroots activism often challenges the top-down approaches of states or corporations and highlights the need for local knowledge, indigenous rights, and decentralized governance in environmental protection.

5. Ecofeminism

Ecofeminism is an intellectual and activist approach that connects the exploitation of nature with the oppression of women**,** asserting that both arise from patriarchal systems of domination. It critiques the ways in which industrial capitalism treats both women and the environment as objects to be controlled and exploited. Ecofeminists advocate for a more caring, relational, and nurturing relationship with nature, emphasizing cooperation over control. The approach brings attention to how environmental destruction disproportionately affects women, especially in rural and marginalized communities. It also uplifts the traditional ecological knowledge of women, such as seed saving, herbal medicine, and sustainable farming.

6. Spiritual and Religious Environmentalism

Many environmental movements are informed by religious and spiritual beliefs, which regard nature as sacred and interconnected with human life. In various cultures and faiths, the Earth is seen as a divine creation or as a living being deserving respect and reverence. For example, in Hinduism, rivers like the Ganga are worshipped as goddesses; in Indigenous traditions, nature spirits and ancestral

lands are held sacred; and in Christianity, the concept of stewardship calls humans to care for God's creation. These religious frameworks can inspire ethical action, community mobilization, and moral arguments in favor of environmental protection. Spiritual environmentalism often emphasizes humility, gratitude, and harmony with the Earth.

7. Technocratic or Reformist Environmentalism

This approach emphasizes the use of technology, innovation, and policy reforms to address environmental problems without fundamentally altering the current economic or political systems. Technocratic environmentalists advocate for clean energy technologies, carbon capture systems, green urban planning, and environmental impact assessments. This is often considered a pragmatic and incremental approach that seeks to make environmentalism compatible with economic growth. Reformist environmentalism tends to work within existing institutions, aiming to make industries more sustainable through green technologies and regulations, rather than calling for systemic change.

8. Radical or Deep Ecology Approach

Deep ecology is a radical form of environmentalism that calls for profound shifts in human consciousness, values, and lifestyles. It questions the very foundations of modern civilization—such as materialism, individualism, and anthropocentrism—and promotes a biocentric worldview where all living beings have equal rights to exist and flourish. Proponents of deep ecology advocate for reducing human population, decentralizing economies, and adopting simpler, more harmonious ways of living. This approach challenges mainstream environmentalism for being too shallow and human-centered. While controversial, deep ecology has inspired many activists and philosophers to rethink the moral and ethical

foundations of environmental action. It needs mention here that Shallow ecology focuses on solving environmental problems like pollution and climate change without changing the existing economic or political systems. It is human-centered and aims to protect nature mainly to benefit people. In contrast, radical ecology believes that environmental issues are deeply rooted in systems like capitalism, patriarchy, and hierarchy, and calls for a complete transformation of how society relates to nature. It values all life forms equally and promotes justice for both people and the planet. While shallow ecology works within the system, radical ecology wants to change the system itself.

So you have learnt that the forms and approaches within environmentalism reflect the diversity of human relationships with nature. Whether through conservation, grassroots resistance, political action, or spiritual reflection, environmentalism provides multiple pathways to engage with ecological challenges. These approaches are not mutually exclusive; in fact, they often intersect and reinforce one another. Understanding their unique contributions and perspectives allows for a more holistic and inclusive environmental movement—one that respects both scientific knowledge and cultural values, both policy reform and grassroots activism, and both immediate action and long-term ethical transformation.

Different political ideologies have engaged with environmental concerns through their unique philosophical lenses, offering diverse pathways to understanding and addressing ecological crises. Liberalism has approached the environment through the framework of environmental rights, emphasizing legal protections for clean air, water, and sustainable development, often within market-based and individual rights paradigms. Conservatism, with its focus on tradition, order, and continuity, promotes the idea of ecological

order, advocating for the stewardship of nature as part of a moral and cultural duty to preserve inherited landscapes and ecosystems. Socialism, particularly in its eco-Marxist strand, critiques capitalism for commodifying nature and creating environmental degradation, calling for the collective ownership of resources and democratic planning to ensure both social and ecological justice. Anarchism, especially through the work of thinkers like Murray Bookchin, has contributed the idea of social ecology, which links ecological destruction to hierarchical social structures, advocating decentralized, cooperative communities that live in harmony with nature. Meanwhile, feminism, particularly ecofeminism, explores the parallel between the domination of nature and the oppression of women, calling for an ethic of care, interconnectedness, and a dismantling of patriarchal systems that harm both the environment and marginalized groups. Together, these ideological engagements enrich environmental discourse by highlighting the interplay between ecological issues and broader social, political, and ethical structures.

Self Asking Question:

Do you agree that environmental injustice reflects deep social inequalities? Give reasons.

……

……

……

1.7 The Critiques and the Contemporary Relevance

Critics of environmentalism argue that it can sometimes be overly idealistic, exclusionary, or dominated by Western perspectives that

ignore local realities and socio-economic inequalities. One major criticism is that mainstream environmentalism often focuses on conservation and sustainability in ways that overlook the needs and rights of marginalized communities, especially in the Global South, leading to practices like "green grabbing" where land is taken for environmental purposes without local consent. Others point out that environmentalism can become too technocratic or market-driven, relying heavily on solutions like carbon trading and green technologies while failing to address the root causes of ecological degradation such as consumerism and systemic inequality. Additionally, some scholars argue that environmental narratives may unintentionally reproduce colonial attitudes by portraying local people as threats to nature, rather than recognizing their role as stewards of the environment. Thus, critics call for a more inclusive, justice-oriented environmentalism that centers on equity, indigenous knowledge, and structural transformation.

But despite the criticisms, in the 21st century, environmentalism has acquired unprecedented significance as the world grapples with multifaceted ecological crises that threaten the stability of life on Earth. The contemporary relevance of environmentalism lies in its response to the urgent and interconnected challenges of climate change, biodiversity loss, pollution, deforestation, and environmental injustice. These problems are no longer abstract or distant—they are visible in extreme weather events, rising sea levels, urban smog, desertification, water scarcity, and the increasing frequency of natural disasters. Environmentalism provides the ethical, scientific, and political frameworks needed to understand, confront, and mitigate these pressing global threats.

Climate change, in particular, has emerged as the defining issue of our times, affecting every aspect of human and ecological life. From melting glaciers in the Himalayas to heatwaves across Europe and

floods in South Asia, the impacts are widespread and escalating. Contemporary environmentalism calls for a transition from fossil fuel dependence to renewable energy sources like solar, wind, and hydro power. It advocates for the reduction of greenhouse gas emissions, sustainable urban planning, and eco-friendly transportation systems. Without urgent action to limit global warming, climate change could displace millions of people, disrupt food systems, and exacerbate global inequalities. In this context, environmentalism becomes not just a scientific concern but a moral and political imperative.

Another key dimension of contemporary environmentalism is its growing emphasis on environmental justice. It recognizes that environmental degradation disproportionately affects marginalized communities—such as indigenous peoples, the urban poor, and communities in the Global South—who often contribute the least to environmental problems but suffer the most from their consequences. From the displacement of Adivasi communities due to mining in India, to toxic waste sites located near low-income neighbourhoods in the U.S., environmental injustice reflects deep social inequalities. Modern environmentalism thus seeks to democratize access to clean air, water, and land while advocating for policies that uphold human rights and ecological integrity.

Contemporary environmentalism is also deeply linked to public health. The COVID-19 pandemic underscored the connections between environmental destruction, wildlife trade, and the emergence of zoonotic diseases. Air and water pollution continue to contribute to millions of premature deaths annually, especially in densely populated regions like South Asia. By advocating for clean energy, green spaces, waste management, and sustainable agriculture, environmentalism plays a crucial role in improving overall public health outcomes and building societal resilience.

Stop to Consider:

Digital environmentalism:

Digital environmentalism refers to the use of digital technologies, social media platforms, and online tools to promote environmental awareness, advocacy, and action. It has become a powerful force in contemporary environmental movements, enabling activists to reach global audiences, share real-time information, organize virtual campaigns, and build transnational solidarity across geographic boundaries. Through hashtags like #ClimateStrike or #SaveTheAmazon, environmental issues gain viral visibility, influencing public opinion and pressuring policymakers. Digital platforms also allow grassroots organizations, especially in the Global South, to amplify their voices without relying on traditional media. Moreover, apps and online tools are now used to track pollution, monitor deforestation, promote sustainable lifestyles, and crowd source data for citizen science. While digital environmentalism democratizes activism and speeds up information flow, it also raises concerns about digital divides, misinformation, and the carbon footprint of data infrastructure. Nonetheless, it remains a critical component of 21st-century environmental advocacy, blending technology with ecological consciousness to drive global change.

Environmentalism today is not confined to governments or scientists—it has become a vibrant grassroots and youth-led movement. Movements like *Fridays for Future*, *Extinction Rebellion*, and *The Climate Reality Project* have mobilized millions of young people around the world to demand stronger environmental action and intergenerational equity. These movements are shaping public discourse, pressuring policymakers,

and redefining the role of civic participation in ecological decision-making. Digital platforms and social media have further amplified environmental voices, allowing local struggles—such as anti-dam protests in Northeast India or indigenous land rights in the Amazon—to gain global solidarity and attention.

Moreover, contemporary environmentalism has moved beyond a single-issue focus and embraced a holistic and interdisciplinary approach. It draws insights from science, ethics, economics, sociology, and indigenous knowledge systems to offer integrated solutions. Concepts like sustainability, circular economy, green economy, and degrowth are now central to policy debates on development and ecological limits. In academic and policy circles, environmentalism encourages long-term thinking, participatory governance, and a shift in values toward ecological humility and interdependence.

So it is clear here that the contemporary relevance of environmentalism cannot be overstated. As humanity faces ecological tipping points, the environmental movement provides a critical pathway for collective survival and sustainable futures. It challenges exploitative economic models, demands accountability from power structures, and fosters a more just, inclusive, and ecologically responsible global society. In an era defined by crisis, environmentalism offers both a warning and a vision—a call to action and a hope for regeneration.

Stop to Consider:

Green New Deal:

The Green New Deal is a bold and comprehensive policy framework that seeks to address the dual crises of climate change and economic inequality through large-scale public investment in

renewable energy, green infrastructure, and social justice initiatives. Inspired by the original New Deal of the 1930s, the Green New Deal envisions a just transition from a fossil fuel-based economy to a sustainable, low-carbon future while creating millions of green jobs, ensuring universal access to clean air and water, and protecting vulnerable communities disproportionately affected by environmental degradation. First popularized in the United States by progressive politicians like Alexandria Ocasio-Cortez and Senator Ed Markey, the idea has gained international attention as a model for integrating environmental goals with economic and social equity. The Green New Deal also emphasizes indigenous rights, energy democracy, and climate resilience, advocating for systemic change rather than incremental reforms. While it has been praised for its ambitious vision, critics argue about its feasibility, cost, and political implications. Nevertheless, the Green New Deal remains a key symbol of transformative environmentalism in the 21st century, offering a roadmap for sustainable and inclusive development.

Check Your Progress:

1. What do you mean by environmentalism?
2. Examine different dimensions of environmentalism.
3. What are the various forms and approaches within environmentalism?
4. Trace the growth of environmentalism.
5. Explain the contemporary relevance of environmentalism.

1.8 Summing Up

After reading this unit now you have understood that environmentalism is not just an ideology or movement; it is a necessity for the survival of life on Earth. It requires an integrated

approach involving policy reform, scientific innovation, ethical responsibility, and public engagement. So it can be summarised that the concept of environmentalism is dynamic and multi-faceted, encompassing ethical values, scientific knowledge, political action, economic alternatives, cultural practices, and educational strategies. This unit has also made you familiarise with different forms and approaches within environmentalism which reflect the diversity of human relationships with nature. As environmental crises grow in scale and complexity, environmentalism offers both a critical lens to understand these issues and a hopeful pathway toward a sustainable future.

1.9 References and Suggested Readings

Murphy, P. D. (2009). Environmentalism. In *The Routledge companion to science fiction* (pp. 373-381). Routledge.

Del Mar, D. P. (2014). *Environmentalism*. Routledge.

Raudsepp, M. (2001). Values and environmentalism. *Trames*, *5*(3), 213-233.

Choucri, N. (1993). Environmentalism. © Oxford University Press.

Cotgrove, S., & Duff, A. (1981). Environmentalism, values, and social change. *British journal of sociology*, 92-110.

---×---

UNIT- 2

THE EVOLUTION OF ENVIRONMENT DISCOURSE

Unit Structure:

2.1 Introduction
2.2 Objectives
2.3 Early Conservation and Preservation Movements
2.4 Post-World War II and the Rise of Environmental Awareness
2.5 Globalization and Sustainable Development (1970s–1990s)
    2.5.1 The Impact of Globalization on the Environment
    2.5.2 The Emergence of Sustainable Development
    2.5.3 International Environmental Agreements and Policies
    2.5.4 The Role of Environmental Activism and NGOs
2.6 Climate Change and Environmental Justice (2000s–Present)
    2.6.1 The Science of Climate Change and Its Impact
    2.6.2 Global Climate Policies and Agreements
    2.6.3 Environmental Justice: Inequality in the Climate Crisis
    2.6.4 Activism and Grassroots Movements
    2.6.5 Technological Innovations and Sustainable Solutions
2.7 Challenges in Addressing Climate Change and Environmental Injustice
2.8 Future Directions for Tackling Climate Change and Environmental Injustice
2.9 Summing Up
2.10 References and Suggested Readings

2.1 Introduction

The discourse on the environment has evolved significantly over time, shaped by scientific discoveries, political movements,

economic considerations, and societal concerns. From early conservation efforts to contemporary climate justice and sustainability debate the environmental discourse has continuously adapted to new challenges and knowledge. This unitwill trace the evolution of environmental discourse, highlighting key phases, theories, and global initiatives that have shaped our understanding of environmental issues.

2.2 Objectives

After reading this unit you will be able to—

- *trace* the history of the environmental discourse;
- *understand* the concept of globalization and sustainable development;
- *discuss* the concepts of climate change and environmental justice;
- *examine* the challenges and future directions related to climate change and environmental justice.

2.3 Early Conservation and Preservation Movements

The evolution of environmental discourse can be broadly understood in three key phases. The first phase, emerging in the 1960s and 1970s, was marked by a conservationist and preservationist approach, emphasizing the protection of natural resources and ecosystems, largely driven by concerns over pollution and ecological degradation (e.g., Rachel Carson's *Silent Spring*). The second phase**,** from the 1980s onward, introduced the concept of sustainable development, most notably through the 1987 Brundtland Report, which sought to balance economic growth with

environmental protection and social equity. The third phase, from the 1990s to the present, reflects a more critical and inclusive discourse, incorporating issues of environmental justice, climate change, indigenous knowledge systems, and the interconnections between environment, gender, and global inequality, highlighting the need for systemic change and participatory governance.

The origins of environmental discourse can be traced back to early conservation and preservation efforts in the 19th and early 20th centuries. These movements emerged in the late 19th and early 20th centuries in response to rapid industrialization, deforestation, and the depletion of natural resources. These movements sought to address the growing concerns over environmental degradation caused by expanding industries, urbanization, and exploitative resource extraction. While both conservation and preservation aimed to protect the environment, they were rooted in distinct ideologies and approaches to managing nature. Conservation focused on the sustainable use of natural resources, whereas preservation advocated for the protection of nature from human interference. Together, these movements laid the foundation for modern environmentalism and influenced policies on land and resource management.

The conservation movement was primarily driven by the idea that natural resources should be used wisely to ensure their availability for future generations. This approach was largely influenced by the utilitarian philosophy, which emphasized maximizing resource efficiency while preventing overexploitation. One of the most influential figures in this movement was Gifford Pinchot, the first Chief of the U.S. Forest Service, who promoted the principle of "wise use." Pinchot believed that forests, water bodies, and other natural resources should be managed scientifically to balance economic development and environmental protection. This

perspective led to the establishment of national forests, controlled logging practices, and government policies aimed at preventing resource depletion. The conservation movement played a crucial role in shaping early environmental policies and remains a key component of environmental governance today.

In contrast, the preservation movement started in USA, was rooted in a more ecocentric philosophy, emphasizing the intrinsic value of nature beyond human use. This movement was spearheaded by figures like John Muir, a naturalist and founder of the Sierra Club, who argued for the protection of wilderness areas from any form of commercial exploitation. Muir and other preservationists believed that certain natural landscapes should be left untouched to maintain their aesthetic, spiritual, and ecological significance. Their efforts led to the creation of national parks, such as Yellowstone and Yosemite, where human activities were restricted to minimize environmental impact. The preservation movement provided the ethical and philosophical groundwork for modern conservation efforts aimed at protecting biodiversity and endangered ecosystems.

Despite their differences, both movements contributed significantly to the evolution of environmental discourse. Conservationists and preservationists often found themselves in conflict, particularly over issues such as dam construction, logging, and land development. However, their combined efforts led to the establishment of protected areas, conservation policies, and a broader awareness of the need for sustainable environmental management. The legacies of these early movements continue to shape contemporary environmental debates, influencing global policies on conservation, climate change, and ecological preservation.

Moreover, the early conservation and preservation movements played a crucial role in shaping environmental thought and policy. Conservationists emphasized the responsible use of resources to

ensure long-term sustainability, while preservationists advocated for the protection of untouched natural areas. Together, they laid the foundation for modern environmental movements, influencing policies that continue to address the pressing challenges of ecological degradation, biodiversity loss, and climate change. Modern environmentalism is characterized by its global focus on sustainability, climate change, environmental justice, and the integration of science, policy, and grassroots activism to address complex ecological and social challenges. Their contributions remain relevant in today's discussions on environmental ethics, sustainability, and global conservation efforts.

2.4 Post-World War II and the Rise of Environmental Awareness

The post-war era witnessed rapid industrialization and urbanization, leading to increased pollution and environmental degradation. The period following World War II marked a significant turning point in global environmental awareness. While the early conservation and preservation movements had already laid the groundwork for environmental thought, the post-war era brought new challenges and concerns that intensified the need for environmental protection. The rapid expansion of industrialization, urbanization, and technological advancements during this time led to unprecedented levels of pollution, resource exploitation, and environmental degradation. The rise of the environmental movement in the latter half of the 20th century was largely a response to these challenges, fuelled by scientific discoveries, environmental disasters, and a growing recognition of humanity’s impact on nature.

One of the defining features of the post-war era was the rapid economic and industrial growth experienced by many countries,

particularly in the West. The reconstruction of war-torn economies led to a surge in manufacturing, energy production, and infrastructure development. While this period of economic expansion improved living standards and technological innovation, it also resulted in severe environmental consequences. Industrial emissions, toxic waste, and chemical pollution increased dramatically, leading to air and water contamination. In cities, smog became a common problem due to high levels of fossil fuel combustion. Additionally, the rise of synthetic chemicals, including pesticides and industrial compounds, posed new threats to human health and ecosystems. These environmental hazards eventually sparked widespread public concern and activism.

A key turning point in the rise of environmental awareness was the publication of Rachel Carson's ground breaking book, *Silent Spring* (1962). Carson, a marine biologist and environmental writer, exposed the dangers of the pesticide DDT and its harmful effects on ecosystems, particularly on bird populations. *Silent Spring* challenged the unchecked use of chemical pesticides and highlighted the interconnectedness of human activities and nature. The book played a critical role in awakening public consciousness about environmental issues and is often credited with inspiring the modern environmental movement. Carson's work led to policy changes, including the eventual ban on DDT in the United States, and strengthened efforts to regulate chemical pollutants.

In addition to scientific revelations, a series of environmental disasters during the post-war period further heightened public concern. Events such as the Great Smog of London (1952), which resulted in thousands of deaths due to severe air pollution, demonstrated the lethal consequences of industrial emissions. Similarly, the Santa Barbara oil spill (1969), which spilled millions of gallons of crude oil into the ocean, caused widespread ecological

damage and intensified demands for environmental regulations. Other disasters, such as the Minamata mercury poisoning in Japan and the Cuyahoga River fire in the United States, served as wake-up calls about the dangers of industrial pollution and the need for stronger environmental protections. These crises underscored the urgency of environmental action and led to the formation of advocacy groups and policy reforms.

The increasing awareness of environmental issues during the 1960s and 1970s also led to the emergence of environmental activism and legislation. The first Earth Day, celebrated on April 22, 1970, marked a major milestone in the environmental movement. Initiated by U.S. Senator Gaylord Nelson, Earth Day brought together millions of people in demonstrations, teach-ins, and protests demanding environmental reforms. This event helped mainstream environmental concerns and led to the creation of key environmental institutions, such as the U.S. Environmental Protection Agency (EPA) in 1970. Governments worldwide began enacting environmental laws, including the Clean Air Act, Clean Water Act, and Endangered Species Act, aimed at regulating pollution and protecting ecosystems.

Internationally, the growing environmental consciousness led to global discussions on sustainable development and environmental protection. The United Nations Conference on the Human Environment (Stockholm Conference) in 1972 was a landmark event that brought together world leaders to address environmental challenges on a global scale. The conference resulted in the creation of the United Nations Environment Programme (UNEP) and laid the foundation for future environmental agreements and policies. The recognition of global environmental issues, such as deforestation, biodiversity loss, and climate change, paved the way for further international cooperation in environmental governance.

So you have learnt that the post-World War II era was a transformative period in the rise of environmental awareness. The combination of rapid industrialization, environmental disasters, and influential scientific works led to widespread public concern about ecological issues. The environmental movement gained momentum, resulting in significant policy reforms, activism, and the establishment of environmental institutions. These developments laid the groundwork for modern environmentalism, shaping contemporary discussions on climate change, sustainability, and ecological conservation. The lessons from this period continue to influence environmental policies and global efforts to address the pressing challenges of environmental degradation in the 21st century.

2.5 Globalization and Sustainable Development (1970s–1990s)

The period from the 1970s to the 1990s marked a crucial phase in the evolution of environmental discourse, characterized by the growing impact of globalization and the emergence of sustainable development as a key framework for addressing environmental challenges. During these decades, rapid economic expansion, industrialization, and global trade intensified environmental degradation, while concerns over resource depletion, pollution, and climate change led to an increased focus on sustainable development. International organizations, policymakers, and activists worked to balance economic growth with environmental protection, leading to landmark agreements and institutional developments that shaped contemporary environmental governance.

2.5.1 The Impact of Globalization on the Environment

Globalization—the increasing interconnectedness of economies, cultures, and societies—accelerated during the 1970s and 1980s due to advances in technology, transportation, and international trade. While globalization contributed to economic growth and development, it also had profound environmental consequences. The expansion of multinational corporations, industrial production, and global supply chains led to increased resource extraction, deforestation, and pollution. Countries, particularly in the Global South, experienced environmental degradation due to the rapid exploitation of natural resources for export-driven economies. Industries such as mining, logging, and agriculture expanded to meet the demands of global markets, often at the cost of biodiversity loss and ecosystem destruction.

One of the major environmental concerns associated with globalization was the increase in greenhouse gas emissions. The rapid industrialization of emerging economies, combined with high levels of fossil fuel consumption in developed nations, contributed to rising carbon dioxide (CO_2) emissions, leading to climate change. By the 1980s, scientific evidence on global warming gained significant attention, with researchers linking human activities—such as deforestation and the burning of fossil fuels—to rising global temperatures. These concerns prompted the international community to take action, laying the foundation for global climate agreements in the following decades.

Another critical issue was the expansion of consumerism and waste production. The rise of mass production and global trade facilitated the consumption of goods on an unprecedented scale, resulting in increased waste generation, plastic pollution, and toxic emissions. Electronic waste, industrial by products and non-biodegradable materials became significant environmental hazards, highlighting

the need for sustainable waste management policies. Additionally, the rise of global agribusiness and monoculture farming contributed to soil depletion, loss of genetic diversity in crops, and excessive use of chemical fertilizers and pesticides, further damaging ecosystems.

2.5.2 The Emergence of Sustainable Development

In response to the environmental challenges posed by globalization, sustainable development emerged as a guiding principle for balancing economic growth, environmental protection, and social well-being. The concept of sustainable development gained international recognition in 1987 with the publication of the Brundtland Report, officially titled *Our Common Future*, by the United Nations' World Commission on Environment and Development (WCED). The report, led by former Norwegian Prime Minister Gro Harlem Brundtland, defined sustainable development as:

> *"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*

The Brundtland Report emphasized the interconnectedness of economic, social, and environmental systems, advocating for policies that promote long-term ecological sustainability alongside economic progress. It highlighted key global issues such as climate change, deforestation, water scarcity, and pollution, calling for coordinated international efforts to address these challenges. The report played a crucial role in shaping environmental policies and led to the integration of sustainability principles into global development strategies.

2.5.3 International Environmental Agreements and Policies

The increasing recognition of global environmental issues in the 1970s–1990s led to several landmark international agreements and institutional developments aimed at promoting sustainability.

1. **United Nations Conference on the Human Environment (Stockholm Conference, 1972):**
   The Stockholm Conference was the first major international summit to address environmental issues on a global scale. It led to the establishment of the **United Nations Environment Programme (UNEP)**, which played a vital role in coordinating global environmental policies and research. The conference also emphasized the principle that economic development should not come at the cost of environmental degradation, setting the stage for future sustainability discussions.

2. **The Montreal Protocol (1987):**
   One of the most successful international environmental agreements, the **Montreal Protocol** was designed to address the depletion of the **ozone layer** caused by chlorofluorocarbons (CFCs). Countries agreed to phase out the production and use of CFCs, leading to significant improvements in ozone layer recovery. The protocol demonstrated the effectiveness of global cooperation in addressing environmental crises and served as a model for future agreements.

3. **The Earth Summit (Rio Conference, 1992):**
   The **United Nations Conference on Environment and Development (UNCED)**, also known as the **Earth Summit**, was a milestone event in environmental governance. Held in Rio de Janeiro, Brazil, the summit brought together world

leaders, scientists, and activists to discuss sustainable development. The conference produced key agreements, including:

- **Agenda 21**: A comprehensive action plan for sustainable development at local, national, and global levels.
- **The Rio Declaration on Environment and Development**: A set of 27 principles promoting sustainability, including the precautionary principle and the polluter-pays principle.
- **The Convention on Biological Diversity (CBD)**: A treaty focused on the conservation of biodiversity and the fair use of genetic resources.
- **The United Nations Framework Convention on Climate Change (UNFCCC)**: A framework for international cooperation on climate change, which later led to agreements such as the Kyoto Protocol (1997) and the Paris Agreement (2015).

Since 2015, international environmental policy has advanced significantly, beginning with the Paris Agreement (2015)**,** where nearly 200 countries committed to limiting global warming to well below 2°C above pre-industrial levels. This was followed by the European Green Deal (2019)**,** aiming for net-zero carbon emissions by 2050. In 2022, the Kunming-Montreal Global Biodiversity Framework was adopted to halt biodiversity loss by 2030. The Glasgow Climate Pact (COP26, 2021) emphasized phasing down coal and strengthening climate finance. In 2024**,** COP29 established a $300 billion annual climate finance goal by 2035, and COP16 on Biodiversity launched a roadmap for $200 billion in conservation funding and the innovative “Cali Fund” for Indigenous rights and

benefit-sharing. Additionally, the Global Shipping Emissions Fee (2025) and growing support to criminalize ecocide reflect a shift toward accountability and justice in environmental governance. Together, these agreements show an evolving global commitment to sustainable development, equity, and climate action.

2.5.4 The Role of Environmental Activism and NGOs

During this period, environmental activism and non-governmental organizations (NGOs) played a crucial role in advocating for sustainable development and influencing policy decisions. Organizations such as Greenpeace**,** Friends of the Earth**,** and the World Wildlife Fund (WWF) campaigned against deforestation, industrial pollution, and climate change. Activists pushed for corporate accountability, sustainable business practices, and stronger environmental regulations. The rise of environmental justice movements also highlighted how marginalized communities, particularly in the Global South, were disproportionately affected by environmental degradation and resource exploitation.

Stop to Consider

Challenges and Criticisms of Sustainable Development:

Despite the growing emphasis on sustainable development, several challenges and criticisms emerged during this period. One major concern was the conflict between economic growth and environmental protection**.** Many developing nations argued that strict environmental regulations could hinder their economic progress, leading to tensions between industrialized and developing countries. Additionally, while sustainable development principles were widely accepted, implementation remained uneven due to

political and economic constraints. Critics also pointed out that many multinational corporations continued to exploit natural resources unsustainably despite adopting "green" policies.

The period from the 1970s to the 1990s marked a crucial phase in global environmental discourse, as the effects of globalization heightened concerns over resource depletion, pollution, and climate change. Sustainable development emerged as a key framework for balancing economic growth with environmental protection, leading to landmark agreements such as the Brundtland Report, the Montreal Protocol, and the Earth Summit. Despite challenges in implementation, these efforts laid the foundation for modern environmental governance, shaping policies on climate action, conservation, and sustainable economic practices. The legacy of this period continues to influence global sustainability efforts in the 21st century, as nations work to address pressing environmental challenges such as climate change, biodiversity loss, and sustainable resource management.

2.6 Climate Change and Environmental Justice (2000s–Present)

The 21st century has been marked by an intensification of global climate change and a growing awareness of environmental justice issues. Scientific research has provided overwhelming evidence of rising global temperatures, extreme weather events, sea-level rise, and biodiversity loss, all of which are linked to human activities such as deforestation, industrial emissions, and the burning of fossil fuels. As climate change has become one of the most pressing global challenges, discussions have shifted beyond scientific and policy concerns to include issues of justice, equity, and human rights. The environmental justice movement has emphasised the unequal distribution of environmental harms and benefits,

highlighting how marginalised communities, particularly in the Global South, indigenous populations, and low-income groups, are disproportionately affected by climate change and environmental degradation.

2.6.1 The Science of Climate Change and Its Impact

Climate change, primarily driven by the accumulation of greenhouse gases (GHGs) in the atmosphere, has led to significant shifts in global climate patterns. According to reports by the Intergovernmental Panel on Climate Change (IPCC), global temperatures have risen by more than 1.1°C since pre-industrial times, with projections indicating that the planet could exceed the 1.5°C threshold set by the Paris Agreement within the next few decades if drastic action is not taken. Some of the key impacts of climate change include:

- **Extreme Weather Events**: Hurricanes, heatwaves, floods, and wildfires have increased in frequency and intensity. Events such as Hurricane Katrina (2005), the Australian wildfires (2019–2020), and the European heatwaves (2022) have highlighted the devastating effects of climate change.
- **Sea-Level Rise**: Melting polar ice caps and glaciers have contributed to rising sea levels, threatening coastal communities and island nations such as the Maldives, Tuvalu, and Bangladesh.
- **Biodiversity Loss and Ecosystem Disruption**: Many species face extinction due to habitat destruction, shifting climate zones, and ocean acidification. Coral reefs, rainforests, and Arctic ecosystems are among the most affected.

- **Food and Water Insecurity**: Climate change has disrupted agricultural patterns, leading to crop failures, desertification, and water scarcity in many regions, particularly in Africa and South Asia.
- **Public Health Crises**: Rising temperatures have led to the spread of vector-borne diseases such as malaria and dengue, increased air pollution-related illnesses, and worsened health disparities among vulnerable populations.

2.6.2 Global Climate Policies and Agreements

In response to the growing climate crisis, international efforts have focused on reducing carbon emissions, transitioning to renewable energy, and implementing sustainable development policies. Some of the most significant agreements and initiatives include:

1. **The Kyoto Protocol (1997, enforced in 2005)**
    - Aimed to reduce GHG emissions by setting binding targets for developed nations. However, it faced criticism for excluding developing nations and failing to curb emissions effectively.
2. **The Paris Agreement (2015)**
    - A landmark global climate agreement where countries pledged to limit global warming to below 2°C, with efforts to keep it under 1.5°C. It emphasized national commitments, or Nationally Determined Contributions (NDCs), to reduce emissions. Despite strong commitments, enforcement remains a challenge, and emissions have continued to rise.

3. **The COP (Conference of the Parties) Summits**
    - Annual UN climate summits where world leaders negotiate climate policies, financing mechanisms, and carbon reduction targets. Events like COP26 (Glasgow, 2021) and COP27 (Sharm El-Sheikh, 2022) have focused on financing climate adaptation and loss and damage compensation for vulnerable countries.
4. **Renewable Energy Transition**
    - Countries and corporations have increasingly invested in renewable energy sources such as solar, wind, and hydropower. However, fossil fuel industries continue to exert influence, delaying the transition to a low-carbon economy.

2.6.3 Environmental Justice: Inequality in the Climate Crisis

Environmental justice has emerged as a crucial framework for understanding the unequal effects of climate change and pollution. The movement argues that marginalized communities—especially Indigenous peoples, low-income populations, and communities of colour—bear the brunt of environmental harm despite contributing the least to the problem. Some key aspects of environmental justice include:

1. Climate Inequality Between the Global North and Global South

- **Historical Emissions Responsibility**: Developed nations (e.g., the U.S., Europe, and China) have historically contributed the most to greenhouse gas emissions, yet developing countries suffer the most from climate change impacts.

- **Loss and Damage Debate**: Developing nations demand financial compensation for climate-related disasters caused by industrialized nations' emissions. The Loss and Damage Fund**,** introduced at COP27, aims to address these concerns.

2. Indigenous and Local Communities' Struggles

- Indigenous communities play a vital role in biodiversity conservation but are often displaced due to deforestation, mining, and infrastructure projects. The fight against projects like the Dakota Access Pipeline (U.S.) and deforestation in the Amazon rainforest reflects ongoing environmental justice struggles.

3. Environmental Racism and Pollution

- Polluting industries and hazardous waste sites are often located near Black, Indigenous, and People of Color (BIPOC) communities, exposing them to health risks. For example, the Flint water crisis (Michigan, U.S.) highlighted how racial and economic disparities shape environmental injustice.

Developing nations are at a disadvantaged position in addressing climate change due to a combination of limited financial resources, inadequate technological infrastructure, and historical injustices. Although they contribute the least to global greenhouse gas emissions, they are often the most vulnerable to its impacts—such as rising sea levels, extreme weather events, and agricultural disruptions—because of their dependence on climate-sensitive sectors and lower adaptive capacity. These countries also face challenges in accessing climate finance, navigating complex international mechanisms, and competing with wealthier nations for sustainable technologies. Additionally, the legacy of colonial

exploitation and current global economic inequalities means that many developing nations lack the bargaining power in international negotiations, making it harder for them to secure fair support and climate justice.

2.6.4 Activism and Grassroots Movements

In recent years, climate activism has gained momentum, driven by youth movements, grassroots organizations, and Indigenous leadership. Some of the most notable movements include:

- **Fridays for Future** (FFF): Founded by Greta Thunberg, this global youth movement has mobilized millions to demand stronger climate policies.
- **Extinction Rebellion (XR)**: A direct-action movement advocating for radical climate policies through protests and civil disobedience.
- **Indigenous Climate Leadership**: Groups such as the Indigenous Environmental Network (IEN)work to protect ancestral lands and promote traditional ecological knowledge.

2.6.5 Technological Innovations and Sustainable Solutions

Advancements in technology and sustainable practices are key to mitigating climate change and promoting environmental justice. Some notable developments include:

- **Carbon Capture and Storage (CCS)**: Technologies that capture CO_2 emissions from industrial processes and store them underground.

- **Circular Economy Models**: Promoting recycling, zero-waste initiatives, and sustainable product designs to minimize environmental impact.
- **Green Urban Planning**: Cities adopting green infrastructure, such as bike lanes, green rooftops, and electric public transport systems, to reduce emissions.

It is clear from the above discussion that climate change and environmental injustice remain two of the most pressing global crises of the 21st century. Despite growing awareness and international agreements, significant challenges continue to hinder effective action. These challenges range from political resistance and economic barriers to social inequalities and the disproportionate impacts on marginalized communities. However, future directions offer hope, focusing on sustainable solutions, stronger governance, technological innovations, and greater inclusivity in environmental policies.

2.7 Challenges in Addressing Climate Change and Environmental Injustice

Addressing climate change and environmental injustice presents numerous challenges, many of which stem from deep-rooted economic, political, and social inequalities. One major obstacle is the global reliance on fossil fuels, which are the primary drivers of climate change. Many economies, particularly those of industrialized nations, have been built on carbon-intensive industries, making the transition to renewable energy both politically and economically difficult. Fossil fuel companies and other vested interests often resist regulations aimed at reducing greenhouse gas emissions, further delaying meaningful climate action. Additionally, developing nations, which contribute the least

to emissions, often lack the financial and technological resources to transition to sustainable energy, exacerbating global inequalities.

Another significant challenge is the unequal distribution of climate impacts, which disproportionately affect marginalized and low-income communities. Environmental injustice manifests in the fact that communities of color, Indigenous groups, and economically disadvantaged populations are more likely to experience extreme weather events, pollution, and displacement due to climate-related disasters. Despite their vulnerability, these communities often lack political representation and decision-making power in climate policy discussions. As a result, their needs are frequently overlooked in adaptation and mitigation efforts, leading to a cycle of environmental and social inequality.

Political and institutional barriers also hinder progress in addressing environmental injustice. Many governments prioritize economic growth over environmental protection, often rolling back regulations that limit industrial pollution or protect vulnerable ecosystems. In some cases, corruption and weak governance structures allow corporations to exploit natural resources without accountability, further worsening environmental degradation. Additionally, international climate agreements, such as the Paris Agreement, rely on voluntary commitments, which mean that enforcement mechanisms are weak, and many countries fail to meet their climate targets.

Lack of access to environmental education and information is another challenge, as it prevents communities from advocating for their rights and holding polluters accountable. In many cases, affected populations are not informed about the environmental hazards they face, nor are they included in decision-making processes regarding land use, industrial zoning, or climate adaptation measures. Grassroots movements and civil society

organizations play a crucial role in raising awareness and mobilizing communities, but they often struggle with limited funding and political resistance.

Finally, the intersectionality of environmental injustice with other social issues complicates efforts to find solutions. Climate change exacerbates existing inequalities related to race, gender, and economic status, making it necessary to address multiple systemic issues simultaneously. For example, women in many developing regions bear the brunt of climate change, as they are often responsible for securing food, water, and fuel for their households. Similarly, Indigenous communities face threats to their land and cultural survival due to deforestation and resource extraction. Addressing climate change and environmental injustice requires a holistic approach that integrates social justice, economic equity, and sustainable development.

Despite these challenges, growing awareness, activism, and policy initiatives offer hope for progress. Strengthening environmental regulations, investing in renewable energy, and ensuring inclusive decision-making processes are critical steps toward creating a more just and sustainable future. However, overcoming these obstacles requires sustained commitment from governments, businesses, and communities worldwide.

2.8 Future Directions for Tackling Climate Change and Environmental Injustice

The fight against climate change and environmental injustice requires a multi-faceted approach that integrates policy reforms, technological advancements, grassroots activism, and global cooperation. One of the most crucial steps moving forward is the transition to clean and renewable energy sources, such as solar,

wind, and hydroelectric power. Governments must invest in sustainable energy infrastructure, provide incentives for businesses and households to adopt green technologies, and phase out fossil fuel subsidies that perpetuate carbon-intensive industries. Equitable access to renewable energy is also essential, ensuring that low-income communities, often excluded from green energy initiatives, can benefit from lower energy costs and reduced pollution.

Another key direction is the development and enforcement of stronger environmental policies that prioritize both climate action and social justice. Governments should implement stricter emissions regulations, enforce corporate accountability for pollution, and create policies that prevent environmental degradation in vulnerable communities. International climate agreements must also be strengthened to include legally binding commitments rather than voluntary pledges, ensuring that all nations contribute their fair share to reducing global greenhouse gas emissions. Additionally, climate adaptation policies should focus on the most affected populations, offering support such as climate-resilient infrastructure, disaster relief programs, and financial aid for displaced communities.

Community-led solutions and grassroots movements will continue to play a vital role in addressing environmental injustice. Empowering local communities through participatory decision-making processes ensures that those most affected by environmental issues have a voice in shaping policies and solutions. Indigenous knowledge and traditional ecological practices, which have long emphasized sustainable resource management, should be integrated into climate adaptation strategies. Moreover, supporting local and regional climate justice organizations with funding and legal resources can help amplify their advocacy efforts and push for systemic change at various levels of governance.

Education and awareness campaigns are also essential for driving long-term change. Expanding environmental education in schools, media, and public discourse can help foster a more informed and engaged society that prioritizes sustainability. Digital platforms and social media can be leveraged to spread awareness, mobilize activists, and hold corporations and policymakers accountable for environmental violations. Furthermore, initiatives that train young people, women, and marginalized groups in sustainable practices and climate leadership can create a new generation of advocates equipped to drive meaningful change.

Technological innovation will be another cornerstone in tackling climate change and environmental injustice. Advancements in carbon capture and storage (CCS), climate-resilient agriculture, and green urban planning can significantly reduce emissions and enhance sustainability. Circular economy models—where waste is minimized through recycling, reusing, and repurposing materials—should be widely adopted to reduce environmental degradation. Additionally, climate finance mechanisms, such as green bonds and carbon pricing, can provide essential funding for sustainability projects, particularly in underdeveloped and vulnerable regions.

Lastly, achieving climate justice requires addressing the intersectionality of environmental issues with economic, racial, and gender inequalities. Policies that promote green job creation, economic redistribution, and social safety nets for affected populations must be prioritized. Ensuring that climate solutions do not deepen existing disparities—such as the displacement of indigenous communities for large-scale renewable energy projects—is critical. A just transition framework, which considers the needs of workers and marginalized communities during the shift to a green economy, can ensure that climate action promotes both sustainability and social equity.

In conclusion, the future of climate change and environmental justice depends on a holistic approach that integrates policy change, community empowerment, education, technology, and intersectional justice. Governments, businesses, and civil society must collaborate to implement solutions that not only mitigate climate change but also create a more just and equitable world. By prioritizing systemic transformation over short-term fixes, we can build a sustainable future that benefits both the planet and all its inhabitants.

Addressing climate change and environmental injustice requires urgent, coordinated action at all levels—global, national, and local. While challenges such as fossil fuel dependency, weak governance, and economic inequalities persist, future directions offer a roadmap for creating a more sustainable and equitable world. Strengthening climate policies, accelerating the clean energy transition, promoting social and environmental justice, and investing in technological and nature-based solutions will be critical to ensuring a livable planet for future generations. As climate impacts intensify, bold leadership, grassroots activism, and innovative solutions will be essential to building a just and resilient future for all.

Since the 2000s, climate change has become a defining global issue, intersecting with environmental justice and social inequality. While international policies such as the Paris Agreement aim to curb emissions, disparities in climate impact and response highlight the ongoing struggle for environmental justice. Grassroots movements, technological innovations, and sustainable development initiatives offer hope for a more equitable future, but urgent action is needed to address the deep-rooted causes of climate change and ensure a just transition for all communities. The coming decades will determine whether humanity can successfully navigate the challenges of climate change while prioritizing justice, sustainability, and ecological resilience.

Check Your Progress:

1. Define conservation movement.
2. What is preservation movement?
3. Who is the author of the book 'Silent Spring'?
4. Discuss the concept of sustainable development.
5. What is Brundtland Report ?
6. Define Montreal Protocol.
7. Examine the impacts of climate change.
8. Analyse the challenges in addressing climate change and environmental injustice.
9. What is Fridays For Future?
10. Write a note on the future direction of climate change and environmental discourse.

Self Asking Question:

Do you think technological innovations play an important role in tackling the problems related to climate change? Discuss.

……

……

……

2.9 Summing Up

After going through this unit you have learnt that the evolution of environmental discourse reflects shifting priorities, from early conservation efforts to contemporary discussions on climate justice and sustainability. While scientific advancements and policy initiatives have contributed to progress, ongoing challenges demand sustained global cooperation and innovative solutions. You have also learnt that as environmental threats intensify, the discourse continues to evolve, integrating new perspectives on equity, ethics, and resilience in the face of climate change.

2.10 References and Suggested Readings

- Carson, R. (1962). *Silent Spring*. Houghton Mifflin.
- United Nations. (1987). *Brundtland Report*.
- UNFCCC. (2015). *Paris Agreement*.
- Meadows, D. H., Meadows, D. L., Randers, J., & Behrens, W. W. (1972). *The Limits to Growth*.

---×---

UNIT- 3

CENTRAL IDEAS OF GREEN POLITICAL THOUGHT

Unit Structure:

3.1 Introduction

3.2 Objectives

3.3 The Origins and Evolution of Green Political Thought

3.4 Central Ideas of Green Political Thought

3.5 Green Political Strategies and Policy Implications

3.6 The Role of Green Parties and Movements

3.7 The Future of Green Political Thought

3.8 Summing Up

3.9 References and Suggested Readings

3.1 Introduction

Green political thought represents an ideological framework focussed on ecological sustainability, social justice, grassroots democracy, and nonviolence. Emerging from the broader environmental movement, it criticises mainstream political and economic paradigms that prioritize growth and profit over ecological balance and social well-being. This unit provides a comprehensive examination of the core principles of green political thought, its philosophical underpinnings, its criticism of traditional ideologies, and its implications for governance and policy-making. It also explores how green political thought connects with broader social movements and alternative economic models.

3.2 Objectives

After reading this unit you will be able to

- *trace* the evolution of green political thought;
- *examine* the central ideas of green political thought;
- *discuss* the green political strategies and policy implications;
- *analyse* the role of green parties and movements;
- *describe* the future of green political thought.

3.3 The Origins and Evolution of Green Political Thought

Green political thought, also known as ecologism or environmentalism, emerged in response to growing concerns over environmental degradation, resource depletion, and the long-term sustainability of human societies. Rooted in both philosophical traditions and grassroots activism, it has evolved from early conservationist and preservationist movements into a comprehensive political ideology advocating for systemic change. Green political thought is characterized by its emphasis on ecological sustainability, social justice, grassroots democracy, and nonviolence, forming the foundation of the Green political movement worldwide.

- **Early Influences and Foundations**

The origins of green political thought can be traced back to the 19th and early 20th centuries, when concerns over industrialization, pollution, and deforestation first gained attention. Early conservationist movements, particularly in Europe and North America, sought to protect natural resources for future generations. Thinkers like John Muir, who advocated for wilderness preservation, and Gifford Pinchot, who promoted sustainable

resource management, laid the groundwork for environmental consciousness. Meanwhile, in Europe, Romanticism and transcendentalist philosophies, as seen in the works of Henry David Thoreau and Ralph Waldo Emerson, emphasized a spiritual connection to nature and criticized industrial expansion.

The publication of Rachel Carson's *Silent Spring* in 1962 marked a turning point, highlighting the dangers of pesticide use and the broader environmental risks posed by industrial society. Carson's work helped launch the modern environmental movement by demonstrating the interconnectedness of human and ecological health. Around the same time, the Club of Rome's 1972 report, *The Limits to Growth*, warned of the consequences of unchecked economic expansion and resource depletion, reinforcing concerns about sustainability and the need for alternative development models.

- **The Rise of Green Politics and Movements**

The late 20th century witnessed the transition of green political thought from environmental activism to a structured political ideology. The 1970s and 1980s saw the formation of Green parties in countries such as Germany, New Zealand, and Australia. The German Green Party (*Die Grünen*), foundedin 1980, became one of the most influential Green parties, advocating for environmental protection, social justice, and direct democracy. These parties sought to integrate ecological concerns into mainstream politics, challenging the dominant economic and political paradigms that prioritized growth over sustainability.

At the same time, green political thought diversified to include concerns beyond environmental protection. Issues such as peace, social equity, and participatory democracy became central to Green political agendas. This broadened scope reflected the influence of

feminist, indigenous, and anti-globalization movements, which emphasized the interconnections between ecological crises, economic inequality, and social oppression. Ecofeminism, for example, highlighted the links between the exploitation of nature and the oppression of women, arguing that patriarchal structures contribute to both environmental destruction and gender inequality.

- **Key Theoretical Components in Green Political Thought**

Green political thought is not monolithic but encompasses several theoretical perspectives. Two major strands are deep ecology and social ecology. Deep ecology, developed by Arne Naess, promotes a radical restructuring of human-nature relationships, arguing that all living beings have intrinsic value beyond their utility to humans. It calls for a shift away from anthropocentrism (human-centered thinking) toward an ecocentric perspective that prioritizes the well-being of ecosystems as a whole.

Social ecology, associated with Murray Bookchin, takes a more socio-political approach, arguing that environmental problems are rooted in social hierarchies and economic structures. Bookchin contended that ecological destruction stems from capitalist exploitation and authoritarian systems, advocating for decentralized, democratic, and community-based solutions. Social ecology aligns closely with anarchist and socialist traditions, emphasizing the need for systemic change rather than merely advocating for environmental protection within existing political and economic frameworks.

Another key perspective is eco-socialism, which criticises capitalism's role in environmental degradation and argues for an economic system based on cooperation, sustainability, and social justice. Eco-socialists advocate for public ownership of natural resources and a shift away from profit-driven models of production,

emphasizing that environmental sustainability cannot be achieved without addressing economic inequality.

- **The Evolution of Green Political Thought in the 21st Century**

In the 21st century, Green political thought has evolved in response to global challenges such as climate change, biodiversity loss, and environmental injustice. The Paris Agreement (2015) and movements like Extinction Rebellion and Fridays for Future, led by youth activists like Greta Thunberg, reflect the growing urgency of ecological crises and the demand for immediate political action. These movements emphasize climate justice, arguing that marginalized communities—particularly in the Global South—suffer the most from environmental destruction despite contributing the least to it.

The rise of concepts such as the Green New Deal illustrates the integration of green political thought into mainstream policy discussions. Advocates of the Green New Deal propose comprehensive government intervention to transition to renewable energy, create green jobs, and address social inequalities. This approach blends elements of eco-socialism, sustainable development, and social justice, demonstrating the increasing intersectionality of Green politics.

Moreover, technological advancements have influenced Green political thought, with debates emerging over the role of green technology, renewable energy, and geo-engineering in addressing climate change. While some Greens embrace technological solutions, others caution against relying solely on technological fixes without addressing deeper systemic issues such as consumerism and economic growth models.

Green political thought has evolved from its early roots in conservation and environmental activism into a comprehensive political ideology that challenges dominant economic and political structures. It has influenced both grassroots movements and formal political institutions, shaping policies on sustainability, climate action, and social justice. As ecological crises become more pressing, Green political thought continues to adapt, advocating for systemic transformations that prioritize ecological integrity, social equity, and democratic participation. Its ongoing evolution reflects a growing recognition that environmental issues are deeply interconnected with economic and social structures, requiring holistic and transformative solutions.

Stop to Consider:

Key Philosophical Foundations of Green Political Thought:

Green political thought draws upon multiple philosophical perspectives, including:

- **Deep Ecology**: Advocates for the intrinsic value of nature beyond its utility to humans.
- **Ecofeminism**: Links environmental exploitation with patriarchal oppression.
- **Social Ecology**: Critiques hierarchical social structures as root causes of environmental destruction.
- **Post-Growth Economics**: Challenges the dominant growth paradigm and promotes sustainable alternatives.

3.4. Central Ideas of Green Political Thought

Green political thought centers on ecological sustainability, social justice, grassroots democracy, and nonviolence. It challenges the

dominant growth-oriented economic models, arguing that endless growth is incompatible with the planet's ecological limits. Green thinkers emphasize the interconnectedness of humans and nature, advocating for policies that protect the environment while promoting equity and inclusion. They often support decentralized decision-making, renewable energy, conservation, and a rethinking of consumption and production patterns to ensure long-term ecological balance and social well-being. The central ideas of green political thought can be summarised as follows:-

1. Ecological Sustainability: At the heart of green political thought is the principle of ecological sustainability. This idea underscores the necessity of maintaining the planet's ecosystems to support present and future generations. Green politics challenges the dominant economic model of infinite growth, arguing that the Earth's resources are finite and should be managed responsibly.

Sustainability is often articulated through concepts such as the ecological footprint, carrying capacity, and the precautionary principle. Green political theorists advocate for policies that promote renewable energy, conservation efforts, sustainable agriculture, and responsible consumption patterns to mitigate climate change and biodiversity loss.

The central concern of green political thought is ecological sustainability, which emphasizes maintaining planetary ecosystems for future generations. This principle challenges the industrial capitalist model of infinite economic growth and advocates for sustainable practices such as renewable energy, biodiversity conservation, and responsible resource management.

2. Social and Environmental Justice: Green political thought is deeply intertwined with social and environmental justice. It asserts that environmental degradation disproportionately affects

marginalized communities, both within and between nations. Issues such as air and water pollution, deforestation, and climate change often have the greatest impact on impoverished and indigenous populations who have contributed the least to environmental problems.

Environmental justice movements call for equitable distribution of environmental benefits and burdens, ensuring that vulnerable communities have a voice in environmental decision-making. Green politics also intersects with feminist and postcolonial critiques, highlighting how economic and ecological exploitation are often linked to social hierarchies.

Green political thought recognizes that environmental degradation disproportionately affects marginalized communities. The environmental justice movement seeks to address the inequitable distribution of environmental benefits and burdens.

3. Grassroots Democracy and Political Decentralization: Green political thought promotes grassroots democracy, emphasizing participatory decision-making at the local level. It challenges top-down governance models and calls for decentralization to empower local communities in shaping policies that affect them. Direct democracy, community-based initiatives, and consensus-building are key mechanisms through which green political actors seek to achieve democratic participation.

Decentralization is also seen as a way to enhance ecological sustainability, as locally governed systems are more attuned to the environmental realities of their immediate surroundings. This approach aligns with bioregionalism, a concept advocating for political and economic systems that respect ecological boundaries rather than arbitrary national borders.

Green politics advocates for participatory democracy, emphasizing decision-making at the community level. Decentralization strengthens local governance and enables communities to manage their ecological and social resources effectively. This principle aligns with bioregionalism, which promotes governance structures based on ecological boundaries rather than political borders.

4. Bioregionalism and Localism: Green political thought encourages local self-sufficiency and bioregionalism, where societies are organized around natural ecological boundaries rather than arbitrary national borders. It supports small-scale, localized economies instead of globalized, corporate-driven trade. Bioregionalism emphasizes living in harmony with local ecosystems, using regionally available resources, and protecting indigenous ecological knowledge. The key example of bioregionalism is movements promoting "slow food", organic farming, and permaculture which advocate for a return to local food production systems rather than industrial agriculture.

5. Nonviolence and Ecological Ethics: Nonviolence is a fundamental tenet of green political thought, not only in the context of human conflict but also in humanity's relationship with nature. Green theorists argue that violence against people and violence against nature is interconnected, stemming from systems of domination and exploitation.

Inspired by thinkers such as Mahatma Gandhi and ecofeminists, green politics promotes nonviolent resistance, civil disobedience, and alternative ways of organizing society that reject coercion and domination. This extends to advocating for animal rights, biodiversity conservation, and ethical treatment of all living beings.

Green political thought promotes nonviolent approaches to resolving conflicts, both in human societies and in human-nature

relationships. Inspired by pacifist traditions, it advocates for civil disobedience, activism, and policy reforms that prevent ecological harm. Animal rights, biodiversity conservation, and ethical treatment of all living beings are integral to this principle.

6. Limits to Growth and Alternative Economic Models: Green political thought strongly criticises mainstream economic paradigms that emphasize perpetual growth. The "limits to growth" argument, popularized by the Club of Rome's 1972 report, warns that unregulated economic expansion leads to resource depletion and ecological collapse. The Limits to Growth approach, introduced in the 1972 report by the Club of Rome, uses systems modeling to argue that unchecked economic and population growth on a planet with finite resources is unsustainable. The report projected that if current trends in industrialization, pollution, resource depletion, and population increase continued, it would lead to ecological and economic collapse within a century. It challenged the dominant development paradigm that equated growth with progress, calling instead for a shift toward sustainable resource use, population stabilization, and environmental conservation. Critics initially dismissed it as alarmist, but its core message has gained renewed relevance amid today's climate crisis, emphasizing that without structural changes, humanity risks breaching planetary boundaries.

As an alternative, green political theorists propose models such as steady-state economics, degrowth, and circular economies, which prioritize sustainability over profit maximization. These models emphasize quality of life, ecological balance, and social well-being rather than GDP growth as measures of progress.

Green political thought criticises the conventional model of economic growth, arguing that unregulated industrial expansion leads to resource depletion and ecological collapse. From a green political thought perspective, an alternative economic model

prioritizes ecological sustainability, social justice, and participatory democracy over economic growth and profit maximization. It challenges the environmental destruction caused by capitalist and neoliberal economies, advocating for degrowth, circular economies, and localism to reduce resource depletion and waste. Green economic models emphasize renewable energy, ecological balance, and community-based decision-making, ensuring that economic activities respect planetary boundaries. They also incorporate social equity, recognizing that environmental harm disproportionately affects marginalized communities, and seek to create just, resilient economies that work in harmony with nature rather than exploiting it.

7. Holism and Interconnectedness: A holistic understanding of ecological and social systems is central to green political thought. This perspective recognizes that environmental issues cannot be separated from social, economic, and political structures. Holism challenges reductionist approaches that treat problems in isolation and instead promotes systemic thinking. Deep ecology, for example, asserts that all forms of life have intrinsic value, not just those deemed useful to humans. This perspective calls for a radical shift in human consciousness to recognize the interconnectedness of all living beings and ecosystems.

8. Ecocentrism vs. Anthropocentrism: Ecocentrism and anthropocentrism represent two contrasting perspectives on the relationship between humans and nature. Anthropocentris**m** places human needs and interests at the center of decision-making, viewing nature primarily as a resource for human benefit. This perspective often justifies environmental exploitation for economic growth, technological progress, and human well-being. In contrast, ecocentrism sees nature as having intrinsic value, independent of its

usefulness to humans. It promotes the idea that ecosystems, species, and natural processes deserve protection for their own sake, advocating for a holistic, interconnected approach to environmental ethics. While anthropocentrism tends to prioritize short-term human gains, ecocentrism emphasizes long-term ecological sustainability and the well-being of the entire planet. Deep ecologists like Arne Naess argue that humans must adopt a "deep" relationship with nature, recognizing that ecological balance is more important than human-centered economic or political goals.

9. Critique of Capitalism and Industrialization: Many green thinkers argue that capitalism is inherently unsustainable, as it relies on endless resource extraction, consumption, and waste. Green political thought criticises capitalism and industrialization for their exploitative relationship with nature and their role in deepening social and ecological crises. It argues that capitalism's pursuit of endless economic growth leads to environmental destruction, resource depletion, and climate change, while industrialization reinforces unsustainable consumption patterns and social inequalities. Green politics challenges the profit-driven logic of capitalism, advocating for economic models that prioritize ecological balance, social justice, and democratic participation. It also critiques industrialization for prioritizing efficiency and mass production at the expense of biodiversity, local communities, and future generations. Instead, green political thought promotes degrowth, renewable energy, and sustainable development as alternatives to the environmentally and socially harmful impacts of capitalist industrialization. The concept of "green jobs" promotes a shift from fossil-fuel-based industries to renewable energy, organic farming, and eco-friendly manufacturing.

3.5. Green Political Strategies and Policy Implications

Green political strategies are designed to promote ecological sustainability, social justice, and participatory democracy. These strategies encompass a wide range of approaches, from grassroots activism and policy advocacy to institutional engagement and international cooperation. Green political movements seek to transform economic and political systems that contribute to environmental degradation and social inequality. Their policy implications extend to various sectors, including energy, transportation, agriculture, and governance, advocating for sustainable alternatives that balance human development with ecological integrity.

- **Grassroots Mobilization and Direct Action**

One of the primary strategies employed by Green political movements is grassroots mobilization. Activists and environmental organizations work at the community level to raise awareness, organize protests, and push for policy changes. Movements such as Fridays for Future, led by youth climate activists, and Extinction Rebellion, which employs acts of civil disobedience, demonstrate how grassroots activism can pressure governments and corporations to take urgent action on climate change.

Direct action plays a crucial role in Green political strategies, as seen in protests against deforestation, fossil fuel extraction, and industrial pollution. Environmental groups use tactics such as sit-ins, blockades, and legal challenges to halt environmentally destructive projects. For example, indigenous communities have resisted pipeline construction in North America to protect their lands and water sources, aligning with Green political principles of environmental justice and indigenous rights.

Grassroots activism also extends to local initiatives that promote sustainable living, such as community-led renewable energy projects, urban farming, and zero-waste movements. These efforts aim to demonstrate viable alternatives to unsustainable consumption patterns and encourage broader systemic changes.

- **Institutional Engagement and Green Party Politics**

While grassroots activism is vital, Green political thought also emphasizes engagement with formal political institutions to enact systemic change. Green parties have emerged worldwide, integrating ecological concerns into mainstream politics. These parties advocate for policies such as transitioning to renewable energy, implementing carbon taxes, and promoting sustainable urban planning.

The German Green Party (*Die Grünen*) is a prominent example of how Green political strategies can influence governance. Since its formation in the 1980s, the party has played a key role in shaping Germany's energy transition (*Energiewende*), which aims to phase out nuclear power and expand renewable energy sources. Green parties in countries like Canada, Australia, and the European Union have also influenced policies on climate action, biodiversity protection, and social equity.

However, institutional engagement presents challenges, as Green parties must navigate political compromises and coalition-building. In some cases, Green politicians have faced criticism for moderating their policies to align with broader government agendas, raising debates about the effectiveness of working within existing political structures versus pursuing more radical, systemic change.

- **Policy Approaches to Environmental Sustainability**

Green political strategies have led to concrete policy measures aimed at reducing environmental harm and promoting sustainable

development. One of the key areas of focus is climate policy, which includes measures such as carbon pricing, emissions reductions, and incentives for renewable energy adoption. Policies like the European Union's Green Deal and the Green New Deal proposals in the United States illustrate how Green political thought is influencing large-scale economic transformations toward sustainability.

Renewable energy policies are central to Green politics, advocating for the transition away from fossil fuels toward wind, solar, hydro, and geothermal power. Governments implementing Green policies often provide subsidies for clean energy projects, establish renewable energy targets, and invest in energy efficiency programs. For instance, Denmark has made significant strides in wind energy adoption, showcasing how policy support can drive the shift to sustainable energy.

Sustainable transportation policies also feature prominently in Green political strategies. These include investments in public transportation, cycling infrastructure, and electric vehicle incentives. Cities such as Amsterdam and Copenhagen have successfully integrated sustainable transport policies, reducing urban emissions and promoting healthier lifestyles. Additionally, Green advocates push for the reduction of air travel emissions through taxes on frequent flying and investments in high-speed rail networks as an alternative.

In the agricultural sector, Green policies promote organic farming, biodiversity conservation, and reductions in chemical pesticide and fertilizer use. Policies supporting regenerative agriculture and local food systems aim to enhance food security while reducing the environmental impact of industrial farming. Some Green movements also advocate for a shift away from industrial meat production due to its high greenhouse gas emissions and land use footprint.

- **Environmental Justice and Social Equity Policies**

Green political thought recognizes that environmental issues disproportionately affect marginalized communities, particularly in the Global South. As a result, Green policies often include measures to address environmental justice and social equity. Climate justice frameworks advocate for policies that hold wealthy nations and corporations accountable for their contributions to climate change while ensuring vulnerable communities receive support for adaptation and resilience-building.

One example is the push for loss and damage compensation, where developed nations provide financial and technical assistance to countries facing severe climate impacts such as rising sea levels, droughts, and extreme weather events. The concept of a "just transition" is also central to Green policies, ensuring that workers in fossil fuel industries are supported through retraining programs and alternative employment opportunities as economies transition to clean energy.

Green political strategies also intersect with gender and development policies, recognizing that women, especially in the Global South, are disproportionately affected by environmental degradation. Ecofeminism, a key strand of Green thought, emphasizes the need for policies that empower women in environmental decision-making, promote land rights for female farmers, and provide resources for sustainable livelihoods.

- **International Cooperation and Green Diplomacy**

Addressing global environmental challenges requires international collaboration, and Green political strategies emphasize diplomatic efforts to create binding agreements on climate change, biodiversity protection, and pollution reduction. Agreements such as the Paris Agreement (2015) and the Convention on Biological Diversity

reflect Green political priorities at the international level. Green diplomats and policymakers advocate for stronger enforcement mechanisms, increased climate finance for developing nations, and the protection of natural ecosystems through legally binding treaties.

Green political strategies also involve challenging corporate power and advocating for strict environmental regulations on multinational corporations**.** This includes measures such as banning single-use plastics, enforcing corporate responsibility for pollution, and promoting ethical supply chains. The European Union's recent carbon border tax is an example of a policy designed to ensure that imported goods meet environmental standards, preventing carbon leakage where companies relocate to countries with weaker regulations.

Additionally, Green politics supports degrowth and post-growth economic models, which challenge the assumption that infinite economic growth is sustainable. Proponents argue that policies should prioritize well-being, environmental health, and social equity over GDP expansion. This perspective has influenced discussions on alternative economic indicators such as the Genuine Progress Indicator (GPI) and Doughnut Economics, which integrate ecological limits into economic planning.

- **Challenges and Future Directions**

Despite significant progress, Green political strategies face challenges in implementation. Resistance from powerful fossil fuel industries, political opposition, and economic constraints often hinder the adoption of Green policies. In some cases, Green policies are criticized for being economically burdensome or politically unfeasible, leading to debates over the balance between environmental urgency and economic stability.

Future directions for Green politics may involve greater emphasis on technological innovation, including advancements in carbon capture, circular economy models, and sustainable urban planning. Additionally, as the climate crisis worsens, Green political strategies will need to address emerging issues such as climate-induced migration, resource conflicts, and the ethical implications of geo-engineering.

Green political strategies encompass a wide range of approaches, from grassroots activism and electoral engagement to international diplomacy and systemic economic reforms. Their policy implications extend across energy, transportation, agriculture, and social justice, aiming to create a sustainable and equitable world. As environmental challenges intensify, Green political thought will continue to evolve, advocating for transformative policies that prioritize ecological integrity, democratic participation, and global justice. The success of Green policies will depend on continued activism, political will, and the ability to integrate environmental concerns into all aspects of governance and economic planning.

3.6 The Role of Green Parties and Movements

Green parties and movements play a crucial role in advancing environmental sustainability, social justice, and participatory democracy. They act as catalysts for political change by influencing policy, challenging dominant economic models, and mobilizing communities to address ecological crises. While Green movements operate through grassroots activism and direct action, Green parties engage with formal political institutions to advocate for environmental policies. Together, they shape public discourse, push for legislative reforms, and promote sustainable alternatives to existing political and economic systems.

- **The Emergence and Growth of Green Parties**

Green parties began emerging in the late 20th century in response to growing concerns about environmental degradation, nuclear proliferation, and social inequality. One of the first and most influential Green parties was *Die Grünen* (The Greens) in West Germany, founded in 1980. The party combined environmental concerns with social justice and anti-militarization policies, distinguishing itself from traditional political ideologies. It successfully entered the German Bundestag in 1983, marking a significant shift in the political landscape.

Since then, Green parties have gained traction in various countries, particularly in Europe, Australia, and Canada. Many have entered national parliaments and regional legislatures, demonstrating that environmental issues can be a central focus of mainstream politics. In the European Union, Green parties have played a vital role in shaping climate policies, influencing the European Green Deal, and advocating for stricter environmental regulations. Countries such as Sweden, Finland, and the Netherlands have also seen strong Green party representation, contributing to policies on renewable energy, sustainable agriculture, and social welfare.

However, the success of Green parties varies globally. In some countries, such as the United States, Green parties struggle to gain electoral traction due to majoritarian electoral systems that favor two-party dominance. Nonetheless, they continue to influence political debates by introducing environmental and social justice issues into public discourse and challenging corporate-driven policies.

- **Green Party Policies and Legislative Impact**

Green parties emphasize policy platforms centered on sustainability, ecological economics, social justice, and grassroots democracy.

Their legislative efforts often focus on climate action, renewable energy, biodiversity conservation, and environmental justice.

One of the most significant achievements of Green parties is their role in shaping climate policies. In Germany, the Greens have been instrumental in advancing the *Energiewende* (energy transition) policy, which aims to phase out fossil fuels and nuclear energy while expanding renewable energy sources. Similarly, in New Zealand, the Green Party has advocated for ambitious carbon reduction targets and stricter environmental regulations.

Green parties also play a key role in advocating for social policies that align with environmental sustainability. They often support a Green New Deal framework, which links economic transformation with climate action by promoting green jobs, sustainable infrastructure, and income equality. Policies such as universal basic income (UBI), regenerative agriculture, and sustainable transportation are commonly included in Green party platforms.

Additionally, Green parties push for stronger corporate accountability and environmental regulations. They advocate for policies such as carbon taxes, bans on single-use plastics, and stricter pollution controls on industries. By holding corporations accountable for their environmental impact, Green parties seek to transition economies toward circular and sustainable models.

- **Green Movements: Grassroots Activism and Direct Action**

While Green parties engage in formal politics, Green movements operate at the grassroots level, using activism and direct action to push for environmental and social change. These movements often emerge in response to specific environmental threats, such as deforestation, pollution, or climate change.

One of the most influential Green movements in recent years is Fridays for Future (FFF), founded by Swedish activist Greta Thunberg. This youth-led movement has mobilized millions worldwide, organizing climate strikes to demand urgent government action on climate change. FFF has successfully influenced international climate discussions, pressuring leaders to adopt stronger carbon reduction commitments.

Similarly, Extinction Rebellion (XR) has gained global recognition for its use of nonviolent civil disobedience to demand climate action. XR activists have staged protests, blockades, and demonstrations to draw attention to the climate crisis, pushing for policies that prioritize environmental sustainability over economic growth.

Indigenous-led movements also play a crucial role in Green politics. In North America, indigenous groups have been at the forefront of resistance against fossil fuel projects, such as the Keystone XL and Dakota Access pipelines. These movements highlight the intersection of environmental justice, indigenous rights, and anti-colonial resistance, emphasizing that environmental protection must also address historical and systemic injustices.

- **The Relationship Between Green Parties and Green Movements**

Green parties and Green movements share common goals but often differ in their approaches to achieving them. Movements prioritize direct action and grassroots mobilization, while parties seek to influence policy through formal political processes. This dynamic can sometimes create tensions, as movements may criticize Green parties for making compromises within political institutions.

For example, when Green parties enter coalitions with mainstream political parties, they sometimes face pressure to moderate their

policies. In Germany, the Greens have had to navigate coalition agreements that required compromises on climate and economic policies. Some activists argue that working within the political system can dilute Green ideals, while others see it as a necessary step toward achieving systemic change.

Despite these tensions, Green parties and movements often collaborate. Movements provide the grassroots pressure needed to push environmental issues onto the political agenda, while Green parties work to translate these demands into concrete policies. The relationship between the two is essential for maintaining momentum in the fight for environmental sustainability and social justice.

- **Challenges Faced by Green Parties and Movements**

Both Green parties and movements face significant challenges in their efforts to drive systemic change. One major obstacle is the influence of corporate interests and fossil fuel lobbies, which often resist environmental regulations and climate policies. Many governments remain deeply tied to extractive industries, making it difficult for Green parties to implement transformative policies.

Another challenge is political opposition and public skepticism. In some countries, Green policies are criticized as economically disruptive, with opponents arguing that climate action could lead to job losses and economic instability. Green parties must navigate these concerns by advocating for just transition policies that support workers in fossil fuel industries while promoting green job creation.

Electoral challenges also pose a barrier to Green parties, particularly in countries with first-past-the-post electoral systems, where smaller parties struggle to gain representation. In contrast, proportional representation systems, such as those in many European countries, have enabled Green parties to achieve greater political influence.

For Green movements, sustaining momentum and engagement over time can be difficult. Many movements experience periods of intense activism followed by decline when media attention shifts elsewhere. Additionally, government crackdowns and legal restrictions on protests pose risks to activists engaged in civil disobedience.

- **Future Prospects for Green Parties and Movements**

Despite these challenges, the influence of Green parties and movements continues to grow, particularly as the climate crisis becomes more urgent. Public awareness of environmental issues is increasing, with more voters prioritizing sustainability in elections. The rise of younger generations demanding climate action is also likely to strengthen Green political movements and parties.

In the future, Green parties may focus on integrating ecological economics into mainstream governance, advocating for policies that redefine economic success beyond GDP growth. Concepts such as the Doughnut Economics model, which balances ecological sustainability with social well-being, could shape future Green policies.

Green movements will likely continue to evolve, using digital activism, decentralized organizing, and intersectional approaches to address climate justice. The increasing convergence between environmental activism, human rights advocacy, and social movements suggests that Green politics will play a central role in shaping the future of global governance.

Green parties and movements are vital forces in the fight for environmental sustainability and social justice. While parties work within political institutions to implement legislative changes, movements use grassroots activism and direct action to pressure governments and corporations. Both face challenges, but their

influence continues to grow as climate change and ecological degradation demand urgent action. The synergy between Green parties and movements will be essential in driving systemic transformation toward a more sustainable and equitable world.

3.7 The Future of Green Political Thought

As the world grapples with intensifying environmental crises, economic instability, and social inequalities, Green political thought is expected to evolve and expand its influence. The urgency of climate change, biodiversity loss, and resource depletion demands innovative and transformative political approaches that go beyond conventional environmental policies. The future of Green political thought will likely focus on integrating ecological sustainability with economic and social justice, advancing technological and policy innovations, and addressing global challenges such as climate migration and environmental governance.

- **Integration of Ecological Economics into Governance**

One of the most significant shifts in Green political thought will be the increasing emphasis on ecological economics as an alternative to the traditional growth-based economic model. Current economic systems prioritize GDP growth, often at the expense of environmental sustainability. Green political thinkers argue that infinite economic expansion is unsustainable on a planet with finite resources. Instead, the future of Green politics may focus on post-growth and degrowth models, advocating for economies that prioritize well-being, social equity, and ecological health over profit maximization.

The concept of Doughnut Economics, developed by economist Kate Raworth, provides a framework for balancing human needs with planetary boundaries. Green political movements may increasingly

push for policies that implement this model, emphasizing sustainable resource use, circular economies, and social welfare over consumer-driven economies. Governments could adopt new economic indicators, such as the Genuine Progress Indicator (GPI) or Happiness Index, to measure societal well-being rather than economic output alone.

- **Climate Action and Green Transitions**

The climate crisis will remain a central focus of Green political thought, with increasing demands for rapid decarbonization and sustainable energy transitions. Future policies will likely emphasize energy democracy, where local communities have control over renewable energy production, rather than relying on centralized fossil fuel industries. This shift could see the rise of decentralized renewable energy grids, community-owned wind and solar farms, and the expansion of energy cooperatives.

Additionally, Green political thought may advocate for climate adaptation and resilience policies, recognizing that some climate impacts are now unavoidable. Investments in climate-resilient infrastructure, disaster preparedness, and water security will become priorities. The concept of climate justice will also gain more attention, ensuring that vulnerable populations—particularly in the Global South—receive financial and technical support to cope with climate change impacts. The push for mechanisms like loss and damage compensation, where developed nations take financial responsibility for climate impacts in developing countries, is expected to grow.

- **Green Technological Innovation and Sustainable Development**

Technology will play a crucial role in shaping the future of Green political thought, but debates will arise over the ethics and

implications of emerging green technologies. Advances in carbon capture and storage (CCS), geo-engineering, and synthetic biology offer potential solutions to environmental crises, but they also pose risks related to corporate control, unintended ecological consequences, and governance challenges. Green politics will need to navigate these debates, advocating for technology that serves ecological and social justice goals rather than perpetuating inequalities.

Additionally, circular economy models—which promote waste reduction, recycling, and sustainable production—are expected to become central to Green political strategies. Policies could mandate extended producer responsibility (EPR), where companies are held accountable for the entire lifecycle of their products, including waste management and recycling. The concept of zero-waste cities will gain traction, with urban centers adopting policies that eliminate landfill dependency through composting, reuse, and sustainable packaging initiatives.

- **Environmental Justice and Intersectionality**

The future of Green political thought will increasingly emphasize intersectionality, recognizing that environmental issues are deeply connected to social justice concerns such as race, class, gender, and indigenous rights. The climate crisis disproportionately affects marginalized communities, making it essential to integrate environmental justice into policy frameworks.

Ecofeminism, which highlights the links between gender oppression and environmental destruction, may play a larger role in Green politics, advocating for policies that empower women in environmental decision-making and sustainable development. Indigenous knowledge systems, which have long emphasized ecological balance and land stewardship, will also become more

central to Green policy discussions, challenging Western models of resource exploitation.

Green political movements are likely to push for legal recognition of the rights of nature, granting ecosystems legal personhood to protect them from exploitation. Countries such as Ecuador and New Zealand have already implemented such policies, recognizing rivers and forests as legal entities with rights. This trend may expand globally, reinforcing the idea that nature should be protected not only for human benefit but as a fundamental ethical responsibility.

- **Global Environmental Governance and Green Diplomacy**

As climate change and environmental degradation transcend national borders, Green political thought will emphasize stronger international cooperation and environmental governance mechanisms**.** The limitations of current agreements, such as the Paris Agreement, have demonstrated the need for binding international policies that hold corporations and governments accountable for their environmental impact.

Green diplomacy will advocate for global carbon taxation, stricter environmental regulations on multinational corporations, and international funding for climate mitigation and adaptation**.** Additionally, issues such as climate-induced migration will require coordinated global policies, as rising sea levels, extreme weather events, and resource scarcity force millions to relocate. Green political thought will push for humanitarian responses that integrate environmental sustainability with human rights protections.

Furthermore, discussions on demilitarization and peace building may gain prominence in Green politics, emphasizing the connections between environmental degradation, conflict, and resource wars. Future Green strategies may call for redirecting

military expenditures toward ecological restoration and peace-oriented development initiatives.

- **Challenges and Resistance to Green Political Thought**

Despite its growing influence, Green political thought will face significant resistance from entrenched economic and political structures. Fossil fuel industries, corporate interests, and conservative political forces often resist Green policies due to perceived economic risks or ideological opposition. Green politics will need to counter disinformation campaigns that downplay climate change and environmental degradation.

Public skepticism about the feasibility of Green policies, particularly in regions dependent on fossil fuels, will also pose a challenge. To address these concerns, Green political movements will need to emphasize the economic and social benefits of sustainability, such as job creation in renewable energy sectors, improved public health through pollution reduction, and long-term cost savings from climate mitigation efforts.

Additionally, the risk of green washing—where corporations and governments adopt superficial environmental policies without meaningful action—will require greater transparency and accountability. Future Green political strategies will need mechanisms to hold policymakers and businesses accountable for their environmental commitments**,** ensuring that sustainability is not just a branding tool but a genuine priority.

- **The Role of Youth Movements and Future Generations**

One of the most promising aspects of Green political thought is the growing involvement of youth-led movements**.** Organizations like Fridays for Future and Extinction Rebellion have demonstrated the power of youth activism in shaping political discourse and demanding accountability from leaders. As younger generations

become more politically active, Green politics is likely to gain more mainstream traction, pushing for radical reforms that prioritize long-term ecological stability over short-term economic interests**.**

Educational initiatives focusing on environmental literacy, climate science, and sustainability practices will play a key role in shaping future Green political leaders. Integrating Green political thought into school curriculums and higher education programs will help create a generation that is well-equipped to address ecological challenges with innovative and equitable solutions.

The future of Green political thought will be shaped by a combination of policy innovation, grassroots activism, and international cooperation. As climate change and environmental degradation become more pressing, Green politics will push for economic models that prioritize sustainability, stronger environmental governance, and policies that integrate social justice with ecological resilience. While challenges such as corporate resistance, political opposition, and green washing persist, the increasing awareness and mobilization of people worldwide suggest that Green political thought will continue to influence the global agenda. The coming decades will be crucial in determining whether humanity can transition toward a just and sustainable world, and Green political movements and parties will be at the forefront of this transformation.

Check Your Progress:

1. In which year The German Green Party was founded?
2. What do you mean by deep ecology?
3. What is social ecology?
4. Discuss the evolution of green political thought in the 21st century.

5. Analyse the central ideas of green political thought.
6. What is bioregionalism?
7. Differentiate between ecocentrism and anthropocentricsm.
8. What do you mean by green jobs?
9. Discuss briefly the green political strategies and policy implications.
10. Analyse the role of green parties.
11. Examine the future of green political thought.

Self Asking Question

Do you think youth movements play a major role in shaping green political discourse? Examine.

……
……
……
……
……

3.8 Summing Up

After reading this unit you have understood that, Green political thought offers a transformative vision for a sustainable and just world. By integrating ecological sustainability, social justice, grassroots democracy, and ethical considerations, it challenges dominant paradigms and seeks to reshape political and economic systems. As climate change and ecological crises intensify, the relevance of green political thought continues to grow, providing critical insights for reimagining humanity's relationship with nature and each other.

3.9 References and Suggested Readings

Dobson, A. (2007). *Green political thought*. Routledge.

Mazzaro, M. (2021). The Green Political Thought.

Sharlamanov, K. (2023). Green Political Thought. In *The Left Libertarianism of the Greens* (pp. 65-93). Cham: Springer Nature Switzerland.

---×---

UNIT- 4

ECOFEMINISM

Unit Structure:

4.1 Introduction
4.2 Objectives
4.3 Historical Background of Ecofeminism
4.4 Core Themes of Ecofeminism
4.5 Criticisms of Ecofeminism
4.6 Contemporary Relevance of Ecofeminism
4.7 Summing Up
4.8 References and Suggested Readings

4.1 Introduction

Ecofeminism is a theoretical and activist framework that links the oppression of women and marginalized communities to the exploitation and degradation of nature. Rooted in feminist and environmental thought, ecofeminism argues that the same structures—patriarchy, capitalism, and colonialism—that subordinate women and non-human life also drive environmental destruction. This unit will examine the origins, key themes, and impact of ecofeminism while highlighting its relevance in contemporary discussions on gender and sustainability.

4.2 Objectives

After reading this unit you will be able to

- *understand* the historical background of eco feminism;
- *analyse* the core theme of eco feminism;

- *examine* the criticisms leveled against ecofeminism;
- *know* the contemporary relevance of ecofeminism.

4.3 Historical Background of Ecofeminism

Ecofeminism emerged as a distinct movement in the 1970s and 1980s, intertwining feminist and environmental concerns to criticise the shared roots of women's oppression and ecological degradation. The term *écoféminisme* was first coined by French feminist Françoise d'Eaubonne in her 1974 book *Le Féminismeou la Mort* (*Feminism or Death*), in which she argued that patriarchal structures were responsible for both the subjugation of women and the destruction of nature. However, ecofeminist ideas can be traced back much further, as they are deeply rooted in earlier feminist movements, ecological thought, and indigenous knowledge systems that have long emphasized harmony between humans and nature.

The early feminist movement, particularly in the 19th and early 20th centuries, primarily focused on securing women's legal and political rights, such as suffrage. While these movements did not explicitly link environmental concerns to gender issues, women's activism in areas such as health, sanitation, and conservation often reflected an implicit recognition of their relationship with nature. In the late 19th century, conservationist movements led by women, such as those associated with the Sierra Club in the United States, helped lay the groundwork for ecofeminist thought. Similarly, Rachel Carson's *Silent Spring* (1962) exposed the dangers of industrial pollution, inspiring both the modern environmental movement and later ecofeminist criticism of corporate and patriarchal control over nature.

During the 1970s and 1980s, ecofeminism gained momentum alongside the rise of second-wave feminism and environmental

activism. This period saw growing awareness of the interconnectedness between gender and ecological issues, particularly in response to the negative impacts of industrialization, deforestation, and large-scale development projects. Women, especially in the Global South, played crucial roles in resisting environmental destruction. The Chipko Movement in India (1973), for example, saw rural women embrace trees to prevent deforestation, highlighting how environmental degradation disproportionately affects women who rely on natural resources for their livelihoods. Similarly, Wangari Maathai's Green Belt Movement in Kenya (founded in 1977) mobilized women to plant trees and restore degraded ecosystems, emphasizing the role of women as agents of the environment.

In the 1980s and 1990s, ecofeminism evolved as a theoretical framework, with scholars such as Vandana Shiva**,** Maria Mies, and Carolyn Merchant contributing critical perspectives on the links between patriarchy, capitalism, colonialism, and ecological destruction. Vandana Shiva, in particular, criticized the Western model of development, arguing that it promotes exploitative agricultural and industrial practices that harm both nature and women, particularly in the Global South. Maria Mies' work further developed ecofeminist criticism of capitalist globalization, emphasizing how the exploitation of women's labor and natural resources are interconnected under neoliberal economic policies. Carolyn Merchant, in her book *The Death of Nature* (1980), traced the historical shift from organic, interconnected worldviews to mechanistic, patriarchal conceptions of nature that justified its exploitation.

By the late 1990s and into the 21st century, ecofeminism continued to evolve, intersecting with issues such as climate justice, Indigenous rights, and decolonial feminism. Contemporary

ecofeminists challenge corporate environmentalism and advocate for grassroots, community-led solutions to ecological crises. The movement has also expanded to include critiques of heteronormativity, race, and class, recognizing that environmental degradation disproportionately affects marginalized communities. Activists and scholars in the Global South have played a particularly influential role in shaping modern ecofeminism, emphasizing Indigenous ecological knowledge, sustainable agriculture, and resistance against extractivist industries.

Today, ecofeminism remains a vital and evolving framework for understanding the connections between gender, ecology, and social justice. While some critiques argue that early ecofeminism relied too heavily on essentialist notions of women's innate connection to nature, more recent ecofeminist thought has moved towards intersectional and structural analyses that challenge both patriarchal and capitalist systems of oppression. Whether in climate activism, food sovereignty movements, or critiques of neoliberal development policies, ecofeminism continues to offer a powerful lens for envisioning a more just and sustainable world.

Ecofeminist thought encompasses several broad variants that reflect diverse perspectives on the interconnectedness of gender, nature, and power. Spiritual ecofeminism emphasizes a symbolic and sacred relationship between women and nature, often drawing on goddess traditions and indigenous spiritualities to challenge patriarchal worldviews. Transformative ecofeminism focuses on structural change, linking the domination of nature and women to capitalist, patriarchal systems and advocating for deep socio-political transformation. Global ecofeminism addresses transnational issues like environmental degradation, exploitation of labor, and climate injustice, highlighting how women—especially in the Global South—bear the brunt of environmental harm. Postcolonial

ecofeminism critiques the imposition of Western environmental and feminist narratives on non-Western societies, emphasizing the need to recognize local knowledges, resist neocolonial development models, and foreground the voices of marginalized women. Together, these strands show that ecofeminism is not monolithic but a rich, evolving field that addresses ecological and gender justice through multiple, intersecting lenses.

4.4 Core Themes of Ecofeminism

Ecofeminism links the exploitation of nature with the oppression of women, arguing that both stem from patriarchal structures that value dominance, control, and hierarchy. It emphasizes the interconnectedness of all life and critiques the dualisms—such as man/woman and human/nature—that underpin Western thought. Ecofeminists advocate for a more holistic, caring, and ethical relationship with the environment, rooted in cooperation rather than domination. They highlight how environmental degradation disproportionately affects women, especially in marginalized communities, and call for social and ecological justice through inclusive and sustainable practices.

1. Women-nature Association

A core theme of ecofeminism is the deep and complex association between women and nature, a relationship that has been both celebrated and critically analyzed within ecofeminist thought. This connection is rooted in historical, cultural, and socio-economic structures that have positioned women and nature as entities to be controlled, exploited, and subordinated under patriarchal and capitalist systems. Ecofeminists argue that the same systems that dominate and degrade the environment also oppress women,

particularly those in marginalized communities, making environmental justice and gender justice inseparable struggles.

Historically, many societies have associated women with nature through metaphors of fertility, reproduction, and nurturing. In various cultures, the earth is personified as a mother figure—such as "Mother Earth" or "Gaia"—who provides life and sustenance. This symbolic association has often been used to justify both the reverence and the exploitation of women and nature. Ecofeminists like Carolyn Merchant have criticised this historical linkage, arguing that the transition from pre-industrial, organic worldviews to mechanistic, patriarchal perspectives during the Scientific Revolution led to the objectification of both women and the environment. This shift enabled the exploitation of natural resources and the subjugation of women's labour, particularly in the rise of industrial capitalism.

One of the most significant ways in which women's connection to nature manifests is through their role in subsistence economies, particularly in the Global South. Women are often the primary caregivers and food providers in many rural communities, responsible for agriculture, water collection, and household energy needs. As a result, they are disproportionately affected by environmental degradation, deforestation, water scarcity, and climate change. Vandana Shiva, a leading ecofeminist scholar, argues that Western models of development and industrial agriculture have disrupted traditional ecological knowledge systems, displacing women from their roles as custodians of biodiversity and sustainable farming practices. Shiva's work highlights how Indigenous and rural women's knowledge of seed preservation, soil fertility, and local ecosystems is crucial for sustainable development, yet it is frequently devalued under patriarchal and capitalist economic models.

Ecofeminist activism has also demonstrated the ways in which women's struggles for environmental justice are deeply intertwined with their fight against gender oppression. Movements such as the Chipko Movement in India (where women physically embraced trees to prevent deforestation) and the Green Belt Movement in Kenya (which mobilized women to plant trees and combat desertification) illustrate how women's ecological activism is often motivated by the need to protect both their immediate livelihoods and the well-being of future generations. These movements challenge the dominant development paradigm, advocating for community-based, sustainable alternatives that recognize women as central actors in environmental conservation.

While some strands of ecofeminism emphasize an essentialist view of women as being inherently closer to nature due to their reproductive capacities, others critique this perspective and instead focus on the social and structural reasons why women and nature are linked. Social ecofeminists, for example, argue that the connection between women and nature is not biological but rather the result of patriarchal divisions of labor and historical inequalities. This perspective aligns with intersectional feminism, recognizing that factors such as race, class, and colonial histories shape different women's experiences with environmental degradation and resource exploitation.

In contemporary ecofeminism, the connection between women and nature extends to broader discussions of climate justice, sustainable development, and Indigenous ecological knowledge. The ongoing fight against extractivist industries—such as mining, deforestation, and large-scale agribusiness—has increasingly been led by women, particularly in Latin America, Africa, and Asia. Their activism highlights the role of women not only as victims of environmental

destruction but as agents of change who resist ecological harm and advocate for alternative models of living in harmony with nature.

Ultimately, the ecofeminist theme of the connection between women and nature serves as a powerful criticism of the dominant systems that exploit both. By recognizing women's knowledge, labor, and activism as vital to ecological sustainability, ecofeminism provides a transformative framework for rethinking development, environmental policies, and social justice. While debates continue over the risks of reinforcing gender essentialism, most ecofeminists agree that challenging patriarchal structures is key to achieving a more equitable and sustainable world.

2. Critique of Dualisms

One of the central philosophical contributions of ecofeminism is its critique of dualism, a system of thought that divides the world into opposing, hierarchical categories such as man/woman, culture/nature, reason/emotion, and human/animal. Ecofeminists argue that these dualisms, deeply embedded in Western thought, have been used to justify the domination of both women and nature under patriarchal and capitalist systems. By challenging these binary oppositions, ecofeminism calls for a more interconnected and holistic understanding of human relationships with the environment.

Western philosophical traditions, particularly those influenced by Descartes and the Enlightenment, have long upheld the dualistic separation of mind and body, human and nature, and reason and emotion. Carolyn Merchant, in The Death of Nature (1980), traces the historical shift from organic, interconnected worldviews to mechanistic and patriarchal perspectives. She argues that the rise of modern science and industrial capitalism reinforced the idea that nature, like women, could be controlled, dissected, and exploited. The mechanistic worldview reduced nature to a passive resource,

stripping it of agency and spiritual significance, much like how patriarchal ideologies have historically objectified and subordinated women.

Ecofeminists argue that these dualisms not only privilege one category over another but also create hierarchical systems of domination. For instance, the culture/nature dualism places human (especially male) culture above nature, justifying environmental exploitation. Similarly, the man/woman dualism associates men with reason, culture, and civilization while linking women to nature, emotions, and reproduction—often portraying them as less rational or more instinct-driven. These associations have contributed to the historical oppression of women, who were frequently excluded from intellectual, political, and economic spheres on the grounds that they were closer to nature and, therefore, less capable of abstract reasoning and leadership.

This criticism extends beyond gender to other forms of oppression, including race, class, and colonialism. Ecofeminists like Maria Mies and Vandana Shiva argue that the same dualistic thinking that legitimizes the domination of women and nature also underpins colonialism and capitalism. The Global North's exploitation of the Global South, for example, mirrors the man/nature binary, as entire regions and populations are treated as resources to be extracted and controlled. The forced imposition of industrial agriculture, monoculture plantations, and extractivist industries has not only destroyed ecosystems but also displaced Indigenous and peasant communities, disproportionately affecting women who rely on local biodiversity for food.

Ecofeminism's criticism of dualism also extends to the rational/emotional divide, which has historically devalued alternative forms of knowledge, such as Indigenous ecological wisdom, storytelling, and spiritual connections to the land.

Ecofeminists challenge the Enlightenment emphasis on cold, detached rationality, advocating instead for an embodied, relational, and situated knowledge that recognizes emotions, intuition, and lived experiences as valuable ways of understanding the world. This shift moves away from the idea of human superiority over nature and towards a more reciprocal, respectful, and sustainable approach to environmental ethics.

By deconstructing dualistic hierarchies, ecofeminism opens up new ways of thinking about social and ecological justice. Instead of seeing nature as an object to be dominated, it encourages an ethic of care, reciprocity, and interdependence. Instead of reinforcing gender binaries, it promotes fluid and intersectional understandings of identity that go beyond rigid classifications. In this way, ecofeminism not only critiques existing structures but also offers a transformative vision for a more just and sustainable world—one that recognizes the deep interconnectedness between human and non-human life.

3. Critique of Capitalism and Development Models

Ecofeminism offers a fundamental critique of capitalism and dominant development models, arguing that they are inherently exploitative towards both women and nature. According to ecofeminists, capitalism thrives on a system of extraction and commodification, treating natural resources as limitless and women's labour as invisible. This perspective aligns with feminist criticism of unpaid care work and environmental critiques of industrial expansion, emphasising how capitalist economies devalue both ecological sustainability and gender equity in pursuit of profit and growth.

One of the key ecofeminist critiques of capitalism is its dual exploitation of nature and women. Capitalist economies rely on the

extraction of natural resources for production while also depending on the unpaid or underpaid labor of women, particularly in caregiving and subsistence farming. Maria Mies and Vandana Shiva argue that capitalism is built upon colonial and patriarchal structures that externalize environmental and reproductive costs. For example, large-scale industrial agriculture—often promoted as "modernization"—displaces traditional, women-led farming systems, replacing them with profit-driven monocultures that degrade soil health and biodiversity. These changes not only harm the environment but also disempower women, who are often the primary food producers in many rural societies.

Ecofeminists also criticisesdevelopment models that prioritize economic growth over ecological and social well-being. The dominant Western model of development, based on industrialization, urbanization, and free-market expansion, has been imposed on the Global South through institutions like the International Monetary Fund (IMF) and the World Bank. These development policies, including Structural Adjustment Programs (SAPs), have led to the privatization of natural resources, displacement of Indigenous and rural communities, and increased environmental destruction. Women, particularly in impoverished regions, bear the brunt of these policies as they lose access to land, water, and traditional means of subsistence.

One of the most significant ecofeminist criticism of capitalism is its reduction of nature and human labor to mere economic inputs. Development projects often ignore the ecological knowledge and practices of women, treating them as obstacles to progress rather than valuable contributors to sustainable living. Vandana Shiva's work on seed sovereignty highlights this problem: industrial agricultural companies have patented seeds and promoted genetically modified crops, stripping local women farmers of their

autonomy over food production. This has led to increased economic dependency, loss of biodiversity, and ecological crises such as soil depletion and water shortages.

Furthermore, ecofeminists reject the notion that "green capitalism"—the idea that market-based solutions such as carbon trading or corporate sustainability initiatives can address environmental issues—is a true solution. They argue that as long as economic growth remains the primary goal, environmental and social injustices will persist. Instead of reforming capitalism, ecofeminists advocate for alternative economic models based on local knowledge, ecological balance, and community-driven development. Concepts such as subsistence economies, eco-socialism, and degrowth align with ecofeminist visions of a world where economic activity supports life rather than exploits it.

By criticising capitalism and mainstream development models, ecofeminism challenges the structural roots of environmental degradation and gender oppression. It calls for a transformation of economic systems, shifting from profit-driven growth to sustainability and care-based economies. Through grassroots movements, cooperative economies, and Indigenous ecological practices, ecofeminists advocate for development models that prioritize both environmental integrity and social justice.

4. Environmental Justice and Grassroots Activism

One of the most significant contributions of ecofeminism is its focus on environmental justice and grassroots activism**,** highlighting how marginalized communities— especially women—are disproportionately affected by environmental destruction and are also at the forefront of resistance movements. Ecofeminists argue that environmental degradation is not just an ecological issue but a deeply social and political one, intertwined with gender, class, race,

and colonial histories. Through grassroots activism, women around the world have led movements to protect land, water, forests, and local livelihoods from exploitative industries and unsustainable development policies.

- **Environmental Justice and the Feminization of Environmental Struggles**

Environmental justice, as an extension of ecofeminist thought, recognizes that the burdens of environmental harm—such as pollution, climate change, and deforestation—are unequally distributed. Poor and marginalized communities, particularly women in the Global South**,** bear the greatest consequences of environmental destruction, despite contributing the least to it. Women, especially those in rural and indigenous communities, are often responsible for securing food, water, and fuel for their families. When these natural resources are depleted due to industrial expansion, mining, deforestation, or climate change, it is women who must travel farther for water, work harder for food security, and face increased health risks due to environmental pollution.

Ecofeminists also criticise how mainstream environmental policies often ignore gendered impacts. Large-scale conservation projects, for example, may result in the displacement of Indigenous and local women, stripping them of access to traditional lands. Similarly, climate adaptation policies that do not take gender into account fail to recognize how women experience environmental crises differently than men, especially in agricultural and subsistence economies. By centering women's lived experiences, ecofeminism broadens the scope of environmental justice to include gender equity, advocating for policies that empower women as active participants in ecological governance rather than passive victims of environmental harm.

- **Grassroots Ecofeminist Activism: Women at the Frontlines**

Grassroots movements are a fundamental aspect of ecofeminism, with women leading resistance efforts against environmental destruction across the world. Many of these movements emphasize community-driven, sustainable alternatives to exploitative capitalist and patriarchal development models. Some of the most well-known ecofeminist grassroots movements include:

1. **The Chipko Movement (India, 1973)** – One of the earliest and most iconic ecofeminist movements, the Chipko (Hug the Trees) Movement saw rural women in Uttarakhand physically embracing trees to prevent deforestation by logging companies. The movement was a powerful statement against both environmental destruction and the exclusion of local communities, particularly women, from decisions affecting their livelihoods.
2. **The Green Belt Movement (Kenya, 1977)** – Founded by Wangari Maathai, this movement mobilized women to plant millions of trees across Kenya to combat deforestation, soil erosion, and desertification. Beyond environmental conservation, the movement was also a fight for women's empowerment, democracy, and social justice, demonstrating how ecological restoration can be a means of political resistance.
3. **Anti-Mining and Anti-Dam Movements** – Across Latin America, Africa, and Asia, women have been at the forefront of struggles against extractive industries such as mining and large dam projects. In countries like Ecuador, Peru, and the Philippines, Indigenous women have played leading roles in opposing mining projects that threaten water sources, biodiversity, and ancestral lands. Their activism is not just

about environmental conservation but also about protecting cultural identities, human rights, and local economies**.**

4. **Ecofeminist Climate Justice Movements** – In recent years, ecofeminists have been key actors in climate justice activism, pushing for policies that recognize how climate change disproportionately affects women and marginalized communities. Groups such as the Women's Earth and Climate Action Network (WECAN) advocate for feminist solutions to climate change, emphasizing the role of Indigenous women's knowledge in crafting sustainable alternatives.

- Ecofeminism as a Transformative Force for Environmental Justice

Ecofeminist grassroots activism challenges the dominant top-down approaches to environmental policy, which are often controlled by male-dominated institutions that prioritize economic growth over ecological and social well-being. Instead, ecofeminism promotesbottom-up, community-led solutions that recognize the expertise of local women, Indigenous peoples, and marginalized groups. This approach aligns with the broader principles of environmental justice, which demand that those most affected by ecological harm have a central voice in shaping solutions.

Furthermore, ecofeminist activism is deeply connected to intersectionality, recognizing that gender oppression is linked to other forms of social injustice, including racism, economic inequality, and neocolonialism. It criticises corporate environmentalism, which often co-opts sustainability rhetoric while continuing exploitative practices, and instead advocates for radical systemic change that prioritizes care economies, regenerative agriculture, and participatory governance.

By linking environmental justice with feminist activism, ecofeminism provides a powerful criticism of mainstream environmental policies while offering alternative, justice-centered solutions**.** Through grassroots movements, women around the world have demonstrated that environmental struggles are not just about protecting nature—they are about reclaiming autonomy, resisting economic and political oppression, and building sustainable futures for their communities. In this way, ecofeminism is not only an academic critique but also a practical, activist-oriented movement that continues to shape environmental and feminist politics globally.

Stop to Consider:

Ecofeminism in the Global South:

Ecofeminism in the Global South is deeply rooted in the lived experiences of women who face the intersectional challenges of environmental degradation, economic exploitation, gender oppression, and colonial legacies. Unlike some Western ecofeminist perspectives that emphasize symbolic or philosophical connections between women and nature, ecofeminism in the Global South is largely activist-driven, intersectional, and anti-colonial**,** focusing on the material realities of women who rely directly on natural resources for their survival and livelihoods. It has already been discussed how scholars like Vandana Shiva, Maria Mies, and Ariel Salleh have highlighted how capitalist and neoliberal development models, often imposed by Western-led institutions, have disproportionately harmed women in the Global South through displacement, loss of land rights, resource privatization, and ecological destruction. Women in rural and Indigenous communities, for example, are primary food producers, seed preservers, and water gatherers, yet large-scale deforestation,

industrial agriculture, and extractive industries have systematically eroded their traditional knowledge systems and economic autonomy. Grassroots ecofeminist movements, such as the Chipko Movement in India, the Green Belt Movement in Kenya, and Indigenous-led resistance against mining and dam projects in Latin America**,** illustrate how women in the Global South have mobilized to defend their environments, reclaim sovereignty over natural resources, and challenge patriarchal and colonial structures. These movements are not only about ecological conservation but also about resisting economic and political systems that exploit both nature and marginalized communities**.** Ecofeminism in the Global South, therefore, serves as both a critique of global capitalism and a call for decolonized, community-centered, and sustainable alternatives that recognize women's leadership in environmental and social justice struggles.

4.5 Criticisms of Ecofeminism

While ecofeminism has made significant contributions to feminist and environmental discourse, it has also faced several criticisms from scholars, activists, and other feminist and ecological movements. These criticisms revolve around concerns regarding essentialism, lack of intersectionality, limited engagement with structural issues, and Western-centric perspectives**.**

1. Essentialism: The Nature-Women Connection

One of the most common criticism of ecofeminism is its tendency toward essentialism**,** meaning it sometimes assumes an inherent or natural connection between women and nature**.** Some early ecofeminist writings suggest that because women have reproductive abilities, caregiving roles, and historical ties to subsistence economies, they have a special, almost spiritual, relationship with

nature. Critics argue that this reinforces traditional gender stereotypes and biological determinism, portraying women as inherently nurturing and men as inherently destructive.Scholars like Maria Mies and Ariel Salleh argue that the link between women and nature should be understood in terms of social and economic structures rather than biological or spiritual connections.Again instead of assuming an innate relationship, some ecofeminists focus on how social roles and power structures shape women's interactions with nature**,** making their struggles against environmental degradation more visible.

2. Lack of Intersectionality

Another criticism is that early ecofeminism was often centered on gender alone**,** without fully addressing how environmental struggles intersect with race, class, colonialism, and Indigenous rights**.** This led some feminists of color and Global South activists to distance themselves from Western ecofeminism**,** arguing that it did not adequately represent their experiences.Writers such as Dorothy Roberts and Bina Agarwal,have pointed out that ecofeminism often focuses on the oppression of women in general, without recognizing how women of different backgrounds experience environmental issues differently**.**Many contemporary ecofeminists now emphasize intersectionality, considering how environmental justice must account for race, class, colonial history, and Indigenous sovereignty**,** particularly in the Global South.

3. Limited Engagement with Capitalism and Political Economy

Some critics argue that eco-socialist and Marxist feminists provide a more robust criticism of capitalism’s role in environmental destruction than ecofeminism does. While many ecofeminists criticisepatriarchal capitalism, they do not always offer a clear structural analysis or alternative economic models.Scholars such as

Nancy Fraser and Silvia Federiciargue that ecofeminism sometimes focuses too much on cultural or symbolic issues rather than material economic structures that drive environmental destruction.Some branches of ecofeminism, particularly those influenced by materialist ecofeminism and decolonial feminism**,** integrate analyses of capitalism and advocate for alternative economic modelssuch assubsistence economies, eco-socialism, and cooperative farming**.**

4. Western-Centric Perspectives

Many Global South feminists and indigenous activists criticises ecofeminism for beingtoo rooted in Western feminist and ecological thought**,** often failing to engage with Indigenous knowledge systems, non-Western spiritual traditions, and community-based resistance movements**.**Vandana Shiva and Bina Agarwal, among others, argue that Western ecofeminism sometimes romanticises Indigenous women's connections to nature without fully understanding the political and economic struggles they face**.** Additionally, some Western ecofeminists uncritically embrace spirituality, which may not align with the experiences of all women.Decolonial ecofeminism and Indigenous ecofeminist movements emphasize community-led solutions**,** land rights**,** andtraditional ecological knowledge**,** moving beyond Western frameworks.

5. Spiritual Ecofeminism vs. Materialist Ecofeminism

Ecofeminism is also divided between spiritual ecofeminists (who emphasize deep ecological connections, goddess traditions, and holistic worldviews) and materialist ecofeminists (who focus on economic, political, and labor struggles).Some materialist ecofeminists argue that spiritual ecofeminism is too idealistic and detached from political realities, failing to offer concrete strategies for addressing environmental and gender injustices.Many

contemporary ecofeminists integrate both perspectives, recognizing the importance of cultural and spiritual traditions while also addressing economic and political power structures.

Despite these criticisms, ecofeminism remains a dynamic and evolving movementthat continues to adapt in response to new challenges. By incorporating intersectionality, decolonial perspectives, and systemic critiques of capitalism and neoliberal development**,** ecofeminism has expanded beyond its earlier limitations. Today, many ecofeminists work within environmental justice movements, Indigenous land rights struggles, and anti-capitalist activism, making it a key force in global environmental and feminist discourse**.**

4.6 Contemporary Relevance of Ecofeminism

Ecofeminism remains highly relevant today as it provides acritical framework for understanding and addressing the interconnected crises of environmental destruction, climate change, gender inequality, and social injustice**.** In a world facingintensified ecological degradation, widening economic inequalities, and persistent gender-based oppression**,** ecofeminism offers boththeoretical insights and practical solutions**s**to create more just and sustainable societies.

1. Climate Change and Gender Justice

One of the most pressing global issues today is climate change, which disproportionately affects marginalized communities, particularly women in the Global South. According to the United Nations, women—especially those in rural and Indigenous communities—are more vulnerable to climate disasters because they rely on natural resources for their livelihoods and are often responsible for securing food, water, and fuel.Ecofeminists argue

that climate solutions must go beyond technological fixes and market-based strategies; they must address structural inequalities**,** ensuring that women and marginalized groups have leadership roles in climate governance. For example, the Women's Earth and Climate Action Network (WECAN)is a contemporary ecofeminist initiative advocating for climate policies that center Indigenous and frontline women leaders in decision-making processes.

2. Environmental Justice and Indigenous Movements

Ecofeminism has become deeply integrated with Indigenous struggles for land rights, water protection, and sovereignty over natural resources**.** Across the world, Indigenous women are leading resistance movements against extractive industries, deforestation, and water privatization**.**Ecofeminism highlights how corporate-driven environmental destruction is inseparable from gender, race, and colonial oppression. Like for instance, the Standing Rock protests (USA, 2016) against the Dakota Access Pipeline were led by Indigenous women defending their land and water from corporate exploitation, embodying ecofeminist principles of community-led resistance and environmental justice**.**

3. Food Sovereignty and Sustainable Agriculture

Industrial agriculture and global agribusiness have devastated local ecosystems and displaced small-scale farmers, many of whom are women**.** Ecofeminists advocate for food sovereignty**,** arguing that women farmers play a key role in maintaining biodiversity, preserving traditional seeds, and practicing sustainable agriculture**.**Ecofeminists challenge the corporate control of agriculture, calling for community-based, regenerative farming practicesthat empower women and protect biodiversity. For example, Vandana Shiva's Navdanya movement in India promotes seed sovereignty, organic farming, and resistance against genetically

modified crops, placing women at the center of sustainable food systems.

4. Critique of Green Capitalism and Neoliberal Solutions

While mainstream environmental movements often focus on market-based solutions**,** such as carbon trading and corporate sustainability initiatives, ecofeminists criticises these approaches as insufficient.Ecofeminists argue that "green capitalism" continues to exploit both nature and marginalized communities, reinforcing global inequalities. Instead, they call for alternative economic models based on care, cooperation, and degrowth**.** For example, The Buen Vivir movement in Latin America, inspired by Indigenous worldviews, aligns with ecofeminism by promoting community well-being over profit-driven development**.**

5. Digital and Urban Ecofeminism

Ecofeminism has also expanded into urban environmentalism and digital activism**,** addressing issues such as toxic pollution, sustainable cities, and climate justice in urban spaces**.**Ecofeminists advocate for green public spaces, accessible clean energy, and participatory urban planningthat considers gender and environmental justice**.**Feminist climate activists like Greta Thunbergand Vanessa Nakate use social media to mobilize global action, demonstrating how digital activism can be a powerful tool for eco-social transformation.

Ecofeminism remains a vital framework for addressing contemporary environmental and social crises**.** By connecting climate justice, Indigenous rights, gender equality, and economic alternatives, ecofeminism challenges capitalist and patriarchal systems that exploit both nature and marginalized communities. As environmental challenges intensify, ecofeminist ideas continue to inspire grassroots movements, policy changes, and alternative

economic modelsaimed at creating a more sustainable and just world.

Check Your Progress:

1. Who wrote the book *Le Féminismeou la Mort* (*Feminism or Death*)?
2. Discuss ecofeminism as critique of dualism.
3. Write the criticisms levelled by ecofeminism against capitalism and development models.
4. What is Chipko Movement?
5. Who founded the Green Belt Movement?
6. Examine the criticisms against the concept of ecofeminism.
7. Differentiate between spiritual ecofeminism vs materialist ecofeminism.
8. What is Navdanya movement**?**
9. Write a note on contemporary relevance of ecofeminism.
10. What is WECAN?

Self Asking Question

Assess the role of women farmers in maintaining biodiversity.

……

……

……

4.7 Summing Up

After reading this unit now you are in a position to understand that ecofeminism provides a crucial lens for understanding the interconnectedness of social and environmental justice. By challenging systems of domination and advocating for holistic,

sustainable solutions, ecofeminism continues to shape feminist and environmental activism worldwide. As the global climate crisis intensifies, ecofeminist perspectives offer valuable insights into how equitable and sustainable futures can be envisioned and achieved.

4.8 References and Suggested Readings

Shiva, V., &Mies, M. (2014). *Ecofeminism*. Bloomsbury Publishing.

Plumwood, V. (1986). Ecofeminism: An overview and discussion of positions and arguments. *Australasian Journal of Philosophy*, *64*(sup1), 120-138.

Buckingham, S. (2004). Ecofeminism in the twenty-first century. *Geographical journal*, *170*(2), 146-154.

Puleo, A. H. (2017). What is ecofeminism. *Quaderns de la Mediterrània*, *25*, 27-34.

---×---

UNIT- 5

ECO- SOCIALISM

Unit Structure:

5.1 Introduction

5.2 Objectives

5.3 The Origins of Eco-Socialism

5.4 Eco-Socialism as a Critique of Capitalism and Traditional Socialism

5.4.1 Critique of Capitalism: The Root of Environmental Destruction

5.4.2 Critique of Traditional Socialism: Industrialism and Neglect of Ecology

5.5 Eco-Socialism: A New Synthesis for Sustainability and Justice

5.6 Core Principles of Eco-Socialism

5.7 Eco-Socialism in practice

5.8 Challenges and Criticisms of Eco-Socialism

5.9 Summing Up

5.10 References and Suggested Readings

5.1 Introduction

Eco-socialism is a political and economic philosophy that merges socialist principles with ecological sustainability. It criticises both capitalism and traditional socialism for their inability to address environmental degradation while advocating for a system that prioritizes both social justice and ecological balance. This unit will familiarise you with the foundations, key arguments, and practical applications of eco-socialism, illustrating its relevance in the modern era of climate crises and growing inequality.

5.2 Objectives

After reading this unit you will be able to

- *know* the origin of the idea of eco socialism;
- *understand* Eco-Socialism as a Critique of Capitalism and Traditional Socialism;
- *discuss* the core principles of eco socialism;
- *analyse* the Practical Applications of Eco-Socialism;
- *examine* the challenges and criticisms of eco socialism.

5.3 The Origins of Eco-Socialism

Eco-socialism is a political and theoretical movement that merges ecological concerns with socialist principles. It emerged as a response to both the environmental crises brought on by industrial capitalism and the perceived ecological shortcomings of traditional socialist movements. Eco-socialists argue that capitalism, with its inherent drive for profit and endless economic growth, is fundamentally incompatible with environmental sustainability. They also criticise mainstream socialist traditions, which historically prioritized industrialization and economic growth, often at the expense of environmental considerations.

The intellectual roots of eco-socialism can be traced back to the 19th century, particularly in the works of Karl Marx and Friedrich Engels. Although Marx and Engels did not develop an explicit ecological theory, their analyses of capitalism contained key insights that later eco-socialists built upon. Marx, for instance, spoke about the "metabolic rift," describing how capitalist production disrupts the natural cycles of nutrient exchange between human societies and the environment. Engels, in Dialectics of Nature, also recognized

the limits of human control over nature, cautioning against an exploitative relationship with the natural world. These ideas provided an early theoretical foundation for eco-socialism, even though they were not fully developed in their time.

During the 20th century, various socialist and environmentalist movements began converging, particularly as industrial expansion led to visible environmental degradation. In the mid-20th century, some Marxist thinkers, particularly from the Frankfurt School, began incorporating ecological concerns into their critiques of capitalism. Herbert Marcuse, for instance, warned against the consumerist culture of advanced industrial societies, arguing that it led to both social alienation and environmental destruction. Simultaneously, radical environmental movements in the 1960s and 1970s, influenced by the rise of ecological science and anti-capitalist sentiment, started embracing socialist ideas. This was particularly evident in the rise of the Green movement in Europe, which included eco-socialist factions that sought to go beyond mainstream environmentalism's focus on regulation and conservation.

By the late 20th century, eco-socialism had emerged as a distinct political philosophy, championed by thinkers like André Gorz, Barry Commoner, and later Joel Kovel. Gorz, a French social philosopher, criticised both capitalism and traditional socialism for failing to address environmental sustainability. Barry Commoner, an American environmental scientist, argued that capitalism's reliance on fossil fuels and industrial chemicals was the root cause of environmental crises. Joel Kovel, one of the most influential eco-socialist theorists, emphasized the need to replace capitalism with a more cooperative, ecologically sustainable system. These thinkers helped to shape eco-socialism as a movement that not only opposed capitalist exploitation of nature but also sought to create a new

socio-economic system based on ecological balance, social justice, and participatory democracy.

In recent decades, eco-socialism has gained grip amid worsening climate change, biodiversity loss, and environmental injustice. Many activists, particularly in the Global South, see eco-socialism as a framework that links environmental sustainability with struggles for indigenous rights, land reform, and anti-imperialism. Movements such as Latin America's "Buen Vivir" philosophy and eco-socialist elements within the Green New Deal discussions demonstrate how eco-socialism continues to evolve in response to contemporary challenges. As the climate crisis intensifies, eco-socialism remains a vital and growing movement advocating for systemic change to create a just and sustainable future.

5.4 Eco-Socialism as a Critique of Capitalism and Traditional Socialism

Eco-socialism is a radical critique of both capitalism and traditional socialist movements, arguing that neither system, as historically practiced, has adequately addressed the environmental crisis. It highlights capitalism's fundamental incompatibility with ecological sustainability while also criticising traditional socialist approaches for their historical neglect of environmental concerns. Eco-socialism seeks to synthesize ecological and socialist perspectives to create a sustainable and just society.

5.4.1 Critique of Capitalism: The Root of Environmental Destruction

Eco-socialists argue that capitalism is inherently destructive to the environment due to its core reliance on profit maximization, market competition, and endless economic growth. Under capitalism, natural resources are treated as commodities, valued only for their

ability to generate profit rather than for their intrinsic ecological importance. This leads to over-extraction of raw materials, deforestation, pollution, and climate change, as corporations prioritize short-term profits over long-term sustainability.

One of the most significant eco-socialist criticism of capitalism is its reliance on fossil fuels and industrial agriculture, which are primary drivers of climate change. Capitalism's dependence on non-renewable energy sources, such as coal, oil, and natural gas, results in massive greenhouse gas emissions, accelerating global warming. Industrial agriculture, driven by corporate agribusiness, depletes soil nutrients, pollutes water systems with chemical fertilizers and pesticides, and contributes to biodiversity loss.

Eco-socialists also emphasize the issue of environmental injustice under capitalism. They argue that environmental degradation disproportionately affects marginalized communities, particularly in the Global South and among working-class populations. Wealthy corporations and nations often outsource pollution and environmental destruction to poorer regions, where careless environmental regulations and economic dependence make resistance difficult. This creates what eco-socialist theorists call "ecological imperialism," where capitalist economies exploit both human labor and natural resources in less developed regions, deepening global inequalities.

Another major flaw of capitalism, according to eco-socialists, is its emphasis on consumerism. Capitalist economies rely on perpetual consumption to sustain growth, which leads to excessive waste, planned obsolescence, and unsustainable levels of resource extraction. The culture of consumerism fosters an illusion of unlimited resources, encouraging individuals to prioritize material wealth over ecological balance. Eco-socialists argue that addressing the environmental crisis requires a shift away from a profit-driven,

consumerist society toward a system that values sustainability and collective well-being.

5.4.2 Critique of Traditional Socialism: Industrialism and Neglect of Ecology

While eco-socialists align with socialism in their opposition to capitalism, they also criticises traditional socialist movements for their historical neglect of ecological concerns. Many 20th-century socialist states, such as the Soviet Union and Maoist China, pursued rapid industrialization as a means of achieving economic and social progress. In doing so, they often replicated the environmental destruction seen under capitalism, prioritizing heavy industry, large-scale infrastructure projects, and resource extraction without considering long-term ecological consequences.

One of the most well-known examples of environmental degradation under socialism was the Soviet Union's approach to industrial agriculture and resource management. The massive irrigation projects of the Soviet era, such as those that diverted water from the Aral Sea, led to environmental catastrophes, including desertification, water shortages, and biodiversity loss. Similarly, rapid industrialization efforts resulted in severe pollution, deforestation, and the destruction of natural habitats, showing that state-controlled economies were not inherently more ecologically sustainable than capitalist ones.

Eco-socialists also criticised traditional socialist movements for their anthropocentric (human-centered) worldview. Many socialist ideologies have historically focused on the struggle between the working class and capitalist elites while ignoring the broader ecological systems that sustain life. While Marx and Engels provided some early insights into environmental concerns—such as

Marx's concept of the "metabolic rift" (the disruption of natural cycles by capitalist production)—many later socialist movements failed to integrate these ideas into their policies and economic models.

Another issue eco-socialists identify in traditional socialism is its tendency toward centralized planning and bureaucratic decision-making, which often ignored local ecological knowledge and community-based sustainability practices. Large-scale, top-down industrial projects, whether under capitalism or socialism, tend to prioritize economic output over ecological health. Eco-socialism, in contrast, promotes decentralized, community-driven approaches to economic planning, where environmental considerations are integrated into decision-making at all levels.

5.5 Eco-Socialism: A New Synthesis for Sustainability and Justice

Eco-socialism offers a distinct alternative by integrating socialist principles of economic democracy, social justice, and collective ownership with ecological sustainability. It envisions an economic system that is not driven by profit but rather by the needs of people and the planet. Key features of an eco-socialist society include:

- **Democratic Control of Resources –** Eco-socialists advocate for the collective and democratic management of natural resources, ensuring that environmental policies prioritize ecological health and social well-being over corporate profits.
- **Sustainable Production and Consumption –** Unlike capitalism's focus on perpetual economic growth, eco-socialism promotes economic systems based on ecological limits. This includes reducing waste, transitioning to

renewable energy, and adopting sustainable agricultural practices.

- **Decentralization and Localized Economies –** Eco-socialists support decentralized economic planning, where communities have greater control over resource management and decision-making. This approach values local ecological knowledge and promotes environmental justice.
- **Recognition of Indigenous and Communal Land Practices –** Many eco-socialists draw inspiration from indigenous traditions and communal land stewardship, recognizing that sustainable practices have existed for centuries outside both capitalism and traditional socialism.
- **Abolition of Consumerism and Work-Centered Economies –** Eco-socialists argue for a cultural shift away from excessive consumption and toward a society where well-being is not tied to material wealth. This includes reducing work hours, promoting leisure, and valuing ecological restoration.

So we have learnt that eco-socialism criticises capitalism for its inherent ecological destruction and social injustices, while also challenging traditional socialist models for their neglect of environmental sustainability. By merging ecological consciousness with socialist ideals, eco-socialism proposes a new framework for achieving both social and environmental justice. As climate change and ecological crises intensify, eco-socialism continues to gain relevance as a transformative alternative to both capitalism and past socialist models, advocating for a world where humans and nature coexist in harmony.

5.6 Core Principles of Eco-Socialism

Eco-socialism is a political and economic philosophy that integrates ecological sustainability with socialist principles. It argues that the root cause of environmental destruction is capitalism's endless pursuit of profit and that a just, sustainable future can only be achieved through a socialist transformation of society. Below are the core principles of eco-socialism:

1. The Incompatibility of Capitalism and Ecology

Eco-socialism is based on the belief that capitalism, with its need for constant economic growth, is fundamentally incompatible with environmental sustainability. Capitalism prioritizes profit over ecological balance, leading to deforestation, pollution, resource depletion, and climate change. The system's emphasis on consumerism and planned obsolescence further accelerates environmental degradation. Eco-socialists argue that the only way to address the ecological crisis is to move beyond capitalism and establish an economic system that prioritizes environmental and social well-being over corporate profits.

2. A Socialist Alternative: Collective Ownership and Economic Democracy

Eco-socialists advocate for collective ownership of key industries, especially those related to energy, transportation, and agriculture. Instead of private corporations controlling natural resources for profit, eco-socialism promotes democratic control of the economy, where production and consumption are guided by environmental and social needs rather than market forces. This means transitioning from a profit-driven economy to one that prioritizes sustainable livelihoods, ecological balance, and community well-being.

Economic democracy is central to eco-socialism. This means that decisions about production, resource use, and environmental

policies should be made collectively by workers, communities, and ecological experts rather than by a small elite. Participatory decision-making ensures that economic policies align with both human and environmental needs.

3. Sustainable Production and Consumption

Unlike capitalism, which depends on continuous economic growth and overproduction, eco-socialism promotes an economy based on ecological limits. Sustainable production means moving away from fossil fuels, large-scale industrial agriculture, and extractive industries toward environmentally friendly alternatives such as renewable energy, agroecology, and circular economies.

Eco-socialists also challenge the capitalist culture of consumerism, which encourages people to buy more goods than they need, leading to excessive waste and resource depletion. Instead, eco-socialism promotes a culture of sufficiency, where quality of life is improved not through material excess but through equitable distribution of resources, shorter work hours, and a focus on human well-being.

4. Decentralization and Localized Economies

Eco-socialists advocate for decentralized economic structures where local communities have control over their resources and decision-making processes. Unlike both capitalist multinational corporations and bureaucratic state socialism, eco-socialism values local ecological knowledge and promotes community-led sustainability initiatives.Localized economies reduce the environmental impact of long-distance trade and encourage self-sufficient, small-scale production that aligns with local ecosystems. This means prioritizing local food systems, renewable energy projects, and cooperative business models that serve community needs rather than corporate profits.

5. The Protection of Biodiversity and Ecosystems

Eco-socialism emphasizes the importance of preserving biodiversity and maintaining the health of ecosystems. It challenges the idea that nature exists solely for human use and instead promotes an ecological worldview that recognizes the intrinsic value of all living beings.This principle leads to policies that prioritize reforestation, conservation of endangered species, restoration of degraded ecosystems, and the protection of water sources. Eco-socialists also advocate for regenerative agriculture and permaculture as sustainable alternatives to industrial farming.

6. The Role of Indigenous Knowledge and Land Stewardship

Eco-socialism recognizes the historical and ongoing contributions of Indigenous peoples in practicing sustainable land management. Many Indigenous communities have lived in harmony with nature for centuries, maintaining ecological balance through traditional practices such as communal land ownership, rotational farming, and forest conservation.

Eco-socialists argue that Indigenous sovereignty and land rights must be protected, as Indigenous peoples often face displacement by capitalist projects such as mining, deforestation, and large-scale agribusiness. By integrating Indigenous ecological wisdom with socialist principles, eco-socialism promotes a holistic approach to sustainability.

7. Environmental Justice and Social Equity

Eco-socialism highlights the deep connection between environmental issues and social inequality. It argues that marginalized communities, especially in the Global South, bear the brunt of environmental destruction caused by capitalist industries.For example, pollution, deforestation, and climate change disproportionately affect poor communities and Indigenous

groupswhile wealthy corporations and nations continue to exploit natural resources without facing the consequences. Eco-socialism calls for environmental justice, ensuring that all people—regardless of race, class, or nationality—have equal access to clean air, water, and sustainable livelihoods.This principle also extends to labor rights, as eco-socialists advocate for just transitions for workers in polluting industries. Instead of simply shutting down coal mines or oil refineries, eco-socialism calls for retraining programs and investments in green jobs to ensure that workers are not left behind in the shift to a sustainable economy.

8. A Global Perspective: Anti-Imperialism and International Solidarity

Eco-socialism is inherently internationalist, recognizing that environmental problems transcend national borders. Climate change, deforestation, and pollution are global crises that require international cooperation and solidarity. Eco-socialists criticise "ecological imperialism," where rich nations exploit the natural resources of poorer countries while shifting the environmental burden onto them. They call for debt cancellation, fair trade policies, and an end to exploitative practices by multinational corporations. Instead of extractive global capitalism, eco-socialists advocate for a new international economic order based on ecological sustainability and equitable resource distribution.

9. A Just Transition to a Post-Capitalist Society

Eco-socialism envisions a transition from the current capitalist system to a sustainable, socialist society. This transition must be just and democratic, ensuring that workers, marginalized communities, and the poor are not left behind.Some key policies for a just transition include:

- Nationalizing fossil fuel industries and gradually replacing them with renewable energy.
- Investing in public transportation to reduce car dependency.
- Promoting worker cooperatives and community-owned enterprises.
- Redistributing wealth to ensure that sustainability efforts do not disproportionately affect the poor.
- Shortening the workweek and promoting a better work-life balance to reduce unnecessary production and consumption.

Rather than relying on market-based solutions like carbon trading, which allow corporations to continue polluting, eco-socialists advocate for systemic changes that restructure economic and political power.

10. Holistic Well-Being Over Economic Growth

One of the most revolutionary principles of eco-socialism is its rejection of the capitalist obsession with economic growth. Instead of measuring progress by GDP (Gross Domestic Product), which only reflects economic output, eco-socialists propose alternative measures such as:

- **Genuine Progress Indicator (GPI):** which includes environmental and social factors.
- **Happiness Index:** which measures quality of life beyond material wealth.
- **Ecological Footprint:** which assesses the sustainability of human activities.

Eco-socialists believe that a good life does not depend on continuous material accumulation but on strong communities, meaningful work, environmental harmony, and personal fulfillment.

So you have learnt that eco-socialism is a transformative ideology that critiques both capitalism and traditional socialism while offering a vision for a sustainable, just, and democratic society. It challenges the destructive logic of profit-driven economies and proposes a world where economic activity is guided by ecological balance, collective well-being, and social justice.By emphasizing democratic control of resources, sustainable production and consumption, decentralized economies, and environmental justice, eco-socialism presents a powerful alternative to both neoliberal capitalism and state-driven industrial socialism. As the climate crisis intensifies, eco-socialism provides a pathway toward a world where humans and nature coexist in harmony, ensuring that future generations inherit a livable planet.

5.7 Eco socialism in Practice

Eco-socialism is not just a theoretical criticism of capitalism and traditional socialism; it also offers concrete solutions and alternative systems for achieving environmental sustainability and social justice. These applications focus on restructuring economies, fostering community-based governance, and integrating ecological principles into all aspects of society. Below are some key practical applications of eco-socialism:

1. Public and Collective Ownership of Natural Resources

One of the core practical applications of eco-socialism is the collective ownership and democratic control of natural resources such as land, water, forests, and energy. Under capitalism, these resources are often controlled by private corporations, leading to overexploitation and environmental degradation. Eco-socialists advocate for:

- **Nationalization of key industries** like fossil fuels, mining, and agribusiness to prevent profit-driven ecological destruction.
- **Community-led resource management** where local communities have direct control over land, water, and forests to ensure sustainable use.
- **Abolition of private land speculation** to prevent deforestation, land grabbing, and excessive urban sprawl.

This approach ensures that environmental policies are guided by ecological needs and public well-being rather than corporate profits.

2. Transition to Renewable Energy through Public Investment

Eco-socialists support a large-scale transition from fossil fuels to publicly owned renewable energy systems such as solar, wind, and hydroelectric power. Unlike capitalist greenwashing efforts that rely on market mechanisms, eco-socialists propose:

- **Public investment in renewable energy infrastructure**, ensuring it serves social needs rather than private profit.
- **Decentralized, community-controlled energy grids**, where local cooperatives generate and distribute energy democratically.
- **Guaranteed green jobs** for workers transitioning from fossil fuel industries, ensuring a just transition that does not leave communities economically vulnerable.

Countries like Denmark and regions such as Boulder, Colorado, have experimented with community-owned renewable energy projects that align with eco-socialist principles.

3. Democratic and Sustainable Economic Planning

Democratic and sustainable economic planning is a core application of eco-socialism, aiming to replace profit-driven, exploitative

capitalist economies with ecologically responsible and socially just alternatives. This approach prioritizes collective decision-making, ensuring that economic policies reflect the needs of people and the planet rather than corporate interests. By integrating ecological sustainability into economic planning, eco-socialism seeks to end environmental degradation, promote renewable energy, and reduce resource overconsumption. Additionally, democratic control over production and distribution allows communities to participate in shaping their own economies, fostering social equity and resilience. In contrast to market-driven solutions that often exacerbate inequality and ecological destruction, democratic and sustainable planning offers a transformative pathway toward an economy that values both human well-being and environmental balance.

4. Agroecology and Food Sovereignty

Agroecology and food sovereignty are key applications of eco-socialism, offering an alternative to industrial agriculture that prioritizes ecological sustainability, social justice, and community empowerment. Agroecology promotes farming practices that work in harmony with nature, such as crop diversification, soil regeneration, and organic cultivation, reducing dependence on harmful chemicals and fossil-fuel-based inputs. Food sovereignty, meanwhile, emphasizes the right of communities to control their own food systems rather than being subjected to the dominance of agribusiness corporations. Together, these principles challenge the capitalist model of agriculture that prioritizes profit over people and ecosystems. By fostering decentralized, democratically controlled food production, eco-socialism seeks to create resilient food systems that ensure equitable access to nutritious food, protect biodiversity, and empower small-scale farmers and Indigenous communities. This vision redefines agriculture as a means to sustain both people

and the planet, rather than exploit them for short-term economic gain.

Stop to Consider

La VíaCampesina:

La VíaCampesina is an international grassroots movement that unites millions of small-scale farmers, peasants, Indigenous peoples, farmworkers, and rural communities in the struggle for food sovereignty, social justice, and agroecology. Founded in 1993, it opposes the industrial agribusiness model that prioritizes corporate profit over farmers' rights and ecological sustainability. Instead, La VíaCampesina advocates for localized, community-led food systems, fair land distribution, and policies that protect small farmers from neoliberal trade policies and land grabs. It has played a crucial role in shaping global discussions on food justice, influencing institutions like the UN to recognize peasants' rights. By centering peasant-led agriculture, traditional knowledge, and collective resistance, La Vía Campesina represents a powerful force in the global fight against capitalism, colonialism, and environmental destruction.

5. Just Transition and Green Job Creation

Just Transition and green job creation are central applications of eco-socialism, aiming to shift from extractive, fossil-fuel-dependent economies to equitable and sustainable systems without leaving workers behind. A Just Transition ensures that communities reliant on polluting industries are supported through retraining, social protections, and democratic economic planning as they move toward regenerative and clean industries. Green job creation focuses on

expanding employment in sectors such as renewable energy, sustainable agriculture, public transportation, and ecological restoration, prioritizing worker rights, fair wages, and collective ownership. Unlike market-driven "green growth" strategies that often replicate capitalist inequalities, an eco-socialist Just Transition demands systemic change—replacing profit-oriented models with cooperative, worker-led alternatives that center social justice and environmental sustainability. This approach not only addresses the climate crisis but also empowers workers and communities, ensuring that the shift to a green economy is both democratic and transformative.

6. Expansion of Public Transportation and Car-Free Cities

The expansion of public transportation and the development of car-free cities are key applications of eco-socialism, aiming to reduce carbon emissions, reclaim urban spaces for people, and promote social equity. Unlike car-dependent urban planning, which prioritizes private profit and fossil fuel consumption, eco-socialist transportation policies emphasize publicly owned, affordable, and accessible transit systems. Investing in high-quality public transportation—such as buses, trains, and cycling infrastructure—not only cuts greenhouse gas emissions but also ensures mobility for all, regardless of income. Car-free cities, designed around walkability and communal spaces, challenge capitalist urban development that prioritizes corporate interests over public well-being. By reimagining transportation as a public good rather than a private commodity, eco-socialism fosters livable, sustainable, and democratic cities where environmental health and social justice go hand in hand.

7. Environmental Justice and Indigenous Land Rights

Environmental justice and Indigenous land rights are fundamental applications of eco-socialism, addressing the deep-rooted inequalities of capitalism and colonialism that drive environmental destruction. Eco-socialism recognizes that marginalized communities—particularly Indigenous peoples—are disproportionately affected by pollution, resource extraction, and climate change, despite contributing the least to these crises. By centering Indigenous land rights, eco-socialism challenges corporate land grabs, deforestation, and extractivist industries, advocating instead for community-led stewardship of natural resources. Indigenous knowledge and practices offer sustainable models for land management that align with ecological balance and collective well-being. Environmental justice within an eco-socialist framework goes beyond reformist policies, demanding systemic change to dismantle the capitalist structures that exploit both people and nature. By securing land sovereignty and ensuring that those most impacted by environmental harm have decision-making power, eco-socialism envisions a world where ecological sustainability and social justice are inseparable.

8. Degrowth and Post-Capitalist Lifestyles

Degrowth and post-capitalist lifestyles are essential applications of eco-socialism, challenging the capitalist obsession with infinite economic expansion at the expense of people and the planet. Degrowth advocates for scaling down resource consumption, redistributing wealth, and prioritizing well-being over profit, rejecting the idea that progress is measured by GDP growth. Eco-socialism integrates degrowth by promoting cooperative economies, shorter workweeks, and localized, self-sufficient communities that reduce dependence on exploitative global markets. Post-capitalist lifestyles emphasize communal living, shared resources, and

regenerative practices that move beyond consumerism and wage labor as the basis of existence. Rather than enforcing austerity, eco-socialist degrowth envisions a society where people thrive through meaningful work, deep social connections, and a restored relationship with nature. By embracing sufficiency, collective care, and ecological responsibility, this approach lays the foundation for a just and sustainable world beyond capitalism.

9. International Cooperation and Anti-Imperialism

International cooperation and anti-imperialism are crucial applications of eco-socialism, recognizing that the climate crisis and environmental destruction are rooted in global capitalist exploitation and colonial legacies. Eco-socialism challenges the neo-colonial structures that allow wealthy nations and multinational corporations to extract resources, pollute, and impose austerity on the Global South while claiming to lead "green transitions." Instead, it calls for solidarity-based internationalism, where nations collaborate to redistribute wealth, transfer clean technologies, and support sustainable development without debt traps or corporate control. Anti-imperialist eco-socialism rejects militarism, extractivism, and exploitative trade policies, advocating instead for democratic global governance that prioritizes ecological balance and social justice over profit and domination. By dismantling the systems that enable environmental and economic injustices on a global scale, eco-socialism envisions a world where sustainability is built on cooperation, reparations, and the collective right to self-determination.

10. Grassroots Movements and Political Mobilization

Grassroots movements and political mobilization are essential applications of eco-socialism, driving systemic change from the bottom up by challenging capitalist structures that exploit people

and the planet. Unlike top-down policy reforms that often maintain the status quo, eco-socialist organizing prioritizes mass participation, direct democracy, and collective action to build sustainable and just alternatives. Movements led by workers, Indigenous communities, peasants, and climate activists play a central role in resisting corporate control, advocating for public ownership of resources, and demanding policies that center ecological and social well-being. Political mobilization through protests, strikes, and participatory decision-making disrupts neoliberal governance and creates pathways for radical transformation. By uniting struggles against environmental destruction, labor exploitation, and social inequality, eco-socialist grassroots movements push for a world where power is decentralized, economies are cooperative, and sustainability is rooted in justice and collective empowerment.

So it can be summarised that eco-socialism is not just an abstract ideology; it has concrete, practical applications that can be implemented at local, national, and global levels. By integrating public ownership, democratic economic planning, renewable energy, sustainable agriculture, environmental justice, and grassroots activism, eco-socialism provides a realistic path toward a just and sustainable future**.**

While challenges remain, real-world examples of eco-socialist policies—such as community-owned energy, agroecology, and just transition programs—demonstrate that an alternative to capitalist environmental destruction is both possible and necessary**.**

5.8 Challenges and Criticisms of Eco-Socialism

Eco-socialism presents a radical critique of capitalism and traditional socialism while advocating for a sustainable and just

society. However, like any socio-political movement, it faces significant challenges and criticisms. These range from practical difficulties in implementation to ideological disagreements and resistance from existing power structures. Below are some of the major challenges and criticisms of eco-socialism.

1. Resistance from Capitalist and Corporate Interests

One of the greatest challenges to eco-socialism is the entrenched power of capitalist economies and multinational corporations. The global economic system is deeply dependent on profit-driven industries such as fossil fuels, industrial agriculture, and mass production. These industries have vast financial resources and political influence, allowing them to resist systemic change through lobbying, political donations, and media control.

Efforts to transition away from capitalism often face strong opposition, as corporations argue that socialist policies would lead to economic collapse, job losses, and decreased global competitiveness. Additionally, many governments are closely tied to corporate interests, making systemic transformation difficult without mass political mobilization.

2. Feasibility of Economic Transition

The feasibility of economic transition poses a significant challenge for eco-socialism, as shifting from a capitalist, profit-driven system to a democratically planned, sustainable economy requires overcoming deep structural and political barriers. Capitalist economies are entrenched in global supply chains, financial markets, and state policies that prioritize growth and private accumulation, making systemic transformation difficult. Additionally, powerful corporate and political elites resist change, using media influence, lobbying, and state repression to maintain the status quo. The transition also requires massive investments in

renewable energy, public infrastructure, and social programs, which demand careful economic planning to ensure stability and equity. Further, in a world where many economies are dependent on extractive industries, finding alternative pathways for employment and development remains a challenge. Despite these obstacles, eco-socialism argues that a planned transition is not only necessary but feasible through grassroots mobilization, democratic control of resources, and international cooperation. Overcoming these barriers requires strong political will, broad-based movements, and policies that prioritize both ecological sustainability and economic justice.

3. Bureaucratic and Centralization Concerns

One major challenge of eco-socialism is the tension between bureaucratic control and centralization in managing environmental and economic policies. Since eco-socialism advocates for collective ownership and democratic planning to replace capitalist exploitation, there is a risk that centralized decision-making could lead to inefficiencies, rigid bureaucracy, and a lack of grassroots participation. Over-reliance on state institutions to regulate production and resource distribution may stifle local initiatives and innovation, creating a top-heavy system prone to authoritarian tendencies. Additionally, centralization could alienate communities from decision-making processes, contradicting the eco-socialist vision of decentralized, participatory democracy. Balancing effective environmental governance with democratic inclusivity remains a crucial challenge for eco-socialist movements.

4. Conflict with Traditional Socialist and Leftist Ideologies

A significant challenge to eco-socialism is its conflict with traditional socialist and leftist ideologies, which have historically prioritized industrial development and economic growth as means of achieving social justice. Many classical socialist and Marxist

movements emphasized the expansion of productive forces to meet human needs, often overlooking ecological limits. Eco-socialism, in contrast, critiques the traditional socialist focus on heavy industry and advocates for sustainable, decentralized economies that prioritize ecological balance over unchecked growth. This shift has led to tensions within leftist circles, as some view eco-socialism's emphasis on environmental limits as a concession to capitalist austerity narratives. Bridging the gap between these perspectives remains crucial for building a unified movement that integrates social justice with ecological sustainability.

5. Public Acceptance and Lifestyle Changes

Public acceptance and the necessity for lifestyle changes pose a significant challenge to eco-socialism, as it requires a fundamental shift in consumption patterns, work structures, and everyday habits. Many people, especially in consumer-driven societies, are accustomed to the conveniences and material benefits of capitalist economies, making the transition to a sustainable, collective system difficult to embrace. Eco-socialism promotes reduced consumption, local production, and communal living, which may be perceived as restrictive or unrealistic by those who equate progress with economic growth and personal wealth. Additionally, skepticism toward systemic change, fears of government overreach, and resistance from industries benefiting from the status quo further hinder public support. Overcoming these obstacles requires widespread education, cultural transformation, and policies that make sustainable living both appealing and accessible.

6. Global Coordination and Geopolitical Tensions

Eco-socialism requires global cooperation to address environmental crises, but existing geopolitical tensions make such coordination difficult.Wealthy nations have historically exploited poorer

countries for resources, and some developing nations argue that they should not have to limit their growth while richer nations continue consuming disproportionately.Implementing eco-socialism in one country or region may be difficult if global trade and investment systems remain capitalist. Countries that transition to eco-socialism might face economic sanctions, trade barriers, or financial isolation. Moreover, many governments are resistant to socialist policies, and eco-socialist movements often face repression from state authorities.Without strong international solidarity, achieving systemic global change remains a significant challenge.

7. Technological and Energy Limitations

While eco-socialism promotes renewable energy and sustainable technologies, some critics argue that existing green technologies are not yet advanced enough to support a fully sustainable economy.Solar and wind power depend on weather conditions, requiring large-scale energy storage solutions that are still being developed.The production of renewable energy infrastructure (e.g., solar panels, wind turbines, and batteries) requires mining for rare minerals, which has environmental and ethical concerns.Some experimental eco-socialist communities and cooperatives exist, but they often operate on small scales. Expanding these models to national or global levels presents technological and logistical challenges.Eco-socialists argue that innovation in sustainable technologies and new economic models can address these concerns, but critics remain doubtful about the feasibility of large-scale implementation.

8. Risk of Greenwashing and Co-optation

As environmental concerns gain mainstream attention, capitalist systems have adapted by promoting "green capitalism," which includes market-based solutions like carbon trading, eco-friendly

branding, and corporate social responsibility initiatives. Critics argue that eco-socialism risks being diluted or co-opted by such greenwashing efforts, where superficial environmental measures are used to maintain capitalist structures without addressing the root causes of ecological destruction.For example, policies such as "net-zero" pledges and corporate sustainability reports often fail to address deeper systemic issues like overproduction, wealth inequality, and exploitative labor practices. Eco-socialists must continuously challenge greenwashing and ensure that sustainability efforts focus on systemic change rather than corporate rebranding.

So you have understood that while eco-socialism presents a compelling alternative to capitalist environmental destruction, it faces numerous challenges, from economic feasibility and political resistance to technological constraints and ideological disagreements. Critics argue that eco-socialism lacks a clear roadmap for transitioning from capitalism and that its decentralized economic models may struggle with efficiency and scalability.

However, eco-socialists counter these critiques by emphasizing the urgent need for systemic change, participatory democracy, and technological innovation to create a truly sustainable and just society. As climate crises intensify, the debates surrounding eco-socialism will continue to shape discussions on how to balance ecological sustainability with economic justice. The movement's success will depend on its ability to address these challenges while building broad-based public support for a post-capitalist, environmentally conscious future.

Check Your Progress:

1. Explain the origin of eco socialism.
2. Discuss eco socialism as a critique of capitalism.

3. What is ecological imperialism?
4. Examine the key features of an eco socialist society.
5. Discuss the core principles of eco socialism.
6. What do you mean by sustainable production?
7. Write a note on the practical implication of eco socialism.
8. Examine the challenges faced by eco socialism.
9. What is green capitalism?
10. Define "net-zero" pledge.

Self Asking Question

Do you think that marginalized communities particularly Indigenous peoples are disproportionately affected by pollution, resource extraction, and climate change? Discuss.

……
……
……
……

5.9 Summing Up

After reading this unit, you now understand that eco-socialism offers a compelling alternative to the ecological and social crises generated by capitalism. By advocating for a system that values both people and the planet, eco-socialism provides a framework for sustainable development, economic justice, and ecological resilience. While challenges remain, the growing urgency of climate change and environmental destruction necessitates bold and transformative solutions. In this context, eco-socialism emerges not only as a critique of the status quo but also as a roadmap toward a more just and sustainable future.

5.10 References and Suggested Readings

Albritton, R. (2019). *Eco-socialism for now and the future*. Geneva: Springer International Publishing.

Pepper, D. (2002). *Eco-socialism: from deep ecology to social justice*. Routledge.

Engel-Di Mauro, S. (2024). *Ecosocialism*.

---×---

BLOCK- II
ENVIRONMENT AND DEVELOPMENT

Unit 1: **New Paradigm of Development**

Unit 2: **Sustainable Development**

Unit 3: **Environmental Degradation**

Unit 4: **Ecological Modernisation**

Unit 5: **Ecological Citizenship**

Unit 6: **Urbanization and Environment**

UNIT-1

NEW PARADIGM OF DEVELOPMENT

Unit Structure:

1.1 Introduction
1.2 Objective
1.3 Traditional Models of Development
    1.3.1 Key Theories of Traditional Models of Development
    1.3.2 Core Principles of Development
1.4 Emergence of the New Paradigm
    1.4.1 Core Principles of the New Paradigm of Development
1.5 Theoretical Framework of New Paradigm of Development
    1.5.1 Challenges to the New Paradigms of Development
1.6 Global Initiatives to address the challenges
1.7 Summing Up
1.8 References and Suggested Readings

1.1 Introduction

Let us first understand the concept of development. Development is a complex process that engenders growth, progress, and beneficial transformation in social, economic, cultural, and environmental dimensions, promoting quality of life, equitable opportunity, and sustainability. Development is a dynamic process that encompasses economic and social variables such as finance and education. It is essential to boost living standards, tackle societal challenges such as poverty and hunger, improve access to fundamental necessities like healthcare and education, stimulate economic growth, and expedite social advancement for a more sustainable future. Development enables individuals to realise their greatest potential and have a

fulfilling life. Development must be conducted in a manner that fosters environmental sustainability. It must align with environmental protection and management while fostering sustainable growth. The current pace of urbanisation and industrialisation is adversely affecting our environment; thus, it is imperative to implement development strategies that align with environmental sustainability.

1.2 Objectives

This unit is an attempt to understand the idea of development and its new paradigms. After going through this unit, you will be able to

- *understand* the concept of new paradigms of development;
- *analyse* the difference between traditional and modern approaches to development;
- *explain* the key theories of the new paradigm of development;
- *understand* the challenges associated with the new paradigms of development.

1.3 Traditional Models of Development

Traditionally, development models have been primarily oriented towards economic and social progress, often conceptualised as a linear or staged process. These approaches typically view development as a transition from "traditional" to "modern" societies, with a strong emphasis on industrialisation, urbanisation, and technological advancement, while largely neglecting social and cultural dimensions. For instance, Walt Rostow's "Stages of Economic Growth" suggests that societies evolve through stages; the Human Capital Theory suggest that education and health can

boost productivity and growth; the Capital Accumulation Theory suggest that investment, saving, and trade liberalization pave the way to development.

1.3.1 Key Theories of Traditional Models of Development

a) Modernization Theory

Modernisation theory, especially as outlined by economist Walter Rostow, suggests that all societies go through five stages of development to become modern and economically advanced. These stages are:

1. **Traditional Stage:**
    - In this stage, most people work in agriculture to meet basic needs.
    - There isn't much economic growth, and traditional beliefs and attitudes make it hard for society to develop.
2. **Cultural Change Stage:**
    - The society started to change its beliefs and values, focusing more on progress and individual achievement.
    - People became more willing to take risks and innovate, leading to improvements in agriculture, trade, transportation, and other areas.
3. **Take-Off Stage:**
    - Traditional values begin to fade, and more money is invested in the economy.

- The economy grows quickly, with some sectors doing much better than others. This leads to rapid changes in social, political, and economic life.

4. **Self-Sustained Growth Stage:**
    - The economy continues to grow as industries adopt new technologies.
    - This growth spreads to more sectors, and more people move to cities for work. Education becomes important to develop new skills and attitudes needed for continued progress.
5. **High Economic Growth:**
    - At this stage, society reaches a high standard of living.
    - Most people have enough income to enjoy goods and services, and the economy is focused on mass production and consumption.

In short, Rostow's theory argues that all societies must pass through these stages, with cultural shifts, investments, and technological advancements being crucial for progress. The West, including countries like Britain and the U.S., has already gone through these stages.

Critics of modernisation theory argue the following points:

1. **Failure in Developing Countries:** The model has not been successful in bringing technological or economic development to many third-world countries. Despite receiving large amounts of foreign aid and education projects from wealthier nations, most of these countries remain underdeveloped, with low GNP (Gross National

Product), which measures the total value of goods and services in a country.

2. **Ethnocentrism:** Some critics believe that the theory is biased towards Western values and ways of development. They argue that not all societies should have to follow the Western model to achieve economic progress.
3. **Neglecting Global Factors:** The theory is criticised for focusing too much on internal factors, such as traditional values, as barriers to progress in developing countries. It overlooks the role of global economic and political power, as well as the conflicts and competition within and between societies, which also contribute to underdevelopment.

b) Dependency Theory

Developed by Andre Gunder Frank, dependency theory argues that no society develops in isolation. It emphasizes that underdevelopment in some countries is linked to global power dynamics, conflict, class relations, and exploitation. The theory focuses on the historical causes of underdevelopment, particularly the external factors that shape it. It suggests that underdevelopment is a result of dependent relationships between wealthy, industrialized countries (metropoles) and poorer, developing countries (satellites). Colonialism and the spread of capitalism are central to both development and underdevelopment. In this framework, poor countries are getting poorer because local elites cooperate with international capitalists to exploit their resources.

Criticisms of Dependency Theory:

1. **Overly Pessimistic:** The theory suggests that the only way to break the cycle of dependency and poverty is through a radical change in the global economy, which would involve

redistributing wealth and resources from rich countries to poor ones. However, some countries, like Japan, have successfully developed economically even after extensive contact with industrialized nations, challenging the idea that all development is hindered by dependency.

2. **Neglects Internal Factors:** The theory focuses too much on external factors and ignores the internal conditions within developing countries that may also hinder their economic growth.

c) World Systems Theory

Immanuel Wallerstein developed the world-systems theory as a response to both modernization and dependency theories. This approach argues that the differences between societies are due to an interconnected global political and economic system. Like dependency theorists, Wallerstein believes that industrialized nations benefit from exploiting non-industrial societies. The world is divided into three categories:

- **Core:** The most powerful industrialized nations that dominate the global economy.
- **Peripheral:** The poorer, non-industrialized countries that have little control over their economies and are exploited by the core nations.
- **Semi-peripheral:** Countries that are somewhat industrialized and have some economic autonomy but are not as advanced as core nations.

Criticisms of World Systems Theory:

1. **Focuses Too Much on Economics:** The theory is criticized for concentrating solely on economic factors while ignoring

political and cultural factors. It also doesn't explain why trade between industrial and non-industrial nations has to be exploitative. Some argue that, in certain cases, peripheral countries benefit from trade, especially when they acquire Western technology that helps them grow their economies.

2. **Oversimplification of Global Interactions:** The theory categorizes countries into just three groups (core, semi-peripheral, and peripheral), which may oversimplify the complexities of global relationships. Not all countries fit neatly into one of these categories, and some exceptions don't fully align with the model.
3. **Static View of Social Change:** World systems theory is sometimes seen as too focused on the current state of global inequality and not offering enough insight into how countries can transition between categories. It doesn't explain the potential for change or upward mobility of peripheral or semi-peripheral nations into core positions.

1.3.2 Core Principles of Development

The core principles of traditional models of development are given below-

- **Linear development-** Traditional models of development focus on linear stages of growthand development. It assumes that all society follows the same development path driven by economic growth and industrialization.
- **Economic growth-** This model of development emphasizes economic growth as a sign of development. Metrics such as Gross national product are used as indicators of

development. They often regard industrialisation and urbanization as a step towards progress.

- **Modernization-** Many traditional models insisted on adopting the Western models of technology, institutions and systems to achieve development. They believed that the adoption of such values with lead to progress and better living.
- **Technological Advancements-** Technological advancement is one of the core features of traditional models of development. It emphasizes that advancement in technology and science can help in achieving the desired growth. Technology can help in accessing information, health and education thereby, empowering society.
- **Environmental impact-** Traditional models of development did not emphasise environmental sustainability. Economic growth was pursued at the cost of ecological destruction.
- **Focus on Stability-** Traditional models emphasised political and stability order and stability are important to achieve the desired level of growth and development. A society with a well-ordered system and stability can attract investment and long-term economic growth.

Self-Asking Questions

How do you view traditional models of development from the perspective of sustainability?

……

……

……

Check Your Progress
1. What do you mean by development? Do you think the traditional model of development was an ideal model for growth?
2. What are the features of Traditional Models of Development?
3. Critically discuss the key theories of Traditional Models of Development.

1.4 Emergence of the New Paradigm

"New Paradigms of Development" refer to the alternative approaches to development that are different from the traditional ones which were driven towards economic growth and technological advancement. These models are considered as the emerging and evolving paths to achieve growth, progress and development different from the earlier approaches, thus representing the shift from traditional to need-based and human-centric development. The new paradigms integrated new and innovative ideas, methods and technologies to deal with the current global and local challenges by making development more inclusive, sustainable and desirable.

These paradigms stress long-term environmental management, such as sustainable development, which focuses mainly on growth and development that are in tune with environmental protection and conservation. It aims for a human-centric development that prioritises well-being, health, education and better standards of living along with inclusivity and equal access to resources for empowering individuals, communities and cultures. It signifies the departure from traditional developmental strategies to new innovative approaches that deal with contemporary challenges such as climate change, inequality, epidemics, social evils and technological issues.

1.4.1 Core Principles of the New Paradigms of Development

The core principles of new paradigms of development centre around sustainability, equity, inclusion, and innovation, but they also often emphasize rethinking traditional models of progress. Here are some key principles:

- **Sustainability**- One of the core goals of new development paradigms is promoting sustainability at environmental, economic and social levels. The new development paradigm emphasises a development that meets the needs of the present generation without compromising the needs of the future generation. It aims to ensure resource conservation, promoting practices that protect the ecosystem and reduce environmental degradation. It promotes economic sustainability by creating an economic system built on reliance and proper utilisation of the available resources. It works for social equity, justice and the development of all members of society, particularly the vulnerable and the marginalized.
- **Establishing Equity**- A central tenet of the new paradigm of development is that it aims to reduce the inequalities in society and ensure the development of people, especially historically disadvantaged groups. This development emphasised ensuring everyone's access to resources, opportunities and equal representation. It also promoted the protection and advancement of human rights to ensure the dignified lives of individuals.
- **Empowerment**- Empowerment is another important aspect of this development, which aims to encourage action at the community level to shape the development priorities that do not avoid the voices of the locals. Empowering the

community will give them the support to build their capacity to make decisions and take control of their own lives.

- **Holistic Approach**- It has been recognized that development is a holistic approach that has to address all the dimensions of development and not just focus on one aspect. Health, education, and economic policies are interconnected and therefore, the solutions to deal with any issues need to reconsider this interconnection.
- **Innovation and Technological Solutions-** Innovation and technology are seen as means to solve the developmental issues unique to this era. It emphasises bringing innovation to improve governance by encouraging new ways of organizing, governing and solving problems. This can improve the service delivery of the state to the citizens in an efficient way.
- **Future-oriented**- The new paradigms of development have a long-term vision for future-oriented development. It prioritises solutions to ensure prosperity and well-being for the future generations. It views development as a responsibility to protect the earth, to conserve the resources and to have a better tomorrow for all.
- **Adaptability**- It aims to build a system that can integrate the people and society, which can adapt to changing circumstances like climate change, economic shifts, and geopolitical changes. It prepares for unforeseen future challenges and can withstand shocks and setbacks in social, economic and political aspects. Balancing modernization with respect for local cultures, traditions, and values. This principle ensures that development does not erode cultural identities.

Self-Asking Questions

Why do you think the "New Paradigms of Development" are necessary?

……

……

……

Check Your Progress

1. What are the differences between traditional and new paradigms of development?
2. What are the core principles of new paradigms of development?
3. Do you think the new paradigms of development meet the requirements for modern development?

1.5 Theoretical framework of New Paradigms of Development

a) Human Development

The first Human Development Report (HDR) defines human development as the process of expanding people's choices and improving their well-being. It acknowledges that these ideas aren't new but emphasizes that development should benefit people and that income alone doesn't define human life. The report argues that economic growth is important but not enough on its own for true human development. It stresses that people should be seen as the end goal of development, not just as tools, and that they should actively participate in the development process, rather than simply benefiting from it. The focus should be on increasing human choices, not just providing goods and services to disadvantaged groups.

The report also introduced the Human Development Index (HDI), which measures three key aspects of human life: life expectancy (longevity), education (knowledge), and income (for a decent standard of living). The HDI combines these components to reflect a country's overall human development, with each factor being weighted equally. Life expectancy and education represent the development of human abilities, while income is a way to gauge the opportunities people have to use those abilities. In 1990, the first Human Development Report introduced a new way of thinking about improving human well-being. This approach, known as human development, focuses on enriching people's lives, not just the wealth of the economy they live in. It emphasizes people's opportunities and choices rather than assuming that economic growth alone will automatically lead to better lives for everyone.

People: Human development aims to improve the lives people lead, not just increase their income. While economic growth can be a means to development, it's not the ultimate goal. The focus is on enhancing people's well-being in a broader sense.

Opportunities: Human development is about providing people with more freedom to live the kind of life they value. This involves building people's skills and ensuring they have the chance to use them. For instance, educating a girl helps her gain skills, but these skills are only useful if she has access to jobs and opportunities in her local labour market.

The foundation of human development includes living a long, healthy life, gaining knowledge, and having the resources needed for a decent standard of living. Once these basic needs are met, they create more chances for progress in other areas of life.

Choice: At its core, human development is about giving people more choices. It's about offering opportunities and allowing people

to decide whether or not to take advantage of them. While we can't guarantee happiness, development should create conditions where people can reach their full potential and have the chance to live productive and creative lives they value.

As the world works toward achieving the 2030 Sustainable Development Goals, the human development approach continues to guide efforts in improving well-being and ensuring a fair, sustainable, and stable world.

Measuring Human Development: One of the key contributions of the human development approach has been to highlight that economic measures like GDP per capita are not enough to measure true development. The first Human Development Report introduced the Human Development Index (HDI) to assess progress in key areas of human development, such as life expectancy, education, and income.

While HDI is a simple average of these three factors, it has been widely accepted as a useful development measure. Over time, however, the HDI has been adjusted, and new indices have been developed to give a more complete picture of global human development. Criticism of the HDI has led to these ongoing improvements and expansions. The Human Development Index (HDI) is a measure that looks at three key aspects of development: health, education, and standard of living. Health is measured by life expectancy at birth, education is assessed through the average years of schooling for adults aged 25 and older, and the expected years of schooling for children of school-going age. The standard of living is evaluated by gross national income (GNI) per capita, with income being adjusted logarithmically to reflect its decreasing importance as GNI increases.

The HDI combines these three dimensions into a single score using the geometric mean of the individual indices. This allows for comparisons between countries and can raise important questions about national policies. For example, two countries with the same GNI per capita might have very different HDI scores, prompting discussions on government priorities and policies.

However, the HDI doesn't cover everything that contributes to human development. It doesn't take into account factors like inequality, poverty, human security, or empowerment. To address this, the Human Development Report Office (HDRO) offers other indices that provide insights into issues like inequality, gender disparity, and poverty.

b) Sustainable Development:

The concept of sustainable development has been a key topic in environmental discussions since the 1980s. It gained widespread attention through the Brundtland Commission (1984-1987) and their report, *Our Common Future* (1987), which defined sustainable development as meeting present needs without compromising the ability of future generations to meet their own. Since then, this definition has become central to thinking about how we balance the environment with development.

Over time, the idea has been embraced by many global organizations like the European Union, the United Nations Environment Programme (UNEP), and the World Bank, and it is now seen as a guiding principle for economic and social growth. Governments, local authorities, businesses, and civil society groups have all made commitments to sustainable development. It's also recognized as a broad issue that touches on many areas, such as trade, urban planning, environmental protection, agriculture, and energy.

Sustainable development is about meeting our current needs without preventing future generations from fulfilling theirs. It focuses on finding a balance between different needs while being mindful of the environmental, social, and economic challenges we face. Often, development is driven by one specific need, without considering its long-term or broader impact. This has already caused harm, like financial crises from reckless banking and climate change due to our reliance on fossil fuels. If we continue down this unsustainable path, the negative effects will only get worse, which is why we must act now.

Stop to Consider:

Our Common Future (1987):

It is also known as the Brundtland Report, was published by the World Commission on Environment and Development (WCED) and played a crucial role in shaping global environmental discourse. It introduced and popularized the concept of sustainable development, defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The report emphasized the interconnectedness of economic growth, environmental protection, and social equity, arguing that environmental degradation and poverty must be addressed together. It laid the foundation for international efforts like the 1992 Earth Summit and Agenda 21, calling for global cooperation and integrated policymaking to ensure long-term sustainability.

The United Nations (UN) has played a major role in pushing for sustainable development through events like the Rio Earth Summit in 1992 and the Johannesburg Summit in 2002. These gatherings led to key principles on issues like gender equality, fairness between

generations, and justice. They also produced international agreements like the UN Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol to address global environmental challenges. As a result, many new organizations have formed to promote sustainability, including groups focused on women's rights and business practices. The term UNCED process refers to all the activities led by the UN since the Brundtland Report to advance sustainable development.

In 2015, UN Member States created a plan to achieve sustainable development by 2030, known as the 2030 Agenda for Sustainable Development. This plan includes 17 Sustainable Development Goals (SDGs), each with specific targets to reach by 2030. These goals cover three key areas: the economy, social development, and the environment. The SDGs emphasize how these areas are connected and focus on sustainability at their core.

The 17 SDGs include: No poverty (SDG 1), Zero hunger (SDG 2), Good health and well-being (SDG 3), Quality education (SDG 4), Gender equality (SDG 5), Clean water and sanitation (SDG 6), Affordable and clean energy (SDG 7), Decent work and economic growth (SDG 8), Industry, innovation and infrastructure (SDG 9), Reduced inequalities (SDG 10), Sustainable cities and communities (SDG 11), Responsible consumption and production (SDG 12), Climate Action (SDG 13), Life below water (SDG 14), Life on land (SDG 15), Peace, justice, and strong institutions (SDG 16), and Partnerships for the goals (SDG 17).

While these goals are ambitious, reports show that reaching them by 2030 will be difficult. Issues like rising inequality, climate change, and biodiversity loss are major obstacles. The COVID-19 pandemic made these challenges even worse, particularly in regions like Asia, which faced significant setbacks.

According to the UN's SDGs Report 2023: Special Edition, the number of people living in extreme poverty rose to 724 million in 2020, and gender equality could take another 300 years to achieve. The Intergovernmental Panel on Climate Change (IPCC) warns that, without stronger policies, the world could exceed the critical 1.5°C temperature increase by 2035. However, it's not too late to change course. Governments are starting to include the SDGs in their national plans, but a major shift is needed to get on track. With just seven years left to reach the 2030 goals, action is urgent.

In short, sustainable development has become a major global goal, with multiple stakeholders working together through various initiatives and agreements to protect the environment while promoting fair and equitable development. The main focus of sustainable development is on society, aiming to integrate environmental concerns into how society evolves, particularly by changing how the economy operates.

Promoting sustainable development involves guiding societal change at the intersection of three key areas:

- **Social**: This refers to human values, behaviours, relationships, and institutions.
- **Economic**: This involves how resources are allocated and distributed in society.
- **Ecological**: This focuses on how both social and economic activities impact the environment and its resources.

These three areas are known as the three pillars of sustainable development.

Sustainable development is an evolving idea. It’s not about achieving a final state or creating unchanging systems, nor is it about establishing fixed aspects of social, economic, or political life.

Promoting sustainable development is an ongoing process, and its desired features change over time, across different places, and within various social, political, cultural, and historical contexts. In this book, the phrase “promoting sustainable development” reflects an awareness of how ideas about what sustainable development means can evolve and how different societies, cultures, and groups may have different goals for their sustainable development journeys.

By adopting a flexible understanding of sustainable development, we can see that there are many possible futures for society. Promoting sustainable development involves imagining these different futures and, through changes in attitudes, values, policies, politics, and economic systems, working toward a sustainable future. While this future will look different for each society depending on its context, there are certain global or shared conditions needed for humanity to achieve sustainability. These include a healthy environment and ecosystems, as well as adherence to key principles of fairness and good governance, which are explored in this book.

Promoting sustainable development is about recognizing the common good. The challenge is to guide society along a path that avoids both deterioration and stagnation, ensuring progress toward a better future for all.

c) Human Security

The idea of expanding security from focusing on state security to individual human security was first introduced by the Independent Commission on Disarmament and Security Issues in 1982. Their Common Security report was the first to challenge the purely military approach to security, emphasizing the importance of considering the relationship between security and the well-being of

individuals. After a period of little progress, the end of the Cold War became a turning point in the development of this concept. It became clear that the end of military threats from the superpowers did not automatically mean greater security for people within states. The changing global context, with emerging social issues from globalization, also influenced the evolution of security discussions. As a result, threats to individuals' well-being were no longer just military but also included economic, social, environmental, and health concerns.

In 1994, Mahbub Ul Haq provided the first authoritative definition of human security in the UNDP Human Development Report. This definition went beyond territorial and military concerns, focusing instead on human life and dignity. The report identified four key characteristics of human security: it is universal, its components are interdependent, it is best ensured through prevention, and it is people-centred. On a broader level, human security was defined as protection from chronic threats like hunger, disease, and repression, as well as from sudden disruptions in daily life. The concept was framed around the idea of "freedom from fear" and "freedom from want." While the definition was broad and somewhat vague, it identified seven categories of security threats: community, economic, environmental, food, health, personal, and political. Although the definition had its weaknesses, it provided a foundation for academic research and became a guiding framework for international organizations throughout the 1990s.

For people facing crises and extreme poverty, focusing on one issue at a time isn't enough. To create real safety and security, all insecurities must be addressed together comprehensively. Only then can people feel secure in all aspects of their lives, gain the income and opportunities needed for well-being, and have their rights and dignity fully respected. This is what true human security offers—a

more powerful and lasting solution to the challenges of peace and development.

Human security begins with understanding the needs, hopes, and challenges of people, which can vary greatly across different communities. It's important to recognize how these needs interact. Solutions should aim to address the various causes of insecurity and build resilience to ongoing risks. By doing so, actions across different areas can support each other, speeding up and sustaining human progress.

Human security also depends on empowering people to make decisions about how they can stay secure, both now and in the future. It requires institutions and norms that ensure basic protection for progress and safety, such as good governance, the rule of law, early warning systems, and social protection programs.

The value of human security programs, particularly those funded by the UN Trust Fund for Human Security, has been proven over time. These programs help strengthen societies by reducing the threats that cause division and conflict. When people have access to food, decent jobs, quality services, and a sense of dignity, they are more likely to work together to rebuild their communities and plan for a better future.

The human security approach is also focused on managing and minimizing risks, preventing small challenges from growing into larger problems. It encourages proactive and inclusive problem-solving by governments and people alike. Because human security involves many issues, it requires collaboration. Governments, non-governmental organizations, communities, and international institutions must work together. Combining their expertise and resources improves coordination, amplifies impact, and makes the

best use of available resources. This teamwork fosters a strong commitment to sustaining and building on progress.

Self-Asking Questions:

How did the new paradigms of development meet the requirements of development?

……
……
……

Check Your Progress:

1. What is sustainable development? Why is it relevant in this era of environmental crisis?

2. What is Human development? How is human development measured?

3. What are the key aspects of human development?

4. What are the components of human security? What does it focus on?

5. Why do you think sustainable development is important in contemporary times?

1.5.1 Challenges to the new Paradigms of Development

The new paradigms of development face several challenges that need to be dealt with for better growth and development. There is a lack of financial resources, which is most important for large-scale projects and schemes. Developing countries struggle with this problem, which poses a serious obstacle for future development.

The ineffective implementation of policies because of poor governance, lack of accountability, corruption within the system and lack of political will is a great hurdle to deal with. The global north-south divide has come up as another challenge as most of the developmental strategies are moulded in tune with the Western countries and not for the global south. There is a need to reconsider the cultural values and social norms across regions and not adopt a one-size-fits-all kind of approach. The new paradigm often seems to favour the wealthy nations, creating an imbalance that limits the process of growth. The contemporary world is dealing with issues such as climate change, economic inequality, and political instability; therefore, new paradigms must navigate these complexities. Technology has become one of the indispensable tools for development at this point, innovation is the need of the hour that can help in designing long-term measures that can facilitate sustainable and inclusive development. Migration, pandemics, and unprecedented climate change are posing serious threats that countries are dealing with at local, national and global levels. In such circumstances, global coordination among countries is difficult as the interests and priorities differ from each other. The new models of development lack an understanding that the ecology has a limit and that resources are limited. The push to the ecological limits can lead to unforeseen events that may pose a serious threat to the entire mankind if not taken care of.

1.6 Global Initiatives to Address the Challenges

The new paradigms of development provided an alternative way to look at the concept of development. It revolutionised the entire development process by bringing development at the local level, by making development human-centric and not just a development for economic growth. The recent decades witnessed certain efforts at

the global level for making the new paradigms of development a reality and aiming for more sustainable growth and development. Some of the Global efforts are discussed below:

- **2030 Agenda for Sustainable Development and Sustainable Development Goals:** This agenda was adopted in 2015 by the UN as an action plan to achieve development for people, the planet and prosperity. The goals and targets were set for the next fifteen years to take action in the areas that are of utmost importance for humanity and the planet. It aims to eradicate poverty and hunger in all forms and dimensions and provide humans with a life of dignity and prosperity. It also pledges to protect the environment and the planet from degradation by conserving, protecting and managing natural resources and accelerating social and technological progress that occurs in harmony with nature. Global peace and partnerships are seen as major goals for a transformed world and society that strives for peace and global solidarity.

- **Paris Agreement:** The Paris Agreement is a legally binding international treaty on climate change adopted by 196 Parties at the UN Climate Change Conference (UNCCC) in Paris 2015, which entered into force in 2016. It aims to hold "the increase in the global average temperature to well below 2*C above pre-industrial levels" and efforts "to limit the temperature increase to 1.5*C above pre-industrial levels. World leaders also stressed the need to limit global warming to 1.5*C by the end of this century. This was a landmark event because the world leaders, for the first time, made efforts to bring all the nations together to a binding agreement to combat climate change. Since 2020, all the

countries are providing their action plans on climate action in the form of nationally determined contributions (NDCs) to reduce their greenhouse gas emissions.

- **The Global Green New Deal:** The Global Green New Deal(GGND) was announced by the United Nations in 2008. It calls on governments to allocate a significant portion of stimulus funding to green sectors. It has three objectives: a) Economic recovery, b) poverty eradication, and c) reduced carbon emissions and ecosystem degradation. It proposed a framework for green stimulus programs as well as supportive domestic and international policies. The GGND included national action proposals that cited that the US, the EU and other high-income Organization for Economic Co-operation and Development(OECD) economies, as well as middle and high-income economies of the G20, should spend over 2 years at least 1% of their GDP on reducing carbon dependency. The developing countries should also implement the national actions proposed for reducing carbon dependencies. All the economies are urged to consider removing water subsidies and other distortions.

- **Convention on Biological Diversity(CBD) and Post-2020 Global Biodiversity Framework:** After delays caused by the global COVID-19 pandemic, governments gathered in 2021 at the Convention on Biological Diversity (CBD) Conference of the Parties (COP 15) in Montreal, Canada, to adopt a new global biodiversity framework for the post-2020 period. This framework is a crucial step towards realizing the CBD's 2050 Vision of 'Living in harmony with nature.'

It will replace the Strategic Plan for Biodiversity 2011-2020, which has not succeeded in preventing the dramatic loss of biodiversity. With the failure to protect nature now jeopardizing our well-being and survival, the upcoming decade represents a critical moment to implement and deliver a transformative framework to better safeguard, conserve, and restore biodiversity for both people and the planet. This new framework must halt the ongoing decline and begin reversing biodiversity loss, aiming for a 'nature-positive' world by 2030. It must also change how we value nature and harness its full potential to support the Sustainable Development Goals, the Paris Agreement on climate, and a green recovery that helps us rebuild from the pandemic, which is itself a consequence of our imbalance with nature.

- **Global Health Initiative:** Global health initiatives work together across various areas such as AIDS, tuberculosis, malaria, immunization, maternal and child health, tobacco use, emerging diseases, nutrition, health promotion, and strengthening health systems. Two main organizations, the Global Fund and Gavi, the Vaccine Alliance, provide significant funding to eligible countries in these regions. Seven countries – Afghanistan, Djibouti, Pakistan, Somalia, Sudan, Syria, and Yemen – qualify for Gavi's support for immunization and health system strengthening. Additionally, 12 countries, including these seven, receive Global Fund grants. However, political instability and conflict in many of these countries present a major challenge. Insecurity often makes it difficult for people to access health services, and the loss of skilled healthcare workers has weakened health

systems. Furthermore, global health initiatives have created separate programs that disrupt the integrated development of the health system. The principles of external aid, such as ensuring countries take ownership and coordinating efforts, are not always followed. Ultimately, the goal of global health initiatives is to ensure everyone has access to health services and to reduce health disparities both within and between countries, contributing to a world where people live longer, healthier, and safer lives.

Self-Asking Questions

Do you think the global efforts for a sustainable environment and human live are enough to ensure a better future for all?

……

……

……

Check Your Progress

1. What are the challenges that the new paradigms of development encounter in contemporary times?

2. Give some instances of global efforts for a sustainable environment and development.

1.7 Summing Up

After reading this unit you have understood that development is a multifaceted phenomenon that results in growth, progress, and positive change in the social, economic, cultural, and environmental aspects fostering quality living, equal opportunity and sustainability.

Development is a dynamic process involving economic and social factors like money and education.Traditionally, the models of development were driven towards economic and social progress, which were confined to linear or staged progress of development. This notion of development refers to the theories and approaches that view development as a process from “traditional” to “modern” societies by emphasizing industrialization, urbanization, and modernization. Traditional models of development emphasize technological advancements and capital investments, ignoring the social and cultural factors.Traditional models of development include Modernization Theory, Dependency Theory and World System Theory.You have also understood that“New Paradigms of Development” refer to the alternative approaches to development that are different from the traditional ones, which were driven towards economic growth and technological advancement. These models are considered as the emerging and evolving paths to achieve growth, progress and development different from the earlier approaches, thus representing the shift from traditional to need-based and human-centric development.The new paradigms of development included theories like Human Development, Sustainable Development and Human security.The new paradigms of development face several challenges that need to be dealt with for better growth and development. There is a lack of financial resources, which is most important for large-scale projects and schemes. Developing countries struggle with this problem, which poses a serious obstacle for future development. The ineffective implementation of policies because of poor governance, lack of accountability, corruption within the system and lack of political will is a great hurdle to deal with.The recent decades witnessed certain efforts at the global level for making the new paradigms of development a reality and aiming for more sustainable growth and

development. Some of the instances are the 2030 Agenda for Sustainable Development and Sustainable Development Goals, The Global Green New Deal, the Paris Agreement, the Convention on Biological Diversity(CBD) and the Post-2020 Global Biodiversity Framework and the Global Health Initiative.

1.8 References and Suggested Readings

Amartya Sen (1999) "The ends and means of development" Chapter 2 from "Development as Freedom", Oxford University Press.

Barker, S. (2006). *Sustainable Development*. Routledge.

Haque, M. S. (2000). Environmental Discourse and Sustainable Development: Linkages and Limitations. *Ethics and the Environment*, *5*(1), 3-21.

Mahbub ul Haq (1995) "The Advent of the Human Development Report" Chapter 3 from "Reflections on Human Development", Oxford University Press.

McGillivray, M. (2012). What is Development? In *International Development* (pp. 21-49). Palgrave Macmillan.

Selim Jahan (2002) "Evolution of the Human Development Index," Section 2 from "Handbook of Human Development", Oxford University Press.

Srinivasan, T. N. (1994). Human Development: A New Paradigm or Reinvention of the Wheel? *The American Economic Review*, *84*(2), 238-248. : https://www.jstor.org/stable/2117836

Sustainable Development Goals. (n.d.). *A Global Green New Deal*. A Global Green New Deal. https//:sustainabledevelopment.un.org

---×---

UNIT- 2

SUSTAINABLE DEVELOPMENT

Unit Structure:

2.1 Introduction

2.2 Objectives

2.3 Sustainable Development- the concept

2.4 International arrangements towards sustainable development

2.5 Salient Principles of Sustainable Development

2.6 Sustainable Development and Judiciary in India

2.7 Summing Up

2.8 References and Suggested Readings

2.1 Introduction

Development, in order to be sustainable, needs to be efficient, equitable and environmentally sound. The term 'sustainable development' is preferred now-a-days more than that of 'economic growth', because the former is having wider concerns as it covers within its ambit both economic development and ecological protection. Now, this in itself is a challenge, because development comes through various activities like that of industrialization, which in turn results in environmental degradation. The emphasis on sustainability suggests that a policy aimed towards development should also take into account the future needs. Thus, sustainable development means an integration of both developmental and environmental imperatives. This concept of sustainable development has become very popular these days and different countries have shown their concern for this concept. Sustainable development is basically a value system which is at par with human rights,

democracy and freedom and is essentially a strong ethical or moral pronouncement as to what should be done. The concept of sustainable development basically rests on three imperatives: satisfying human needs, ensuring social equity and respecting environmental limits. In this particular unit, we will try to make an in-depth study of the concept of sustainable development.

2.2 Objectives

This unit deals with the concept of sustainable development in its entirety. After reading this unit, the learners will be able to:-

- *understand* the meaning and concept of sustainable development;
- *describe* the various International arrangements towards sustainable development;
- *discuss* the Salient Principles of Sustainable Development;
- *analyse* the connection of Sustainable development and Judiciary in India.

2.3 Sustainable Development- the concept

The burning question today is whether the planet's limited natural resources can continue to support the requirements of growth and development indefinitely. Traditionally, there was much concern with the efficient use of resources but rarely people worried that these resources might get shortage of supply and might in fact become extinct if exploited indiscriminately. Here, we can quote As Anil Agarwal aptly explained, "Development at the cost of the environment can only go so far—it is like a foolish man cutting the very branch of a tree on which he is sitting. Development without

environmental concern is merely short-term progress." https://onlinelibrary.wiley.com/doi/abs/10.1002/sd.3460030203

The term 'sustainable development' was first introduced during the Cocoyoc Declaration in the 1970s and has since been emphasized as a means to achieve environmentally responsible growth. For development to be truly sustainable, it must integrate both economic and ecological perspectives. It is argued that neither the environment nor development is an end in itself but rather a means to ensure long-term well-being. The core principle of sustainable development—that the present generation should use natural resources responsibly to safeguard the needs of future generations—has gained widespread international acceptance. This concept is rooted in the understanding that natural resources are not solely the product of the present generation's efforts and must be managed with respect for the rights of future generations. Ultimately, sustainable development represents a global vision that seeks to balance economic growth, environmental preservation, and social well-being. The three pillars of sustainable development are – social, environmental and economic. It needs mention here that sustainable development is a holistic approach that considers the social, environmental and economic aspects. Social sustainability aims at creating inclusive societies, reducing inequalities and ensuring long-term well-being for all the people. It wants to promote equity, human rights, access to education and proper health care etc. Economic sustainability refers to conducting economic activities in such a way so as to preserve and promote long-term economic well-being. It focuses on achieving sustainable economic growth that is both environmentally and socially responsible. Environmental sustainability refers to the ability to preserve and protect the natural environment through the appropriate practices and policies.

We can discuss now about various international declaration and conventions which has given importance on this concept:-

1. **Stockholm Declaration:-** The concept of sustainable development received impetus in the Stockholm declaration which resulted from the United Nations Conference on Human Environment of 1972. The declaration states that the Earth's capacity to produce vital renewable resources are to be preserved and to be restored. The non-renewable resources must be used very judiciously in such a way that they are protected against the danger of their future exhaustion. Also Principle 11 of the declaration demands that the environmental policies of all the countries should not have any detrimental effect on the present or future developmental potential of the developing countries.

2. **Brundtland Commission:-** The term 'sustainable development' was very much popularised by the World Commission on Environment and Development which is also known as the Brundtland Commission. In its seminal report 'Our Common Future' (1987), this concept was thoroughly discussed. The Brundtland Report gave a very comprehensive definition of the concept of sustainable development in the following words: Sustainable development is development that meets the needs of the present without compromising the ability of the future generations to meet their own needs.

   It has also been contended that sustainable development does not imply absolute limits to growth and also it is not a new name of environmental protection. Rather, it is a new concept of economic growth. It is simply a process where

different policies aim towards inducing developmental paths which are economically, socially and ecologically sustainable. However, the report emphasized on the fact that sustainable development cannot and will not be achieved in a poverty ridden society. The report emphasized on the fact that sustainable development demands that there must be integration of economics and ecology in the decision-making at all levels.

The non-renewable resources like that of fossil and fuels, when used, its stock gets reduced for use by the future generations. But that does not mean that such resources should not be used. These resources need to be exploited keeping in mind the future needs. The concept also requires that the adverse impacts on the quality of air, water, and other natural elements are minimized so as to sustain the ecosystem's overall integrity.

The Brundtland Report has mentioned the following as the objectives which emanates from the concept of sustainable development: reviving growth, changing quality of growth, meeting essential needs for jobs, food energy, water and sanitation, ensuring sustainable level of population, conserving and enhancing the resource base, reorienting technology and managing risk and merging environment and economics in decision-making. Certain general principles about environmental protection and sustainable development has been highlighted by the Brundtland Commission, which are:

1. Fundamental Human Rights – It has been highlighted by the Commission that all human beings are entitled to fundamental right to an environment which is adequate for their health and well-being.

2. Inter-generational equity – It shall be the duty of the States to conserve and use the environment and the natural resources in such a way that it benefits the present and the future generations.

3. Conservation and Sustainable use – Again, it shall be the duty of the States to maintain ecosystems and ecological processes for the proper functioning of the biosphere, to preserve biological diversity, and to observe the principle of optimum sustainable yield in the use of natural resources and ecosystems.

4. Environmental standards and monitoring – The states shall establish adequate environmental protection standards and monitoring mechanisms and should also publish relevant data on environmental quality and resource management.

5. Prior environmental assessments – Before taking out any proposed activities, the states shall make prior environmental assessments of those because it may significantly affect the environment.

6. Prior notification, access and due process – There must be prior information about any activity to the persons who are likely to be significantly affected by planned activity and also they should get equal access and due process in the administrative and judicial proceedings.

7. Sustainable development and assistance – States shall ensure conservation of resources and should also provide assistance to the other states, especially the developing ones in order to support them in matters of environmental protection.

8. General obligation to Co-operate – States shall co-operate in good faith with the other states in implementing the rights and obligations.

Thus, the commission very well highlighted on the fact that for achieving sustainable development, both the economy and ecology will have to merge and the environmental concerns must become an integral part of the decision-making at all levels.

Self Asking Question

All the resources need to be exploited keeping in mind the future needs. Discuss the relevance of this statement.

……..

……..

……..

2.4 International arrangements towards sustainable development

The concept of Sustainable Development is not a new one. The doctrine got its recognition as early as in 1972 in the Stockholm declaration, where it was stated that: "Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well being and he bears a solemn responsibility to protect and improve the environment for present and future generation." https://www.legalserviceindia.com/articles/jud.htm

Thereafter, The Earth Summit convened by the UN General Assembly at Rio de Janeiro in June 1992 also focused on the concept and again after 10 years of the Rio Conference, The World Summit on Sustainable Development was held at Johannesburg,

which reaffirmed the concept of sustainable development. Sustainable development attempts to accelerate the process of development in an environmentally responsible manner keeping in mind the needs and requirements of the future generations.

The concept of sustainable development covers within its ambit the three principal components of economic growth, social equity and protection of the environment. These three components are interdependent and mutually reinforcing pillars. We all know that in these days of globalization, rapid economic, scientific and technological advancements have shown massive repercussions in the form of degradation of ecological balances. Increase of population has taken place at a very fast rate leading to various economic pressure. As a result, the concept of sustainable development has come into limelight. We need development at a faster pace no doubt but keeping in mind its sustainability. And here, lies the challenge – the challenge to achieve a balanced approach towards development in terms of optimality and sustainability. https://www.distanceeducationju.in/pdf/SOC-203

It needs mention here that sustainable development goes beyond mere physical structures; it also necessitates an all inclusive ecosystem where communities will get a chance to shape their destinies. Engaging with the local stakeholders ensures equitable benefits and balanced development.

We have already discussed in the preceeding section about the Stockholm declaration and the Brundtland Commission in detail. The remaining international arrangements towards sustainable development will be discussed here. It has been seen that in 1991, the World Conservation Union, United Nations Environment Programme and the World Wild Fund, jointly produced a document called ‘Caring for the Earth: A Strategy for Sustainable Living’ which defined sustainability as a characteristic which can be

maintained indefinitely whereas development is defined as the increasing capacity to meet the human needs and improve the quality of human life.

Thereafter, the United Nations Conference on Environment and Development which is also known as Earth Summit was held in June 1992 at Rio de Janeiro. This was in fact the largest UN Conference ever held which helped putting the world on the path of sustainable development. It needs mention here that this Summit was inspired and guided by the Brundtland report. The following documents were produced by this Summit:

- The Rio declaration on environment and development.
- Agenda 21.
- Forest principles.
- Two legally binding conventions.

Let us now discuss the above documents in detail:-

1. The Rio declaration on Environment and Development – This declaration consists of various principles which guide the nations towards more environmentally sustainable patterns of development. Principle 1 of the declaration states that human beings are at the center of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with the nature. Principle 2 again stipulated that it is the duty of the states to see that while exploiting their own resources pursuant to their own environmental and developmental policies, it is their responsibility to look into the matter that their activities do not cause any damage to the environment of other states. Principle 3 again contended that the right to development must be fulfilled so as to equitably meet the developmental and environmental needs of the present and future generations. Principle 4 further stipulated the fact that in order to achieve sustainable development, environmental protection shall

constitute an integral part of the developmental process and it cannot be treated in isolation. Principle 5 again said that eradication of poverty is indispensable requirement for sustainable development. All states and all people need to co-operate in this essential task. It is pertinent to mention here that our former Prime Minister Mrs. Indira Gandhi, while speaking at the Stockholm Conference said that of all the pollutants we face, the worst is poverty. Principle 8 of the declaration further said that in order to achieve sustainable development and a higher quality of life for the people, states should reduce and also should eliminate the unsustainable patterns of production and consumption. Principle 10 highlighted the fact that the environmental issues can be best handled with the participation of all concerned at the relevant level. Principle 11 requires the states to enact effective environmental legislations because it is through laws that human conduct can be regulated. Principle 13 highlighted on the liability and compensation for the victims of pollution and other environmental damage. The 'precautionary principle' has been incorporated in principle 15. Principle 17 of the declaration again highlighted on the need of having environmental impact assessment (EIS) for the different activities which are likely to have a significant adverse impact on the environment. Principle 25 again stipulated that peace, development and environmental protection are interdependent and indivisible. Lastly, principle 27 contended that States and people shall co-operate in good faith and in a spirit of partnership in the fulfillment of the principles embodied in the declaration and in the further development of international law in the field of sustainable development.

2. Agenda 21 – It is actually an action plan, and a comprehensive blue-print for local, national, regional and global actions to affect the transition to sustainable development. It addresses the pressing

problems of today and also aims at preparing the world for the challenges of the next century and also lays emphasis on the international co-operation for achieving the goal of sustainable development. Agenda 21 has the following four sections: social and economic dimensions, conservation and management of the resources for development, strengthening the role of the major groups, and, section IV deals with the means of implementation. However, it has been criticized on its failure to address some of the very relevant issues and also on the groud that there is hardly any guidance as to how its recommendations should actually be implemented.

3. Forest principles – These principles are to support the sustainable management of forests worldwide. We know that forests play a very important role in the development process and also in preserving the ecology. There are specific recommendations for combating deforestation.

4. Conventions on climate change and on biodiversity – At Rio conference, two legally binding conventions were signed by the representatives of various countries. The convention on climate change requires the states to take steps to reduce emissions of gases which lead to global warming. The other convention on biodiversity requires the states to take steps for protection and the sustainable use of the world's diverse plants and animal species.

Next, we can mention here about U.N Commission on Sustainable Development (UNCSD) which is a functional commission of the United Nations Economic and Social Council (ECOSOC). The main task of the Commission is to look into the matter that effective follow-up of the Rio Conference is taking place and also to enhance international co-operation and rationalize the inter-governmental decision making capacity.

A special session of the UN General Assembly at New York on the environment was held in June 1997 which is also known as Earth Summit plus Five. This special session came to be called so because it was held after five years from that of the Earth Summit in 1992. To the dismay of all, it was found in the conference that the planet's oceans, forests and atmosphere are still in trouble and its population of poor people are growing. Also disappointing was the status of global warming. India as well as other developing countries pointed out the problem that the developed nations are not helping the poor south to develop in ways as was contended. They pointed out that the development aid has actually declined. Thus, the delegates agreed on some of the concrete remedies in such critical juncture.

On 11thDecember, 1997, delegates from various nations attended the World Climate Conference where they called for mandatory cuts in the emission of green-house gases by the industrialized nations, to help save the planet from devastating global warming. This accord strengthened the 1992 Convention on Climate Change by putting limits on the industrialized nation's emissions of the green-house gases.

Thereafter, the UN Sponsored Global Environment Facility (GEF) was held in April 1998, where the industrialized nations were asked to enforce stringent emission norms and limit the pollution levels so as to save the world from an impending ecological disaster. Mr. Atal Behari Vajpayee, the then PM of India while opening the assembly warned the industrialized nations that global warming could damage the ecology.

Thereafter, the member states unanimously adopted the Millennium Declaration at the Millennium Summit in Sept. 2000 in New York and the Summit led to the elaboration of eight Millennium Development Goals (MDGs) so as to reduce extreme poverty by 2015.

The Johannesburg Declaration on Sustainable Development and the Plan of Implementation adopted at the World Summit on Sustainable Development in South Africa in 2002 reaffirmed the global community's commitments towards poverty eradication.

At the United Nations Conference on Sustainable Development (Rio + 20) in Rio de Janeiro in June 2012, the member states adopted the document 'The Future We Want' in which they decided to launch a process to develop a set of SDGs.

Thereafter, the UN Sustainable Development Summit in Sept. 2015, where the 2030 Agenda for Sustainable Development was adopted by all member states which provided a blueprint for peace and prosperity for the people and the planet.

The 17 sustainable developments goals (SDGs) are as follows:-

Goal 1 – No poverty.
Goal 2 – Zero Hunger.
Goal 3 – Good health and well-being.
Goal 4 – Quality education.
Goal 5 – gender equality.
Goal 6 – clean water and sanitation.
Goal 7 – Affordable and clean energy.
Goal 8 – decent work and economic growth.
Goal 9 – industry, innovation and infrastructure.
Goal 10 – reduced inequalities within and among countries.
Goal 11 – sustainable cities and communities.
Goal 12 – responsible consumption and production.
Goal 13 – climate Action.
Goal 14 – life below water.
Goal 15 – life on land.
Goal 16 – peace, justice and strong institutions.
Goal 17 – partnerships for the goals.

Self Asking Questions

The industrialized nations were asked to enforce stringent emission norms and limit the pollution levels so as to save the world from an impending ecological disaster – Discuss the relevance of the statement.

……..

…….

…….

2.5 Salient Principles of Sustainable Development

We have already discussed at length about the concept of sustainable development and can already deduce from the above discussion about its salient principles. Some of the salient principles which can be deduced from Brundtland report and other international documents are discussed as under:-

1. Inter-Generational Equity – This principle stands for right of each generation of human beings to get the benefit from the inheritance of the past generations as well as the obligation to preserve such heritage for the future generations. The natural resources on the planet cannot be exhausted by the present generation to meet their needs.

2. Use and Conservation of the Natural Resources – The earth's natural resources need to be conserved and used properly. These resources must be conserved and enhanced so as to meet the needs of the growing populations.

3. Environmental protection – The protection of the environment is a very vital feature of the concept of sustainable development. Without adequate environmental protection, development is undermined, and without development, we will fail in our mission.

4. The Precautionary Principle – This principle ensures that whenever any substance or activity is likely to pose a threat to the environment, it needs to be prevented from adversely affecting the environment. Thus, it connotes the need of three components: anticipate, prevent and attack the causes of environmental degradation. This principle and its importance have been recognized in almost all the major international instruments. In 1990, Bergen declaration on Sustainable development laid stress on this aspect, saying that environment related actions should predict, prevent and suppress environmentally harmful factors. Thereafter, many other document and Summit stressed its importance.

5. The Polluter Pays Principle (PPP) – This principle has been interpreted by the Supreme Court of India as the absolute liability for causing harm to the environment leads to compensate the victims of pollution and also the cost of restoring the environmental degradation. In other words, it means the polluter is liable to pay the cost to the individual victims as well as the cost of reversing the damaged ecology. Thus, remediation of the damaged environment is also a part of the process of sustainable development. It is relevant to mention here that in 1972, the member countries of Organisation for Economic Co-operation and Development (OECD) agreed to shape their environmental policies in accordance with the PPP. Also, the principle 16 of the Rio declaration of 1992 enunciates the polluter pays principle. Moreover, the European Community has accepted it as a fundamental part of its strategy and accordingly set out the following principles:- preventive action is to be preferred to remedial measures, environmental damage should be rectified at source, the polluter should pay for the costs of the measures taken to protect the environment, and, environmental policies should form a component of the European Community's other policies. Thus we

see that in accordance with the PPP, the responsibility to repair the environmental damage has been given on the polluter.

6. Obligation to assist and co-operate – The environmental problems are not the concern of any individual country. Rather it is a global problem affecting all and thus, it can be tackled effectively with the assistance and co-operation of all. Principles 9, 10, 12 and 27 of the Rio declaration laid emphasis on this aspect.

7. Eradication of Poverty - Eradication of Poverty is very important to achieve sustainable development. The Brundtland report very rightly pointed out the fact that poverty reduces people's capacity to use resources in a sustainable manner and hence it intensifies the pressure on the environment. Most of the developing countries are crippled with this problem. Thus, the key to achieve sustainability is to break the vicious cycle of poverty.

8. Financial assistance to the developing countries –We have already studied above that the developing countries are crippled with the problem of poverty and also they do not have the financial capability and modern technology. Thus, the developed countries need to assist these developing countries through financial assistance and the transfer of proper technology, in order to achieve the goal of sustainable development.

We have discussed above some of the important Salient Principles of Sustainable Development. But it should be kept in mind that the challenges of sustainable development are daunting. The real test lies in its proper implementation and for this, there is the need of the political will of the developed as well as the developing countries to act in co-operation and co-ordination so as to protect the planet earth from further deterioration. (Jaswal and Jaswal).

We have discussed above the various important parameters of sustainable development. Now, let us have a look at the global

challenges it confronts. We have already seen that sustainable development serves as a guiding light which directs our efforts towards a future characterized by balanced economic growth, environmental conservation and social justice. However, in this process, it has to confront a multitude of obstacles and each of these challenges call for innovative solutions. The challenges are like – over utilization of resources and environmental decline, population growth and unplanned urbanization, poverty and social disparity, climatic change and its ramifications, inadequate access to the fundamental human needs, war and instability, suitability and ability of a nation to implement sustainable development programmes in their own country etc. Addressing these basic needs is fundamental towards achieving sustainable development

2.6 Sustainable development and Judiciary in India

We have already discussed at length about environmental jurisprudence and environmental policies in India and in that unit, we discussed about this aspect. We have seen that in our country too, like other developing countries, there has been environmental degradation due to the factors like that of industrialization, urbanization, population explosion etc. Various steps have been taken from time to time for the protection and improvement of the environment. Thus, in our country, we see that there has been a regular development of the laws regarding the environmental protection. But these laws need to be interpreted properly by the judiciary in accordance to the need of the situation. In our country, the judiciary has always played a pivotal role in interpreting the laws in a manner which helped tremendously in promoting the concept of sustainable development. There are such vast arrays of such cases that a new 'environmental jurisprudence' has been created.

We can totally understand the fact that in the present era, it is neither feasible nor practicable to have a negative approach towards development process but there must always be consideration for the environment. No doubt that the society need to prosper but that cannot be done at the cost of the environment. Similarly, environment cannot stand as an obstacle in the path of development of the society. At this critical juncture, sustainable development is the only answer to the problem. The judiciary in India has always played a very important role in environmental protection and has applied the principle of sustainable development so as to strike a balance between economy and ecology. Most of the environmental cases have come before the courts through PIL i.e., Public Interest Litigation. Let us have a look at some such cases:-

In the Doon Valley case, there was a conflict between development and conservation and the court tried to reconcile the two in the larger interest of the country and accordingly ordered the closure of number of limestone quarries. However, in R. L and E. Kendra v/s State of U.P., the court took note of the fact that mining activity has to be permitted to the extent it is necessary in the economic and defence interests of the country. In M. C. Mehta v/s UOI case, a PIL was filed seeking court's intervention regarding the mining activities in the vicinity of touring resorts of Badkal lake and Suraj Kund in Haryana. The court held that mining activities in the vicinity of tourist resorts were bound to cause severe impact on the local ecology and thereby asked mining activities to be stopped within a radius of such tourist resorts. In another case, M. C. Mehta v/s UOI, the Supreme Court though issued directions for stopping mechanical stone-crushing activities at some places, but in consonance with sustainable development, new sites were allotted as crushing zones. The Supreme Court also has shown concern for the protection and conservation of the forests in different cases and

issued directions to stop the illegal felling of the trees. Regarding industrial pollution also, the judiciary has tried to promote the concept of sustainable development. Soon after the Bhopal catastrophe, there was the major leakage of oleum gas from one of the units of Shriram Chemicals in Delhi which affected a large number of people. Thereafter, the judiciary evolved many principles in accordance with the principle of sustainable development. Regarding the liability of an enterprise which is engaged in an hazardous or inherently dangerous industry, the court observed: We are of the view that an enterprise which is engaged in a hazardous or inherently dangerous industry which poses a potential threat to the health and safety of the persons working in the factory and residing the surrounding areas owes an absolute and non-delegable duty to the community to ensure that no harm results to anyone on account of hazardous or inherently dangerous nature of the activity which it has undertaken….the enterprise must be held to be under an obligation to provide that the hazardous on inherently dangerous activity in which it is engaged must be conducted with the highest standards of safety and if any harm results on account of such activity, the enterprise must be absolutely liable to compensate for such harm and it should be no answer to the enterprise to say that it had taken all reasonable care and that the harm occurred without any negligence on its part. (Jaswal and Jaswal).

Thus, the above paragraph states clearly that the principle of PPP has been enunciated by the judiciary. In another case Indian Council for Enviro-Legal Action v/s UOI, a PIL was filed alleging environmental pollution caused by private industrial units. Under the ‘polluter pays principle’ the offending industries were directed to compensate for the losses due to the damage and to pay towards the cost of restoration of the environmental quality. The Court emphasized on the concept of sustainable development and

observed: while economic development should not be allowed to take place at the cost of ecology or by causing widespread environment destruction and violation; at the same time, the necessity to preserve ecology and environment should not hamper economic and other developments. Both development and environment must go hand in hand, in other words, there should not be development at the cost of environment and vice-versa, but there should be development while taking due care and ensuring the protection of environment. (Jaswal and Jaswal).

Again in the Taj Mahal case, the court upheld judgement based on the principle of sustainable development where the court applied the 'precautionary principle'. In this particular case, a PIL was filed alleging that the use of coke/coal by the industries situated within the Taj trapezium zone (TTZ) were emitting pollutants thereby causing damage to the monument of international repute and also causing problem for the people living in the area. The court followed the path of sustainable development and applied the 'precautionary principle' by holding that the environmental measures must anticipate, prevent and attack the causes of environmental degradation. It directed all the industries operating in TTZ to use natural gas as a substitute for coke/coal as an industrial fuel. The industries which cannot obtain the natural gas connections must stop functioning in the TTZ area and they may relocate themselves as per directions of the court. The Supreme Court in another case of M. C. Mehta v/s UOI, has held that in order to reduce the element of risk to the community from industrial hazards, the Govt. of India should evolve a national policy for location of such hazardous industries in areas where the population is scarce and there is little hazard or risk to the community. Yet in another important case, the apex court issued suitable directions regarding the use of land which would become available on account of shifting

or relocation of the hazardous/noxious/heavy and large industries from the city of Delhi. Similar such cases are there where the judiciary tried to deal with tanneries and discharge of effluents. Over the years, it has been noticed that various tanneries operating in different parts of the country have been discharging effluents without any treatment and thus creating the menace of pollution. The courts in such cases have issued directions to such tanneries to either install primary treatment plant or else stop working, thereby following the path of sustainable development. The Indian judiciary also showed its concern towards the problems of urbanization and the need for protecting and preserving the environment. Also, the judiciary has shown its concern whenever the public parks which are actually for recreation of the people are used for any other purposes thereby disturbing the ecological balance. In such cases, the court tried to strike a balance. In one such case, the court pointed out that a private nursing home is essentially a commercial venture and its utility may not be undermined but a park is a necessity too. What is lost by removal of a park that cannot be restored by the establishment of a nursing home. Saying this the court rejected the action of the government. Similarly, there are various other landmark judgements in the field of vehicular pollution and environmental protection.

Stop to Consider

Relationship between sustainable development and attaining self-reliance:-

Sustainability of resources and the progress of a nation are inter-connected issues. We can take the example of the pandemic situation which caused mayhem in the global markets as well as disruption all over. The health care system faced unprecedented

challenges which compelled us to think about giving high priority to the principles of sustainable development for a better future. The situation compelled us to make efforts to become self equipped by making our own oxygen cylinders, masks, PPE kits etc. It was widely felt during the adverse situation of the pandemic that the management of resources through various sustainable developmental goals and attaining self-reliance are the only way out to deal with such adversities. Such situation gave a chance to our manufacturers and also our indigenous sectors to produce more domestic products and thus attain self sufficiency. Thus, the attainment of self-sufficiency aimed towards proper utilization of our vast array of resources in accordance with the principle of sustainable development.

Check Your Progress

1. What is Sustainable development? What are the biggest environmental challenges facing sustainable development today?

2. Discuss how can the developing countries achieve sustainable development without harming the environment.

3. Do you think that education helps towards the attainment of sustainable development? Explain.

2.7 Summing Up

Thus, we have discussed above the various important parameters of the concept of sustainable development. It is seen that the concept has been growing in importance over the years and different countries have embarked upon this principle. In our country too, various steps have been taken to promote this concept. Sustainable blue economy is yet another important concept which supports the

sustainable use of the ocean resources for economic growth, improved livelihoods and jobs, and promoting ocean ecosystem. Sustainable development, if followed correctly, can go a long way in fostering a kind of balanced approach of development.

2.8 References and Suggested Readings

- Jaswal, P. S. and Jaswal, N. (1999) *Environmental Law*. Allahabad Law Agency.
- Tripathi, S. C., (2008). *Environmental Law*. Central Law Publications
- Basu, D. D. (1997) *Introduction to the Constitution of India* (18th ed.), Prentice Hall of India pvt. Ltd., New Delhi.
- Kharvel Ranjith. *Sustainable Solid Waste Management in India*.
- Pezzey, J. (1992). Sustainable development concepts. *World*, *1*(1), 45.
- Pugh, C. (2014). *Sustainability the environment and urbanisation*. Routledge.

---×---

UNIT- 3

ENVIRONMENTAL DEGRADATION

Unit Structure:

3.1 Introduction

3.2 Objectives

3.3 Causes of Environmental Degradation

3.4 Consequences of Environmental Degradation

3.5 Environmental degradation and Preservation

3.6 Environmental Degradation and Other factors: inter-connectedness

3.7 Problems concerning Environmental Degradation

3.8 Summing Up

3.9 References and Suggested Readings

3.1 Introduction

Environmental Degradation is an umbrella concept which covers within its ambit a variety of problems like pollution, biodiversity loss, animal extinction, deforestation and desertification, global warming etc. It refers to the deterioration of the environment through the depletion of resources, such as air, water, and soil, as well as the destruction of ecosystems. Thus, it implies any change or disturbance in the environment that is perceived as undesirable. We must take note of the fact that there is an intricate connection between the environment and the lives of living beings. The deterioration of the environment is adversely affecting living beings. It must be kept in mind that humans have a deep dependence on the natural environment for their very survival. Thus, the health of the planet is intrinsically related to our life and a healthy environmental

system is integral to human well-being. Since healthy environment is so very important for our very survival, that is why over the years, there has been growing concern over the issue of environmental degradation and preservation. In this unit, we will make an endeavour to the study of the concept of Environmental Degradation in its entirety.

3.2 Objectives

In this unit, we aim to introduce you to the concept of environmental degradation and the need for its preservation. After reading this unit, you will be able to:

- *discuss* the meaning of Environmental Degradation;
- *understand* the causes of Environmental Degradation;
- *describe* the Consequences of Environmental Degradation;
- *trace* the ways of environmental preservation;
- *analyse* the inter-connectedness of Environmental Degradation and Other factors;
- *explain* the problems concerning Environmental Degradation.

3.3 Causes of Environmental Degradation

There are various causes of Environmental Degradation, but the primary cause of environmental deterioration is the disturbance caused by human activities. It is true that there is a need of modern technological progress to bring about development but its adverse effect is that it is the root cause of environmental degradation. As a result of industrial revolution, there has been large scale expansion of industries which used fuels as source of energy thereby leading to

environmental degradation. Environmental Degradation has been considered as one of the ten threats as officially cautioned by the High-level Panel on Threats, Challenges and Change of the United Nations. Environmental Degradation has been defined by the United Nations International Strategy for Disaster Reduction as the reduction of the capacity of the environment to meet social and ecological objectives and needs. <Choudhary, M. P., Chauhan, G. S., & Kushwah, Y. K. (2015)>

Another vital cause of environmental degradation is pollution, which has its origin in a variety of sources like vehicle emissions, agricultural runoff, accidental chemical release from the factories etc. The term "pollution" has been derived from the Latin word '*pollutionem*' which means defilement and thus, defilement of the environment is called environmental pollution. Thus we can see that modern urbanization, industrialization, over-population, deforestation etc have resulted in environmental pollution. The waste products, smoke emitted by vehicles and industries results in environmental pollution. Thus, environmental pollution covers within its domain any substance or activity which is capable to damage or injury thereby lowering the environmental quality.

We have already studied in the above paragraph that different kinds of human activities leads to environmental degradation. The smoke emitted by the vehicles and factories increases the amount of poisonous gases in the air thereby leading to air pollution. Also, in the urban areas the population is increasing at a very rapid pace. This unplanned urbanization and industrialization has resulted in water, air and sound pollution. Air pollution is caused by the smoke emitted by the increasing number of vehicles and industries. Moreover, sound pollution is also caused by vehicles, loudspeakers, mills etc. Thus, we can understand that as a result of a growing population, there has been excessive use of natural resources, which

resulted in the over-consumption of the natural resources, which in turn has resulted in an imbalance of the environment. Thus, different factors like deforestation, overuse of pesticides, chemical fertilizers and insecticides, congested housing or unmanaged urbanization, industrialization and production of litters and sewages are some of the vital reasons which cause environmental degradation. <,Tyagi, S., Garg, N., &Paudel, R. (2014)>.

Thus, the discussion highlights various causes of environmental degradation, including urbanization, population growth, rising energy consumption, economic expansion, agricultural intensification, and increased transportation..

As discussed above, a primary cause of environmental degradation is rapid population growth. This increasing population, coupled with environmental deterioration, poses a challenge to sustainable development.

The rapid population growth impacts the environment through the expansion and intensification of agriculture, the uncontrolled growth of urbanization and industrialization and the destruction of natural habitats. This growing trend of population has put tremendous pressure on the environment through consequent demand for foods, energy, housing facilities, land extensification at the cost of forests, etc. Moreover, the demand for food could not be increased substantially. As a result, various practices like the use of fertilizers, pesticides, herbicides etc have been done which in turn caused environmental degradation. We know that population is an important source of development but when it exceeds the threshold limits of the support systems, it adversely affect the environment. Unless a proper balance is restored between the growing population and the life support system, the developmental programmes howsoever innovative are not likely to produce the desired results. (Ray, S., & Ray, I. A. (2011).

Now the question is how population growth leading to environmental calamities in a large scale? It needs mention here that both population growth and economic development are leading to many serious environmental calamities like heavy pressure on land, land degradation, forests, habitat destruction and loss of biodiversity. As a result, there is air pollution, global warming, climate change, water scarcity and water pollution. Also, it needs mention here that villages lack the opportunities for gainful employment and as a result, people are moving to towns and cities in search of jobs. Thus, mega cities are emerging and the urban slums are expanding and as a result of this unplanned expansion of the cities there has been serious degradation of the urban environment. There has been deterioration of air and water quality, over generation of wastes, the proliferation of slums and undesirable land use changes. (Ray, S., & Ray, I. A. (2011).

Also, desertification and water quality depletion results in environmental degradation. Desertification is the process by which the vegetation in drylands such as grasslands or shrublands decreases and eventually disappears. Various human activities like that of deforestation and the over-exploitation of aquifers, poor agricultural practices and over exploitation of natural resources etc accelerate the process of desertification. Moreover, water quality depletion also directly contributes towards environmental degradation thereby posing significant threat to the ecosystems and the human health.

Stop to Consider:

What is Environment?

The term 'environment' connotes surroundings and it consists of air, water, food, sunlight etc. The term has been explained in

Encyclopaedia Britannica as the entire range of external influence acting on an organism, both the physical and biological and other organism i.e., forces of nature surrounding an individual. Environment consists of three kinds of components which are: non-living component or abiotic component, living or biotic component and energy component. The non-living or abiotic component consists of non-living things like that of soil, air, water etc. The living component consists of flora and fauna which includes man as well. And the energy component includes solar energy, thermo-electrical energy, hydro-electrical energy, nuclear atomic energy etc.

3.4 Consequences of Environmental Degradation

Impact on human health - The most prominent consequence of environmental degradation is that it adversely affects our health. This interaction between human health and the environment has been extensively studied and environmental risks have been proven to significantly impact human health, either directly by exposing people to harmful agents, or indirectly by disrupting life-sustaining ecosystems (Remoundou and Koundouri, 2009).

Climate change - As a result of deforestation, many organisms are on the verge of extinction. Global warming is another consequence of environmental degradation. The temperature of the earth is rising warmer and warmer and as a result the polar icecaps are melting.

Problem of solid waste management - Also, another consequence is the problem of solid waste management in the urban areas. We often come across the street corners piled with trash and the public places despoiled with filth and litter. The rivers and canals are used as garbage dumps. All these are the consequences of environmental degradation. <Tyagi, S., Garg, N., & Paudel, R. (2014)>.

Moreover, environmental degradation also results in population displacement. The UNHCR in the 1993 'State of the World's Refugees', identified four root causes of refugee flows throughout the world and these causes are political instability, economic tensions, ethnic conflict and *environmental degradation*. Many other writers have also thrown light on this aspect. For example, Jacobson (1988) noted that the environmental refugees have become the single largest class of displaced persons in the world. Homer-Dixon (1991) further said that environmental degradation is likely to produce waves of environmental refugees that spill across the borders with destabilizing effects on the domestic order and international relations. The Intergovernmental Panel on Climate Change (IPCC, 1990) noted the fact that the greatest effect of climate change may be on human migration because millions of people are likely to get displaced due to shoreline erosion, coastal flooding and agricultural disruption. We can cite here a quote which explains clearly the phenomena. "It is not antihuman or antisocial to say that too many people can be a problem…..people pollute, and too many people living in an area can degrade that area irrevocably. Immigration at high levels exacerbates our resource and environmental problems. It will leave a poorer, more crowded, more divided country for our children (Lamm and Imhoff, 1985). It needs mention here that since its first official use in 1985 by El-Hinnawi in his United Nations Environment Programme (UNEP) report, the phrase 'environmental refugee' has come into prominence. 'Environmental Refugees' are defined by El-Hinnawi as those people who have been forced to leave their traditional habitat, temporarily or permanently, because of a marked environmental disruption (natural or triggered by people) that jeopardized their existence and seriously affected the quality of their life (El-Hinnawi, 1985). Largely based on the writings of El-Hinnawi (1985),

Jacobson (1988) and Myers (1993, 1995), this fact has more come into prominence. Thus, from the above discussion, it is clear that environmental disasters like floods, droughts and earthquakes are displacing large number of people and it is happening because population density in these regions are increasing rapidly. <Lonergan, S. (1998)>.

Environmental degradation is also posing as a serious threat to the agricultural production. Environmental deterioration such as biodiversity loss and deforestation has concerns for agriculture around the world (Rehman, 2020). Forests are home to approximately 80% of the world's land-based species, as well as 80% of the world's terrestrial biodiversity and are an important source of food, timber, fibre, medicine and Shelter (WWF, 2021). Thus, we see that forests play an essential role in the mitigation of pollution by sinking carbon, preventing global warming and regulating water cycle and soil erosion. <Tan, D., Adedoyin, F. F., Alvarado, R., Ramzan, M., Kayesh, M. S., & Shah, M. I. (2022)>.

Self Asking Question:

'Environmental degradation is posing as a serious threat to the agricultural production' – Discuss.

…….

…….

…….

3.5 Environmental degradation and Preservation

From the above discussion, we have already understood the fact that we need to preserve our environment because our well being is intricately connected with environmental preservation. Also we

have realized earth's fragility and the need to restore and protect its ecological integrity. We can cite here what Elizabeth Johnson who opined that the present moment is marked by a strange paradox: the more we gaze in wonder at earth, the more we realize that human actions are ravaging and deleting the natural world. We need to think today from the angle of sustainable development and need to understand the fact that the capacity of our planet to sustain life has its own limits and it is getting exhausted by the pressures of humankind. As a result, species are disappearing at an alarming rate, the air is getting polluted and becoming a contributing agent to some forms of cancer. Similarly, the water and soil are also getting polluted by various industrial wastes and the overuse of chemicals. Thus, environmental degradation has become a major matter of concern now and now the need of the hour is to restore and sustain Earth. Prof. Charlene Spretnak in her book 'Resurgence of the Real' (1997) has drawn attention on the aspect of a number of beliefs and practices which causes and escalates ecological degradation. Thus, the issue of environmental degradation needs to be tackled with utmost caution and measures must be taken for environmental preservation. This requires that we "adopt patterns of care, production, consumption and reproduction that safeguard Earth's regenerative capacities, human rights and community well-being" (Earth Charter). <Majawa, C>

This concern over environmental degradation and preservation has accelerated at a rapid pace in the past few years as people realized the fact that we receive our nutritional sustenance and access to air, water, land and energy which provides for our needs and comforts, all from the environment. But unfortunately, the increasing human activity in the name of ushering in development, lies at the core of environmental degradation. It needs mention here that in many rural communities around the world, it is the ecosystem that provides

food for the communities and thus their security. Water, fuel, protein sources, shelter and vitamin and mineral sources all arise from the natural world – not a government sponsored entitlement program (Sanjayan, 2006). So, when the eco-system gets disturbed as a result of environmental degradation, these communities face the crisis of loss of food systems and economic opportunities and thus gets entangled in the vicious cycle of poverty. Not only these poor and rural communities, even the industrialized countries are also dependent on the natural systems. <Erickson, C. L. (2012)>.

So, what needs to be done for environmental preservation? Special efforts need to be given for educating the people as well as the local leaders regarding the adverse effects of large population. In order to preserve the forests and to increase green cover, special efforts must be given on afforestation and social forestry programmes. Water pollution is caused by use of chemical fertilizers, pesticides and other wastes. Efforts must be taken towards preventive and curative measures so as to control water pollution. To make people aware of the need of environmental protection, more emphasis should be given on compulsory environmental education. Moreover, the environmental protection should not be a responsibility of government alone, rather, local people and leaders should be encouraged to make sincere and dedicated efforts to eradicate various environmental problems and to take appropriate measures for environmental preservation.

In India, Supreme Court in 2000, directed the cities to implement a comprehensive waste-management programme that would include household collection of the segregated wastes, recycling and composting. However, such a comprehensive programme of the kind as envisioned by the Supreme Court is yet to be implemented properly. We have seen that a large amount of municipal waste simply remains uncollected and these overflowing wastes have

become the significant sources of greenhouse emissions and breeding sites for disease vectors such as flies, mosquitoes, cockroaches, rats and other pests. The most dangerous thing is that even the medical wastes which are theoretically supposed to be controlled by stringent rules are at times dumped with the regular municipal garbage. We know that municipalities in our cities and towns have waste collection employees but their work performance is neither measured nor monitored. However, it needs mention here that in 2011, several Indian cities embarked on waste-to-energy projects of the type as practiced in Germany, Switzerland, Japan etc. <Tyagi, S., Garg, N., &Paudel, R. (2014)>.

It is pertinent to observe here that the conservation of the environmental and biological resources is frequently required as a means of maximizing human welfare in a world of limited resource availability, and the framers of the World Conservation Strategy and the World Commission on Environment and Development (1987) opined that economics can provide significant arguments in favour of conservation of biological resources. <Tisdell, C. A. (Ed.). (2005)>.

We can understand from the above discussion that since 1980s, there has been a fundamental change in the way governments and developmental agencies around the world think about the environment and development. Now-a-days, the economists and planners have realized the fact that economic development which erodes natural resources is not successful in the long run. Developmental programs and strategies need to take into account the state of resources like forests, soils, grasslands, coastal areas, fisheries etc and then only these developmental strategies can yield fruitful results.

3.6 Environmental Degradation and Other Factors: Interconnectedness

Many scholars have drawn interconnections between the concepts of environmental degradation and democracy. Some opined that democracy improves environmental quality, whereas there are others who opined on the contrary. Let us now have a look at these different view-points. For example, Schultz and Crockett (1990) and Payne (1995) opined that the political rights and freedom of information promotes and raises public awareness which ultimately encourages various environmental legislations. It has been contended that as democracy allows free media, environmental problems get better reported in the news and thus get better sorted out. Another argument is that democracies are more responsive to the environmental needs of the public (Kotor and Nikitina 1995). Another argument focuses on the fact that democracies are more likely to comply with the environmental agreements because they respect the rule of law. However, on the other hand, thinkers like Hardin (1968) warn about the hazards of unchecked natural resource exploitations and environmental mismanagement. Similarly, Paehlke (1996) also focused attention on the Dangers for both democracy and the environment and opined that at times, the global environmental problems are not attended to in a timely manner. <Li, Q., &Reuveny, R. (2006)>.

Another connection drawn is between the concepts of poverty and environmental degradation. There is a consensus that poverty is one of the major causes of environmental degradation. It needs mention here that even the Bruntland Commission Report, which is considered as the blue print for environmental conservation, also explicitly stated the fact that poverty is a major cause of various environmental problems and thus, amelioration of poverty is a necessary condition which needs to be fulfilled if we want to

address any environmental issue. Following the similar lines, even Jalal (1993), the Asian Development Bank's Chief of the Environment department said that it is generally accepted that environmental degradation, rapid population growth and stagnant production – all these are closely linked with the fast spread of acute poverty in many countries of Asia. <Duraiappah, A. (1996)>.

Thus, we see that Environmental Degradation is a multi-dimensional concept and thus, many other problems need to get sorted out first if we want to solve the environmental problems.

3.7 Problems concerning Environmental Degradation

We have already studied above that the sources of environmental pollution rather degradation are multi-dimensional. Let us now have a look at some of the major sources of environmental degradation:-

1. Uncontrolled growth of population: Uncontrolled and unplanned population growth is one of the most responsible factor for various environmental problems. Unmindful human activities disturb ecological balance. It is quite natural that more people requires more food, more land for agricultural and habitat purpose. As a result deforestation has increased remarkably. Also, with the increase in population, there has been increase in the number of vehicles and emissions from these vehicles are creating air and noise pollution.

2. Deforestation: The forests are very valuable to mankind as it improves rainfall and allows maximum recharge of ground water and also it provides us with necessary materials and habitat for numerous types of animals. Moreover, forests also provide us with natural medicinal plants which are helpful in curing various diseases. However, with the increase in population, the problem of deforestation came up as there has been conversion of forest land

into agricultural land. This has resulted in the problem of soil erosion. Thus deforestation has resulted in environmental degradation.

3. Industrial Development: In this present era of globalization, economic prosperity is of paramount consideration. As a result, there has been rapid growth of industries which ultimately resulted into enormous exploitation of the natural resources. These industries are emitting toxic gases thereby resulting in air pollution. Moreover, the industrial wastes when not managed properly results into environmental pollution. Thus, the need of the hour is to maintain a proper balance between the industrial development and environmental protection.

4. Unplanned Urbanisation: The migration of population from rural areas to the urban areas in search of jobs and education has resulted in population explosion in the urban areas. This unplanned urbanization has created the problems of proper sanitation, disposal of solid wastes and also it resulted in increase in automobiles, buildings, sewage, smokes, dusts etc. Thus, there has been increase in air, water, land and noise pollution. The problem of proper sanitation has become very acute in the urban areas which are creating hazards to the life of the citizens. When the municipal solid wastes are dumped anywhere, it results in environmental degradation.

5. Technological Development: This is another factor leading to environmental degradation. While bringing in too much of comfort in the life of mankind, there has been tremendous use of modern technology and this indiscriminate use of technology has ultimately deteriorated the environmental quality. Need of the hour is to use eco-friendly technology and the technology which is not eco-friendly need to be stopped immediately.

6. Revolution in the field of Communication: Revolution in the field of Communication has resulted in the increasing use of internet, cellular phones etc. The rays generated from these instruments are very harmful and the excessive use might lead to many diseases.

Some other factors are also there which results in environmental degradation and they are like: lack of environmental awareness, poverty, inadequate management of wastes, failure to control noise pollution, failure to check emission of ionizing radiation, inadequate management of electro-magnetic energy etc.

Stop to Consider:

What is 'Sustainable Development'?

Sustainable Development means meeting the needs of the present without compromising the ability of the future generation to meet their own needs. It is an increasingly used term now-a-days. Sustainable development as a concept and the interdependence of the economy and the environment are increasingly given importance these days around the world by the policy makers. If we look back into the root, we see that the concept actually grew out of the 'limits to growth' debate of the early 1970s, where it was widely discussed whether or not the continuing economic growth would inevitably lead to severe environmental degradation across the world. Thereafter, an apparent resolution to the problem was reached and it was contended that economic development could be sustained indefinitely but only if the development is modified and all the developmental works take into account its ultimate dependence on the natural environment. It needs mention here that the broad concept of sustainable development was first widely publicized by the World Conservation Strategy (IUCN, 1980). Thereafter, the

report of the World Commission on Environment and Development (WCED 1987 – the 'Brundtland Report') and the landmark World Bank paper 'Environment, Growth and Development' (World Bank 1987) also discussed the concept of sustainable development at length.

Self Asking Question:

There is a general consensus that poverty is one of the major causes of environmental degradation. Discuss how.

……

……

……

Check Your Progress:

1. what is Environmental Degradation? What are the major causes of Environmental Degradation?

2. Discuss how does human activities contribute to the problem of environmental degradation.

3. Discuss the measures which can be taken to prevent Environmental Degradation.

4. What are the major sources of environmental degradation?

3.8 Summing Up

From the above discussion, we came to know that now-a-days, environmental degradation is happening at an alarming rate, thereby resulting in various environmental issues like global warming, ozone layer depletion, greenhouse effects, rise in sea water level, improper monsoon etc. It is true that science and technology have

brought immense benefits to us, but at the same time, we are paying a high price for it. These days, every aspect of modern life is touched by science and technology and directly or indirectly, they have brought immense benefits to the human societies. But at the same time, scientific and technical progress has secured an unprecedented growth of man's power in relation to the nature, thereby leading men to encroach heavily on nature. But it must be borne in mind that we cannot and must not exercise all our power over the nature without restrictions because nature has its own limits too. We cannot treat nature as an inexhaustible treasure-house of energy and raw material resources. The nature is a treasure-house for man's care and comforts, and man has got no right to disturb its balance. Thus, there is a need of humanistic approach towards nature so as to preserve the natural resources in the interest of mankind, rationally and humanely. The key to a cardinal solution to these ecological problems lie in the concept of sustainable development, which stipulates that there must be both, economic development as well as environmental protection and both must go hand in hand. Today, much effort has been expanded in the global level to achieve sustainable development through imparting environmental education. Thus, the crying need of the hour is to lay emphasis on the concept of sustainable development so as to get rid of, or to solve to some extent the problem of environmental degradation.

3.9 References and Suggested Readings

- Choudhary, M. P., Chauhan, G. S., & Kushwah, Y. K. (2015, February). Environmental degradation: causes, impacts and mitigation. In *National seminar on recent advancements in protection of environment and its management issues (NSRAPEM-2015)*.

- Ray, S., & Ray, I. A. (2011). Impact of population growth on environmental degradation: Case of India. *Journal of Economics and Sustainable Development*, *2*(8), 72-77.
- Tyagi, S., Garg, N., &Paudel, R. (2014). Environmental degradation: Causes and consequences. *European researcher*, *81*(8-2), 1491.
- Lonergan, S. (1998). The Role of Environmental Degradation in. *Environmental change and security project report*, (4), 4.
- Tan, D., Adedoyin, F. F., Alvarado, R., Ramzan, M., Kayesh, M. S., & Shah, M. I. (2022). The effects of environmental degradation on agriculture: Evidence from European countries. *Gondwana Research*, *106*, 92-104.
- Majawa, C. ENVIRONMENTAL DEGRADATION. *MAINSTREAMING ETHICS IN HIGHER EDUCATION*, 475.
- Erickson, C. L. (2012). Environmental degradation and preservation. *Handbook of International Social Work: Human Rights, Development, and the Global Profession*, 184-189.
- Tisdell, C. A. (Ed.). (2005). *Economics of environmental conservation* (Vol. 1). Edward Elgar Publishing.
- Li, Q., &Reuveny, R. (2006). Democracy and environmental degradation. *International studies quarterly*, *50*(4), 935-956.
- Duraiappah, A. (1996). Poverty and environmental degradation: a literature review and analysis.

- Garg, M., & Singh, M. A. L. V. I. N. D. E. R. (1990). *Environmental degradation* (Vol. 2, p. 119). Ashish Publishing House.
- Tripathi, S. C., (2008). *Environmental Law*. Central Law Publications.
- Pezzey, J. (1992). Sustainable development concepts. *World*, *1* (1), 45.

---×---

UNIT- 4
ECOLOGICAL MODERNISATION

Unit Structure:

4.1 Introduction
4.2 Objectives
4.3 Historical Context and Evolution of Ecological Modernisation
4.4 Key Tenets of Ecological Modernisation
4.5 Strengths of Ecological Modernisation
4.6 Criticisms of Ecological Modernisation
4.7 Summing Up
4.8 References and Suggested Readings

4.1 Introduction

Ecological modernisation (EM) is a theoretical perspective that emerged in the early 1980s as a response to growing environmental concerns. It proposes that economic growth and environmental protection are not necessarily in conflict but can be mutually reinforcing. By integrating ecological considerations into modern industrial and economic systems, societies can transition toward more sustainable development.

4.2 Objectives

After reading this unit you will be able to—

- *trace* the evolution of ecological modernization;
- *discuss* the key tenets of ecological modernization;
- *analyse* the strengths of ecological modernization;
- *examine* the criticisms of ecological modernization.

4.3 Historical Context and Evolution of Ecological Modernisation

Ecological Modernisation emerged in the early 1980s as a response to the growing environmental concerns associated with industrialization, economic growth, and the degradation of natural resources. Primarily European scholars who sought to reconcile economic development with ecological sustainability, offering an alternative to both radical environmentalism and traditional economic growth models, developed it. Unlike earlier environmental approaches that viewed industrialization and capitalism as fundamentally unsustainable, ecological Modernisation proposed that technological innovation, institutional reforms, and market mechanisms could lead to an ecologically sustainable form of economic modernization. To understand the evolution of ecological modernisation, it is essential to examine the historical developments and intellectual influences that shaped this theory.

1. The Environmental Crisis of the 1960s and 1970s

The intellectual and historical roots of ecological modernisation can be traced back to the environmental movements and debates of the 1960s and 1970s. During this period, rapid industrialization, urbanization, and economic growth were accompanied by severe environmental consequences, including pollution, deforestation, biodiversity loss, and resource depletion. The publication of seminal works such as Rachel Carson's Silent Spring (1962) and The Club of Rome's Limits to Growth (1972) highlighted the dangers of unchecked industrialization and raised global awareness about the need for environmental protection.

Governments and international organizations responded to these concerns by introducing strict environmental regulations and command-and-control policies to limit industrial pollution. However, these regulatory approaches were often seen as restrictive and costly, leading to resistance from industries and policymakers. It became increasingly clear that while strict environmental regulations were necessary, they were not sufficient to address the growing ecological crisis. This led to the search for alternative approaches that could integrate environmental concerns into the economic and technological advancement of modern societies.

2. The Emergence of Ecological Modernisation in the 1980s

Against this backdrop, Ecological Modernisation emerged in the early 1980s as a new paradigm that sought to bridge the gap between environmental sustainability and economic development. Scholars such as Joseph Huber, Martin Jänicke, and Arthur P. J. Mol played a crucial role in formulating the initial ideas of Ecological Modernisation. They argued that rather than viewing economic growth as inherently destructive, societies could harness technological innovation, institutional reforms, and market-based policies to achieve both environmental protection and economic prosperity.

Huber, in particular, introduced the idea of a "super-industrial society", where advancements in technology and eco-efficiency could lead to a more sustainable form of industrial development. This marked a departure from earlier environmental theories that called for economic degrowth or radical societal transformation. Instead, ecological modernisation proposed that environmental problems could be solved from within the existing economic and political systems, rather than requiring their overthrow. This pragmatic and reformist approach made ecological modernisation

particularly attractive to policymakers and business leaders, who were looking for ways to balance economic and environmental objectives.

3. The Institutionalization of Ecological Modernisation in the 1990s

By the 1990s, ecological modernisation had gained significant grip in academic circles and policy discussions, particularly in Europe. Several governments, especially in Germany, the Netherlands, and Scandinavian countries, began integrating ecological modernisation principles into their environmental and economic policies. This period saw a shift from strict regulatory frameworks toward market-based environmental policies, including pollution trading schemes (e.g., the European Union Emissions Trading System), eco-taxes and subsidies for renewable energy and cleaner production methods, Voluntary corporate sustainability initiatives that encouraged businesses to adopt eco-friendly practices, etc.

During this period, international organizations such as the United Nations (UN), the Organisation for Economic Co-operation and Development (OECD), and the European Union (EU) also embraced elements of Ecological Modernisation in their environmental and economic policies. The 1992 Earth Summit in Rio de Janeiro was a pivotal moment in global environmental governance, as it introduced the concept of sustainable development, which closely aligned with ecological modernisation's emphasis on integrating economic growth and environmental sustainability.

4. The Expansion of Ecological Modernisation in the 2000s and Beyond

The early 2000s marked the global expansion of Ecological Modernisation, as more countries began adopting green technologies, clean energy initiatives, and sustainable development

policies. The Kyoto Protocol (1997) and later the Paris Agreement (2015) reflected the growing acceptance of Ecological Modernisation principles on an international scale, emphasizing the role of technology, innovation, and market mechanisms in reducing carbon emissions and mitigating climate change.During this period, the corporate sector also became a key driver of Ecological Modernisation. Many multinational corporations recognized the financial and reputational benefits of sustainability, leading to the rise of corporate social responsibility (CSR), environmental, social, and governance (ESG) criteria, and the circular economy model. Companies began investing in green technologies, renewable energy, and waste reduction strategies, aligning their business practices with Ecological Modernisation principles.

However, the global expansion of Ecological Modernisation also revealed some of its limitations. While Ecological Modernisation worked well in industrialized nations with strong governance structures and technological capabilities, it was less effective in developing countries, where economic priorities, weak regulatory frameworks, and resource constraints often hindered environmental reforms. This led to calls for a more inclusive and just approach to sustainability, incorporating elements of environmental justice, intersectionality, and indigenous knowledge systems.

5. The Contemporary Relevance and Critique of Ecological Modernisation

Today, Ecological Modernisation remains a dominant framework in environmental policymaking, particularly in Europe, North America, and parts of Asia. The global push for green growth, climate resilience, and sustainable finance reflects the continued influence of Ecological Modernisation principles. Concepts such as

decarbonization, green infrastructure, and smart cities align with EM's vision of integrating technological innovation and market mechanisms into environmental governance. Despite its widespread acceptance, Ecological Modernisation has faced several criticisms. Critics argue that technological solutions alone cannot address deep-rooted ecological problems, such as biodiversity loss and resource depletion. Ecological Modernisation assumes that market mechanisms will always prioritize sustainability, but in reality, corporate profit motives often conflict with long-term environmental goals. Ecological Modernisation focuses on economic and technological solutions but does not always address the social dimensions of environmental change, such as inequality, displacement, and the disproportionate impact of environmental degradation on marginalized communities. Moreover, while Ecological Modernisation has been successful in industrialized nations, its applicability in developing countries remains questionable due to structural barriers such as poverty, weak governance, and dependence on extractive industries.

The historical evolution of Ecological Modernisation demonstrates how environmental thinking has shifted from regulatory restrictions to market-driven, technology-based solutions. Emerging from the environmental crises of the 20th century, Ecological Modernisation has influenced global policies, corporate strategies, and technological innovations aimed at balancing economic growth with ecological sustainability. While its successes are evident in many countries, its limitations highlight the need for more inclusive, equitable, and systemic approaches to environmental governance. Moving forward, the challenge for Ecological Modernisation will be to adapt to the realities of the climate crisis, biodiversity loss, and socio-economic inequalities. To remain relevant, Ecological Modernisation may need to incorporate intersectional, decolonial,

and post-growth perspectives that emphasize not only technological solutions but also systemic transformations in economic, political, and social structures.

4.4 Key Tenets of Ecological Modernisation (EM)

You have already learnt that Ecological Modernisation is a theoretical framework that emerged in the 1980s in response to growing concerns about environmental degradation. It challenges the traditional view that economic growth and environmental protection are inherently contradictory. Instead, Ecological Modernisation argues that technological innovation, market mechanisms, and institutional reforms can lead to a transition toward sustainability without fundamentally altering the structures of modern industrial societies. By integrating ecological considerations into economic and political processes, Ecological Modernisation suggests that environmental challenges can be addressed within the framework of capitalism, rather than requiring its dismantling. This perspective positions Ecological Modernisation as a reformist approach to sustainability, balancing economic development with environmental responsibility.

One of the foundational principles of Ecological Modernisation is the idea of decoupling economic growth from environmental degradation. Traditionally, industrial expansion has been associated with increased pollution, resource depletion, and ecological harm. However, Ecological Modernisation proposes that with the right technological advancements and regulatory frameworks, societies can achieve economic prosperity while reducing their environmental footprint. This process, known as "decoupling," can occur in two forms: relative decoupling, where economic growth continues but environmental impact increases at a slower rate, and absolute

decoupling, where economic growth occurs while environmental degradation declines. The latter is the ultimate goal of Ecological Modernisation, ensuring that economic progress does not come at the expense of ecological stability.

A central pillar of Ecological Modernisation is the promotion of technological innovation as a means to achieve sustainability. Unlike radical ecological perspectives that view industrialization as the root cause of environmental problems, Ecological Modernisation sees technological advancements as solutions. Innovations in renewable energy, resource-efficient production methods, green chemistry, and waste reduction strategies are seen as essential for minimizing environmental harm while maintaining economic growth. The shift toward cleaner production methods and eco-efficient technologies enables industries to operate more sustainably while remaining competitive in the global market. This technological optimism is a defining characteristic of Ecological Modernisation, reflecting the belief that human ingenuity can resolve ecological crises without necessitating drastic socio-economic transformations.

Another key tenet of Ecological Modernisation is the use of market-based environmental policies to incentivize sustainable practices. Unlike traditional regulatory approaches that impose strict environmental rules, Ecological Modernisation advocates for economic instruments such as carbon trading schemes, green taxes, and subsidies for renewable energy. These mechanisms create financial incentives for businesses and consumers to adopt greener practices voluntarily. For example, carbon trading allows companies to buy and sell emissions permits, encouraging them to reduce their carbon footprint in a cost-effective manner. Similarly, green taxation—such as levies on pollution—motivates industries to develop cleaner alternatives. By integrating environmental concerns

into market dynamics, Economic Modernisation aligns ecological sustainability with economic interests, making sustainability a profitable endeavor rather than a regulatory burden.

The role of the state in environmental governance also undergoes a transformation within the framework of Ecological Modernisation. Instead of functioning solely as an enforcer of environmental laws, the state takes on the role of a facilitator that encourages cooperation between governments, businesses, and civil society. Ecological Modernisation suggests that environmental policies should be flexible, adaptive, and conducive to innovation rather than rigid and punitive. Public-private partnerships, voluntary sustainability initiatives, and corporate social responsibility (CSR) programs are encouraged as alternative means of achieving environmental goals. Governments, rather than imposing top-down regulations, should create conditions that support green entrepreneurship, technological development, and sustainable industrial practices.

In contrast to traditional environmental critiques that portray businesses as primary polluters, Ecological Modernisation argues that corporations and industries can be key drivers of ecological reform. Businesses are encouraged to adopt sustainability strategies not only for ethical reasons but also for economic competitiveness. Practices such as eco-efficiency, waste minimization, and green branding allow companies to enhance their reputation while reducing operational costs. Many corporations now integrate environmental sustainability into their long-term strategic planning, recognizing that sustainability is a market advantage. The shift toward a "green economy," where environmental responsibility and economic profitability coexist, is a crucial aspect of Ecological Modernisation’s vision for the future.

Ecological Modernisation also recognizes the importance of institutional and structural changes in ensuring sustainable

development. Environmental concerns must be embedded into various sectors of governance, including energy, transportation, urban planning, and agriculture. Policies must evolve to reflect ecological priorities while remaining adaptable to changing economic and technological landscapes. Strengthening environmental regulations, integrating sustainability into corporate governance, and fostering cross-sectoral collaboration are essential for achieving long-term environmental goals. Institutions must shift from reactive approaches—where they respond to environmental crises after they occur—to proactive strategies that anticipate and mitigate ecological risks.

A crucial aspect of Ecological Modernisation is its emphasis on civil society and public participation in environmental decision-making. The role of non-governmental organizations (NGOs), advocacy groups, and community movements is recognized as vital in holding businesses and governments accountable for environmental sustainability. Public awareness campaigns, consumer activism, and grassroots initiatives contribute to the broader ecological transition by demanding corporate transparency and sustainable practices. Ecological Modernisation acknowledges that sustainability is not just a matter of state and market actions but also a social and cultural transformation that requires widespread public engagement. When citizens actively participate in environmental governance, it fosters a sense of shared responsibility and accelerates the transition toward a more sustainable society.

Given the global nature of environmental challenges, Ecological Modernisation also emphasizes the need for international cooperation and global environmental governance. Climate change, biodiversity loss, and pollution are transnational issues that require coordinated efforts across nations. Ecological Modernisation advocates for strengthening international agreements such as the

Paris Agreement, facilitating technology transfer to developing countries, and promoting sustainable trade policies. By fostering collaboration among nations, Ecological Modernisation aims to create a global framework for sustainable development, ensuring that environmental progress is not limited to wealthy industrialized nations but extends to all regions of the world.

Despite its optimistic outlook, Ecological Modernisation has faced several criticisms. Some argue that it places too much faith in technological solutions, overlooking the deeper structural and cultural changes needed for true sustainability. Others criticises its market-driven approach, questioning whether capitalism's inherent focus on profit can genuinely prioritize environmental well-being. Additionally, critics argue that Ecological Modernisation often neglects social justice issues, such as environmental inequalities between the Global North and South, or the disproportionate impact of ecological degradation on marginalized communities. The voluntary and incentive-based mechanisms promoted by Ecological Modernisation may also be insufficient in addressing urgent environmental crises that require more drastic and immediate action.

So you have learnt that Ecological Modernisation presents a pragmatic approach to sustainability, emphasizing the compatibility of economic development and environmental protection. By leveraging technological innovation, market-based incentives, and institutional reforms, Ecological Modernisation offers a pathway for societies to transition toward sustainability without fundamentally disrupting their economic systems. While it has been widely influential in shaping environmental policies and corporate strategies, its effectiveness depends on robust governance, strong public engagement, and continuous adaptation to emerging ecological challenges. Whether Ecological Modernisation can fully deliver on its promise remains a topic of ongoing debate, but it

undeniably provides a compelling framework for integrating environmental sustainability into modern industrial societies.

4.5 Strengths of Ecological Modernisation

Ecological Modernisation has gained significant recognition as an environmental approach that seeks to integrate economic growth with ecological sustainability. It offers a pragmatic and reformist alternative to radical environmental perspectives by advocating for technological innovation, market-based policies, and institutional reforms. Unlike traditional environmental approaches that emphasize strict regulatory controls or advocate for economic degrowth, EM suggests that sustainability can be achieved within existing economic and political structures. Below are the major strengths of Ecological Modernisation that contribute to its widespread acceptance and applicability.

1. Reconciliation of Economic Growth and Environmental Sustainability

One of the most compelling strengths of Ecological Modernisation is its assertion that economic growth and environmental sustainability are not necessarily contradictory but can be mutually reinforcing. Unlike earlier environmental discourses that viewed industrialization as inherently destructive, Ecological Modernisation argues that through technological advancements and policy innovations, societies can achieve both economic prosperity and ecological protection.

By advocating for eco-efficiency, where industries optimize resource use and reduce waste, Ecological Modernisation demonstrates that businesses can lower costs while minimizing their

environmental impact. This win-win scenario encourages industries to adopt sustainable practices voluntarily, as they see economic benefits in doing so. The concept of decoupling economic growth from environmental degradation—where economic development occurs without a corresponding increase in pollution and resource depletion—serves as a fundamental pillar of Ecological Modernisation and makes it an attractive model for policymakers.

2. Emphasis on Technological Innovation as a Solution

Ecological Modernisation places strong faith in technological innovation as a driver of environmental sustainability. It suggests that advancements in green technology, renewable energy, and resource-efficient production methods can significantly reduce ecological harm while maintaining industrial productivity. Instead of viewing technology as a contributor to environmental problems, Ecological Modernisation positions it as a key solution. There are certain examples of technological advancements that align with EM principles. These are:-

- **Renewable energy technologies** (solar, wind, hydropower) that reduce dependence on fossil fuels.
- **Energy-efficient industrial processes** that lower greenhouse gas emissions.
- **Circular economy innovations**, such as recycling and biodegradable materials, which minimize waste.
- **Smart cities and green infrastructure**, which optimize urban planning for sustainability.

By fostering research and development in these areas, Ecological Modernisation promotes a proactive rather than reactive approach to environmental management, where societies anticipate and prevent

environmental degradation rather than merely responding to crises after they occur.

3. Encouragement of Market-Based Environmental Policies

Another key strength of Ecological Modernisation is its reliance on market mechanisms to address environmental challenges. Rather than relying solely on strict government regulations, Ecological Modernisation promotes economic incentives that encourage sustainable practices while allowing businesses and individuals to make environmentally responsible choices. The policies like Carbon trading schemes (e.g., the European Union Emissions Trading System) that allow businesses to buy and sell emissions allowances, creating a financial incentive to reduce carbon output, Green taxes that penalize environmentally harmful activities, such as pollution and excessive resource consumption, while rewarding sustainable practices, Subsidies and financial incentives for renewable energy projects and eco-friendly technologies are the examples of market based environmental policies. These policies align economic interests with environmental goals, making sustainability an economically viable option for businesses. Market-driven approaches also encourage competition and innovation, as companies invest in cleaner technologies to reduce costs and gain a competitive advantage.

4. Institutional and Policy Adaptability

Unlike rigid regulatory models, Ecological Modernisation promotes flexible and adaptive governance, making it more responsive to changing environmental and economic conditions. Instead of imposing blanket regulations, Ecological Modernisation encourages governments to act as facilitators by promoting partnerships

between public and private sectors, supporting innovation, and integrating sustainability into long-term policy planning.

Ecological Modernisation recognizes that environmental governance should not be static, but should evolve with technological advancements and scientific understanding. This adaptability makes Ecological Modernisation particularly relevant in the face of emerging challenges such as climate change, biodiversity loss, and resource scarcity. Governments can modify policies based on new scientific data, ensuring that sustainability strategies remain effective and up to date.

Furthermore, Ecological Modernisation encourages multi-level governance, where local, national, and international actors collaborate to achieve environmental goals. This ensures that solutions are tailored to specific regional contexts while contributing to broader global sustainability efforts.

5. Strong Engagement with the Corporate Sector

Unlike radical ecological approaches that see businesses as the root cause of environmental destruction, Ecological Modernisation views industries and corporations as active partners in achieving sustainability. It recognizes that businesses have the financial resources, technological capacity, and operational reach to implement large-scale environmental reforms.

Through Corporate Social Responsibility (CSR), Environmental, Social, and Governance (ESG) frameworks, and voluntary sustainability initiatives, companies are encouraged to integrate environmental considerations into their business strategies. Many corporations now invest in green technologies, sustainable supply chains, and carbon neutrality programs, aligning their operations

with Ecological Modernisation principles. This corporate engagement benefits both the environment and the economy by encouraging businesses to innovate and develop sustainable products that appeal to eco-conscious consumers, reducing costs through resource efficiency and waste minimization, enhancing corporate reputation and brand value, leading to increased consumer loyalty and investor confidence etc.

By promoting an economically viable approach to sustainability, Ecological Modernisation ensures that environmental responsibility is not seen as a financial burden but as an opportunity for growth and competitiveness.

6. Increased Public Participation and Awareness

Ecological Modernisation recognizes that achieving sustainability requires broad societal engagement, including public awareness, education, and participation in environmental governance. Ecological Modernisation encourages collaboration between governments, businesses, and civil society, fostering a culture of shared responsibility for environmental protection.

Through environmental education programs, sustainable consumer movements, and green activism, individuals are empowered to make informed choices that contribute to sustainability. Consumers today have greater awareness of environmental issues and increasingly demand eco-friendly products, prompting businesses to respond with sustainable alternatives.

Additionally, NGOs and advocacy groups play a crucial role in holding corporations and governments accountable for their environmental commitments. By fostering public engagement,

Ecological Modernisation ensures that sustainability efforts are socially inclusive and democratically driven.

7. Global Applicability and Integration with International Policies

Ecological Modernisation has been successfully integrated into global environmental policies, making it a widely accepted framework for addressing sustainability challenges. International agreements such as the Kyoto Protocol (1997), the Paris Agreement (2015), and the UN Sustainable Development Goals (SDGs) align with Ecological Modernisation's principles by emphasizing the role of technology, market mechanisms, and institutional reform in achieving environmental objectives. Governments worldwide have incorporated Ecological Modernisation principles into national policies, such as The European Green Deal, which aims for carbon neutrality by 2050 through sustainable industrial practices, China's Green Development Strategy, which promotes clean energy and eco-friendly urbanization, The United States' Inflation Reduction Act (2022), which provides incentives for renewable energy adoption and emissions reductions etc.

By being flexible and adaptable, Ecological Modernisation has proven to be relevant across different political and economic systems, making it a valuable tool for international cooperation on environmental sustainability.

Ecological Modernisation offers a realistic and pragmatic approach to sustainability, integrating environmental concerns into economic and technological progress. Its strengths lie in its ability to reconcile economic growth with ecological protection, its emphasis on technological innovation and market-based solutions, and its promotion of adaptive governance, corporate engagement, and

public participation. Additionally, its widespread adoption at both national and international levels highlights its effectiveness as a policy framework.

While Ecological Modernisation is not without criticisms, its strengths make it a compelling model for societies seeking to transition toward a more sustainable future without dismantling existing economic structures. Moving forward, the challenge will be to ensure that Ecological Modernisation continues to evolve in response to emerging environmental and social justice concerns, making sustainability not just a technological and economic goal, but also an inclusive and equitable one.

4.6 Criticisms of Ecological Modernisation

Ecological Modernisation has been praised for offering a pragmatic and reformist approach to environmental sustainability by integrating technological innovation, market mechanisms, and institutional reform. However, despite its appeal, the approach has been widely criticized for its over-reliance on technology, market-driven solutions, and failure to address deeper structural and social justice concerns. Critics argue that Ecological Modernisation may be insufficient to tackle the root causes of environmental degradation and may inadvertently reinforce existing inequalities and unsustainable economic models.

1. Over-Reliance on Technology as the Primary Solution

A central criticism of Ecological Modernisation is its strong faith in technological advancements as the key to achieving sustainability. Ecological Modernisation assumes that through innovations such as renewable energy, energy-efficient production methods, and pollution-control technologies, industrial societies can reduce their environmental impact without fundamentally altering their

economic structures. However, critics argue that this reliance on technology ignores fundamental ecological limitsandunderestimates the social and political dimensions of environmental change.

One major issue is the rebound effect (Jevons Paradox), where improvements in efficiency lead to increased consumption rather than overall resource conservation. For example, the development of fuel-efficient vehicles may lead to people driving more, thereby offsetting the intended environmental benefits. Additionally, Ecological Modernisation often promotes technological solutions that require significant infrastructure and financial investments, which can create a dependency on expensive, high-tech solutions rather than encouraging systemic changes in production and consumption patterns. By focusing on technological progress, Ecological Modernisation can create a false sense of security, delaying necessary regulatory and behavioral changes required to address urgent environmental crises.

2. Market-Based Approaches and the Limits of Green Capitalism

Another significant criticism of Ecological Modernisation is its strong reliance on market mechanisms to drive environmental sustainability. Ecological Modernisation assumes that economic incentives, such as carbon trading schemes, green taxes, and corporate sustainability initiatives, can align business interests with environmental protection. While these mechanisms can provide financial motivation for sustainability, critics argue that they fail to challenge the core drivers of environmental destruction—capitalism's focus on continuous economic growth and profit maximization.

One of the key concerns is the commodification of nature, where environmental resources such as clean air, forests, and biodiversity are treated as economic assets rather than as essential components of life that must be preserved for their intrinsic value. Policies such as carbon trading allow companies to buy pollution credits instead of actually reducing their emissions, leading to green washing—where businesses appear environmentally responsible without making meaningful changes. Additionally, market-based approaches often favourwealthy corporations and nations, as they have greater financial resources to invest in green technology, while smaller businesses and developing countries struggle to keep up with these sustainability standards.

3. Failure to Address the Root Causes of Environmental Degradation

A fundamental critique of Ecological Modernisation is that it does not challenge the economic and political structures that drive environmental destruction. The Ecological Modernisation perspective assumes that sustainability can be achieved within existing industrial and capitalist systems, rather than questioning whether these systems themselves are inherently unsustainable. Critics argue that infinite economic growth on a finite planet is impossible, and that Ecological Modernisation does not address the fact that modern economies rely on overconsumption, resource depletion, and waste generation.

Ecological Modernisation largely focuses on making industrial processes cleaner and more efficient, but it does not significantly address reducing overall material and energy consumption. This is particularly problematic in high-income countries, where consumption patterns far exceed what is ecologically sustainable.

The Degrowth Movement argues that instead of simply improving eco-efficiency, societies need to fundamentally reduce economic activity and material throughput to live within planetary boundaries. By avoiding these difficult conversations, critics argue that Ecological Modernisation offers a superficial fix rather than a transformative solution to environmental crises.

4. Social and Environmental Justice Concerns

Ecological Modernisation has also been criticized for failing to incorporate social justice and equity considerations into its framework. The approach tends to prioritize technological and economic solutions while overlooking the ways in which environmental problems disproportionately affect marginalized communities, especially in the Global South.

One major issue is the unequal distribution of environmental benefits and burdens. While Ecological Modernisation promotes clean energy, eco-friendly industries, and green urban planning, these advancements often benefit wealthy nations and corporations while shifting environmental harms onto poorer communities. For example, large-scale renewable energy projects such as hydropower dams and biofuel plantations have led to the displacement of Indigenous and rural communities, raising ethical concerns about the fairness of such “green” initiatives.

Additionally, Ecological Modernisation’s emphasis on corporate and governmental decision-making often results in top-down environmental policies, where local communities have little say in the sustainability measures that directly affect them. Environmental justice advocates argue that true sustainability requires democratic participation, ensuring that policies do not merely serve corporate

interests but also prioritize social well-being and ecological integrity.

5. Challenges in Implementation for Developing Countries

While Ecological Modernisation has been widely adopted in industrialized nations, its applicability in developing countries remains highly questionable. Many of the technological and market-based solutions proposed by Ecological Modernisation require significant financial investment, stable governance structures, and institutional capacity—conditions that are often lacking in many parts of the Global South.

Developing countries face greater economic constraints, making it difficult for them to transition to green technologies without external financial and technical assistance. Moreover, many economies in the Global South rely on natural resource extraction (such as mining, logging, and fossil fuel industries) for economic growth, meaning that adopting Ecological Modernisation policies could lead to economic instability and job losses. Without mechanisms to support just transitions, sustainability efforts risk deepening global inequalities by forcing poorer nations to bear the costs of environmental reforms without adequate compensation or support.

Additionally, weak environmental regulations and corruption in many developing countries make it difficult to enforce Ecological Modernisation policies effectively. This raises concerns about whether market-driven sustainability measures can truly function in economies where profit-driven interests often outweigh environmental priorities.

6. Green washing and Corporate Manipulation

Another significant concern regarding Ecological Modernisation is the **risk of green washing**, where businesses and governments claim to be taking environmental action while continuing unsustainable practices. Since Ecological Modernisation largely relies on voluntary corporate participation and self-regulation, there is little guarantee that companies will implement sustainability measures beyond what is financially beneficial to them?

Many corporations engage in token sustainability efforts, such as eco-labeling, carbon offset programs, and green marketing campaigns, without making meaningful changes to their production processes. For example, fossil fuel companies often promote investments in renewable energy while simultaneously expanding oil and gas extraction. Without strong government regulations and independent oversight, Ecological Modernisation's market-based approach can be easily manipulated by powerful corporate actors, leading to minimal real-world impact.

7. Limited Scope in Addressing the Climate Crisis and Biodiversity Loss

While Ecological Modernisation provides valuable tools for incremental environmental improvements, critics argue that it does not go far enough in addressing planetary-scale crises, such as climate change, biodiversity loss, and ecosystem collapse. The slow adoption of renewable energy, the continued reliance on fossil fuels, and the destruction of natural ecosystems suggest that technological fixes and market solutions alone are not sufficient to prevent catastrophic environmental breakdown.

In particular, Ecological Modernisation's focus on industrial sustainability does not adequately prioritize nature-based solutions,

such as reforestation, conservation, and regenerative agriculture. Scientists argue that simply making industries cleaner is not enough—societies must actively restore and protect ecosystems to maintain planetary stability. By prioritizing economic efficiency over ecological preservation, Ecological Modernisation risks failing to address the full scope of environmental challenges.

While Ecological Modernisation offers a pragmatic approach to integrating sustainability into industrial societies, it faces significant criticisms regarding its over-reliance on technology, market-based solutions, and corporate-led initiatives. Critics argue that Ecological Modernisation fails to challenge the structural causes of environmental degradation, such as overconsumption and the pursuit of infinite economic growth. Additionally, its approach often excludes social justice concerns, placing disproportionate environmental burdens on marginalized communities and developing countries.

To be truly effective, Ecological Modernisation would need to incorporate stronger regulatory frameworks, ensure equitable distribution of environmental benefits, and promote deeper systemic transformations beyond technological fixes. Without these changes, critics argue that EM risks becoming a superficial sustainability model that reinforces, rather than resolves, the global environmental crisis.

Stop to Consider:

Ecological Modernisation in Practice:

Several policies and initiatives reflect ecological modernisation principles:

- **Circular Economy Models:** Many countries are adopting circular economy strategies, where waste is minimized, and materials are reused or recycled.
- **Renewable Energy Transition:** Investments in wind, solar, and hydroelectric power align with EM's emphasis on technological solutions to environmental issues.
- **Sustainable Urban Development:** Smart cities, green infrastructure, and eco-friendly transportation systems illustrate how EM can be applied in urban planning.

Check Your Progress:

1. Trace The Growth Of Ecological Modernization.
2. Who introduced the idea of a “super-industrial society”?
3. Write down the major tenets of ecological modernisation.
4. Define the idea of decoupling.
5. Mention the strengths of ecological modernisation.
6. Give one example of Circular economy innovations.
7. What is The European Green Deal?
8. Analyse the criticisms leveled aginst ecological modernisation.
9. What is The Degrowth Movement?
10. What is The United States’ Inflation Reduction Act (2022)?

Self-Asking Question:

Do you think the non-governmental organizations (NGOs), advocacy groups, and community movements is recognized as vital in holding businesses and governments accountable for environmental sustainability? Examine.

……

……

……

4.7 Summing Up

Ecological modernisation presents a balanced approach to addressing environmental challenges by leveraging economic and technological advancements. While it has been widely adopted in policy and industry, its effectiveness depends on robust regulatory frameworks, genuine corporate commitment, and the willingness of societies to integrate sustainability into all aspects of life. As climate change and resource depletion continue to challenge global development, Ecological Modernisation remains a relevant but debated framework for achieving a sustainable future.

4.8 References and Suggested Readings

- Mol, A. P., &Spaargaren, G. (2000). Ecological modernisation theory in debate: A review. *Environmental politics*, *9*(1), 17-49.
- Murphy, J. (2000). Ecological modernisation. *Geoforum*, *31*(1), 1-8.
- Barry, J. (2003). Ecological modernisation. In *Environmental thought* (pp. 191-214). Edward Elgar Publishing.

---×---

UNIT- 5

ECOLOGICAL CITIZENSHIP

Unit Structure:

5.1 Introduction
5.2 Objectives
5.3 Defining Ecological Citizenship
5.4 Andrew Dobson's Contribution to Ecological Citizenship
5.5 Key Features of Ecological Citizenship
5.6 Theoretical Foundations of Ecological Citizenship
5.7 Ecological Citizenship in Practice
5.8 Challenges and Criticisms of Ecological Citizenship
5.9 Ecological Citizenship and the Global South
5.10 Summing Up
5.11 References and Suggested Readings

5.1 Introduction

In an era of accelerating environmental crises—ranging from climate change to biodiversity loss and pollution—the idea of citizenship has been undergoing significant transformation. Traditional notions of citizenship have largely focused on civil, political, and social rights within the boundaries of the nation-state. However, with the recognition of global ecological interdependence and environmental justice, a new model has emerged: ecological citizenship. This concept expands the scope of citizenship to include duties and responsibilities toward the environment and future generations, challenging the anthropocentric and state-centric frameworks of conventional citizenship. This unit will help you understand the concept of ecological citizenship.

5.2 Objectives

After reading this unit you will be able to—

- *understand* the concept of ecological citizenship;
- *know*Andrew Dobson's Contribution to Ecological Citizenship;
- *analyse* the key features of ecological citizenship;
- *examine* the theoretical foundations of ecological citizenship;
- *discuss* the ecological citizenship in practice;
- *describe* the criticisms of ecological citizenship;
- *examine* the relationship between ecological citizenship and the global south.

5.3 Defining Ecological Citizenship

Ecological citizenship is a concept that shifts the focus of what it means to be a "citizen" in today's world—especially in the face of growing environmental challenges like climate change, pollution, and resource depletion. Traditionally, citizenship has been understood as a relationship between an individual and the nation-state, mainly based on legal rights, such as the right to vote, and civic duties, like paying taxes or following laws.

However, ecological citizenship goes beyond these legal and political ideas. It introduces a new kind of responsibility—one that focuses not just on our rights as citizens, but on our ethical obligations to the environment, to other people around the world, and to future generations who will inherit the planet. Ecological citizenship emphasizes on the following things:-

- **Environmental Stewardship:** This means caring for and protecting the natural environment. Ecological citizens are expected to act as caretakers of nature, making choices that help preserve ecosystems, biodiversity, and natural resources.
- **Intergenerational Justice:** This is the idea that we owe a responsibility to future generations. Our actions today—especially in terms of how we use or damage natural resources—will affect the quality of life for people who come after us. Ecological citizenship requires us to think long-term and ensure we're not leaving behind a damaged planet.
- **Global Accountability:** Environmental problems don't respect national borders. Pollution, climate change, and biodiversity loss are global issues, and ecological citizenship demands that we take responsibility not just for our own local environment, but also for how our actions may affect people and ecosystems in other parts of the world.
- **Sustainable Living:** This involves making lifestyle choices that reduce harm to the planet—such as using less energy, recycling, consuming less, and supporting sustainable practices. It's about living in a way that doesn't deplete natural resources or harm the environment.

In short, ecological citizenship redefines what it means to be a good citizen in a time of environmental crisis. It's not just about following the law or voting in elections—it's about recognizing your moral duty to protect the planet, live sustainably, and think globally and intergenerationally.

Moreover, ecological citizenship is deeply ethical and relational. It is concerned not only with justice among people but also with justice between humans and the natural world, and between current and future generations. It encourages individuals to recognize their interconnectedness with ecosystems and to adopt a sense of moral obligation toward preserving the Earth's ecological balance.

In this way, ecological citizenship challenges anthropocentric (human-centered) views and introduces a more ecocentric perspective—where the well-being of the planet is not secondary to human progress, but integral to it. It also compels a rethinking of civic identity, from one based on legal documents and state loyalty to one rooted in ecological awareness, planetary ethics, and global solidarity.

Ultimately, defining ecological citizenship is not just about introducing new responsibilities; it is about reimagining the very nature of citizenship in a time of ecological crisis. It positions environmental sustainability not as a peripheral concern, but as a central pillar of what it means to be a good citizen in the 21st century.

5.4 Andrew Dobson's Contribution to Ecological Citizenship

British political theorist Andrew Dobson is widely regarded as the pioneer of the concept of ecological citizenship. His work has been instrumental in moving discussions about citizenship beyond traditional frameworks rooted in rights, nation-states, and legal obligations, toward a more ethically grounded, environmentally conscious model suited for an era of ecological crisis.

Dobson introduced ecological citizenship as a transformative rethinking of civic identity and responsibility, especially in the context of climate change, biodiversity loss, and global environmental degradation. Unlike conventional models of citizenship—which emphasize voting, obeying laws, and national loyalty—Dobson's ecological citizenship is non-territorial, obligation-centered, and deeply intergenerational. It focuses on what individuals ought to do for the planet and future generations, not just what rights they are entitled to.

One of Dobson's most influential arguments is that ecological citizenship should be based on justice rather than charity, and obligations rather than entitlements. In his view, environmental harm—particularly climate change—is often caused by actions in one part of the world but disproportionately affects people in other regions, especially in the Global South. Therefore, ecological citizenship must transcend national borders and involve global ethical responsibilities, such as reducing one's carbon footprint, supporting environmental justice, and altering consumption patterns.

Dobson also criticises what he calls "environmental citizenship", a more mainstream version focused on activities like recycling or voting for green policies. He sees this as insufficiently radical and often reformist, because it doesn't fundamentally challenge the structures of consumerism, capitalism, or ecological injustice. In contrast, ecological citizenship, in Dobson's formulation, demands deeper lifestyle changes and a stronger sense of responsibility to others—both human and non-human, present and future.

Another key aspect of Dobson's contribution is his emphasis on non-contractual duties. He argues that ecological citizenship does not rely on mutual agreements or state enforcement, but instead stems from a moral duty to reduce harm and live sustainably, regardless of whether others do the same. This idea challenges

classical liberal notions of citizenship and introduces a more ethical and cosmopolitan vision of civic life in a globalized, environmentally fragile world.

From the above discussion it can be summarised that Andrew Dobson's ecological citizenship is a bold and ethically grounded alternative to traditional citizenship models. It calls for global, non-territorial, obligation-based civic responsibility, rooted in ecological justice and sustainability. His work has not only shaped academic debates in political theory and environmental ethics but also influenced broader conversations around climate justice, sustainable development, and global responsibility in the 21st century.

5.5 Key Features of Ecological Citizenship

Ecological citizenship is characterized by a set of ethical, non-territorial responsibilities that emphasize environmental stewardship, sustainability, and justice across both space and time. Unlike traditional citizenship, which focuses on legal rights and national identity, ecological citizenship is grounded in the moral duty to reduce ecological harm and promote the well-being of current and future generations, regardless of geographical borders. The important features of ecological socialism can be summarised as follows:-

1. Responsibility over Rights

A central feature of ecological citizenship is its emphasis on responsibility rather than rights. Traditional models of citizenship often focus on the rights individuals have—such as the right to vote, freedom of speech, or access to education. In contrast, ecological citizenship places a stronger focus on the duties and moral responsibilities individuals and communities have toward the environment. This shift means that being a good citizen is not only

about claiming rights from the state but also about actively reducing environmental harm, making ethical consumption choices, and considering the ecological consequences of one's everyday actions. It encourages people to think not just about what they are entitled to, but about how their actions affect others and the planet.

2. Beyond the State

Ecological citizenship challenges the idea that citizenship is tied strictly to the nation-state. Environmental issues such as climate change, ocean pollution, and deforestation are global problems that cross national borders. Therefore, ecological citizenship is described as non-territorial or transnational. It recognizes that individuals have obligations that extend beyond their own country to the global community and ecosystems as a whole. This perspective encourages citizens to think globally and to act in ways that benefit not only their own nation but also people and environments in other parts of the world—especially those who are most vulnerable to ecological degradation.

3. Intergenerational Justice

Another important element of ecological citizenship is the principle of intergenerational justice. This concept highlights the responsibility of current generations to consider the well-being of future generations. Our actions today—how we use natural resources, how we manage waste, and how we treat the planet—will have long-term consequences. Ecological citizens are expected to adopt a long-term perspective, making decisions that do not compromise the ability of future generations to meet their own needs. This means advocating for sustainable practices and resisting short-term exploitation of nature for immediate gain.

4. Participation and Activism

Ecological citizenship is not just about personal responsibility; it also involves active participation in environmental causes and decision-making. This includes engaging in environmental activism, joining community initiatives, supporting green policies, or campaigning for climate justice. It encourages people to move beyond passive roles and become active agents of change, pushing for systemic transformation that supports environmental sustainability. Participation can happen at various levels—local, national, or global—and is often focused on collective solutions and environmental democracy.

5. Everyday Life as Political

One of the most transformative ideas within ecological citizenship is that everyday life is political. This means that seemingly simple, daily choices—like what we eat, how we travel, what we buy, and how we dispose of waste—have broader political and ecological significance. Ecological citizenship encourages people to view these decisions not as private acts, but as ethical and political practices that shape environmental outcomes. By making conscious, sustainable choices, individuals exercise their citizenship in meaningful ways, even outside formal political spaces like voting booths or public offices.

5.6 Theoretical Foundations of Ecological Citizenship

Ecological citizenship is grounded in several interrelated theoretical traditions that help shape its core ideas and ethical commitments. These foundations provide a deeper understanding of whyecological

citizenship matters, how it differs from traditional citizenship, and what principles guide the responsibilities it entails.

- **Environmental Ethics**

One of the key foundations of ecological citizenship is environmental ethics, a branch of philosophy that explores the moral relationship between humans and the natural world. Traditional ethics often prioritize human interests, but environmental ethics challenges this view by asking whether non-human life—animals, plants, ecosystems—also deserves moral consideration. This perspective shifts ecological citizenship away from being strictly human-centered (anthropocentric) to more eco-centric, where all forms of life are valued. It supports the idea that citizens have ethical duties not just to other humans, but also to the planet and its ecosystems.

- **Green Political Theory**

Green political theory provides another important framework. It critiques the dominant political and economic systems—particularly capitalism and industrialism—that prioritize endless growth and consumerism, often at the cost of environmental degradation. Green theory calls for a rethinking of key political concepts like justice, democracy, and freedom in ecological terms. For ecological citizenship, this means promoting democratic participation in environmental decision-making, ensuring environmental justice, and advocating for policies that respect ecological limits. It also promotes the idea of sustainability as a political value, encouraging citizens to align their actions with long-term environmental goals.

- **Ecofeminism**

Ecofeminism is a perspective that links the exploitation of nature with the oppression of women, arguing that both stem from similar systems of domination—especially patriarchy and capitalism. Ecofeminists highlight how women, especially in the Global South,

often bear the brunt of environmental degradation while also playing key roles in environmental protection. Ecofeminism brings a gendered lens to ecological citizenship, emphasizing care, relational ethics, and the importance of community-based knowledge. It enriches ecological citizenship by reminding us that social justice and environmental justice are deeply connected.

- **Postcolonial and Global Justice Theories**

Ecological citizenship also draws from postcolonial theory and global justice frameworks, which focus on the historical and structural inequalities between the Global North and South. These perspectives reveal how countries in the Global North have historically consumed more natural resources and produced more pollution, while people in the Global South often suffer the most from environmental harm. Ecological citizenship informed by these theories promotes a sense of global accountability and equity. It argues that wealthier nations and individuals have greater responsibilities to reduce their ecological footprints and support those most affected by environmental injustices.

- **Cosmopolitanism and Post-Cosmopolitanism**

Traditional cosmopolitanism promotes the idea that all human beings belong to a single global community. While this idea supports global cooperation, ecological citizenship is better aligned with post-cosmopolitanism, as described by theorists like Andrew Dobson. Post-cosmopolitanism recognizes that while we are globally connected, our responsibilities are asymmetrical—some people and nations have contributed more to ecological harm and therefore bear more responsibility. This view emphasizes ethical obligations that transcend national borders, advocating for global ecological justice without assuming that everyone shares equal responsibility or capacity to act.

You have learnt that ecological citizenship is not a standalone concept. It is deeply rooted in diverse and critical theories that challenge dominant views of politics, ethics, and justice. By drawing from environmental ethics, green political thought, ecofeminism, postcolonial theory, and global justice, ecological citizenship reimagines the role of individuals and communities as ethical, engaged, and globally-minded stewards of the Earth.

5.7 Ecological Citizenship in Practice

While the idea of ecological citizenship is often discussed in theoretical terms, its practical application is essential for addressing today's complex environmental challenges. Putting ecological citizenship into practice means translating the principles of environmental responsibility, sustainability, and justice into concrete actions, behaviors, policies, and movements. It involves individuals, communities, institutions, and even governments reimagining their roles in relation to the environment, not just as users of natural resources, but as ethical stewards of the planet.

- **Everyday Ethical Choices**

At the individual level, ecological citizenship is practiced through daily lifestyle decisions that reflect an awareness of one's ecological footprint and global responsibility. This includes choices like reducing waste, conserving energy, eating locally or sustainably, using public transport or cycling, and supporting ethical and eco-friendly businesses. However, what distinguishes these actions as *ecological citizenship* rather than simply green consumerism is the motivating ethic of care and justice—the idea that these actions are not just personal preferences, but moral obligations toward others and the environment. For example, someone may choose to reduce

meat consumption not just for health reasons, but out of concern for climate change, animal welfare, and global food equity.

- **Political Engagement and Advocacy**

Ecological citizenship also takes form through active political engagement. Citizens may advocate for stronger environmental policies, participate in climate marches, engage in environmental education, or join grassroots movements and non-governmental organizations (NGOs). Movements like Fridays for Future, Extinction Rebellion, and climate justice campaigns led by youth, Indigenous peoples, and marginalized communities around the world are all examples of ecological citizenship in action. These movements aim not only to raise awareness but to challenge existing power structures, demand accountability from polluters, and influence policy decisions at local, national, and global levels.

- **Community-Based Practices**

In many contexts, especially in the Global South, ecological citizenship is practiced collectively at the community level. This includes local initiatives such as community forestry, rainwater harvesting, permaculture, seed saving, and cooperative farming. These practices often blend traditional ecological knowledge with contemporary sustainability strategies, and reflect a deep sense of interdependence between community well-being and environmental health. By managing resources collectively and equitably, such communities demonstrate a form of ecological citizenship that is embedded in place, culture, and social relationships, rather than individual consumption alone.

- **Institutional and Educational Roles**

Educational institutions, civil society organizations, and even businesses can also be important sites of ecological citizenship. Schools and universities, for instance, can foster ecological awareness through environmental education, critical thinking, and

service-learning programs that encourage students to take responsibility for ecological issues in their communities. Similarly, NGOs often play a key role in enabling citizen participation in environmental governance, particularly in contexts where state institutions may be weak or unresponsive. Responsible businesses may adopt sustainability principles, involve stakeholders in environmental decision-making, and support community-based conservation efforts—contributing to a broader culture of ecological responsibility.

- **Structural Change and Policy Advocacy**

Importantly, ecological citizenship in practice goes beyond individual behavior to include systemic change. Many ecological citizens advocate for structural transformations in areas like energy, transportation, food systems, and urban planning. This could involve supporting renewable energy transitions, fighting for climate reparations, or demanding just and inclusive environmental policies. Here, ecological citizenship becomes a collective political force that addresses the root causes of ecological degradation—such as overconsumption, fossil fuel dependence, and environmental injustice—rather than just mitigating their effects.

Therefore it can be said that Ecological citizenship in practice is a multifaceted, dynamic process that manifests through ethical lifestyle choices, civic activism, community stewardship, and systemic advocacy. It reflects a deep commitment to environmental justice, sustainability, and global solidarity. Whether expressed through local initiatives or global movements, individual actions or collective efforts, ecological citizenship involves a reorientation of our responsibilities—not only toward the environment, but toward each other and the future of the planet. Practicing ecological citizenship means recognizing that caring for the Earth is not

optional or extra—it is a core duty of being a citizen in the 21st century.

5.8 Challenges and Criticisms of Ecological Citizenship

While the concept of ecological citizenship presents a visionary framework for rethinking civic responsibility in the age of environmental crisis, it is not without significant challenges and criticisms. These critiques come from various academic, political, and practical perspectives, highlighting the complexities involved in making ecological citizenship a meaningful and actionable part of contemporary life. The following are the criticisms of ecological citizenship:-

- **Ambiguity and Lack of Clear Definition**

One of the most common criticisms of ecological citizenship is its conceptual vagueness. The term can be interpreted in many different ways—ranging from personal lifestyle changes to political activism or global environmental governance. This lack of clarity makes it difficult to define who qualifies as an ecological citizen, what their duties are, and how ecological citizenship can be implemented or measured in practice. Without a clear structure or set of criteria, the concept can become too idealistic or abstract to guide real-world action or policymaking.

- **Overemphasis on Individual Responsibility**

Critics also argue that ecological citizenship places too much burden on individuals, often promoting the idea that environmental problems can be solved through personal choices—like recycling, eating less meat, or reducing energy use. While these actions are important, they can distract attention from systemic issues such as corporate pollution, unsustainable development models, or weak environmental regulations. This "individualization of responsibility"

can let powerful actors—like states and multinational corporations—off the hook, even though they contribute disproportionately to ecological harm.

- **Socioeconomic Inequality and Uneven Capacity to Act**

Another major challenge is that not everyone has the same capacity to practice ecological citizenship. People living in poverty or in marginalized communities may not have access to green technologies, sustainable products, or environmentally friendly infrastructure. Expecting all individuals to make environmentally responsible choices without addressing social and economic inequalities risks creating an elitist model of citizenship, where only the privileged can afford to "live green." This raises questions of justice and inclusivity within the ecological citizenship framework.

- **Weak Political and Legal Recognition**

Unlike traditional citizenship, which is backed by legal frameworks, rights, and institutional structures, ecological citizenship often lacks formal political recognition. There are few, if any, laws or institutions that define or enforce ecological duties at the citizen level. This limits the power and reach of ecological citizenship, making it largely symbolic or voluntary. Without stronger legal backing or institutional support, it’s difficult to scale up ecological citizenship to effect meaningful change at a national or global level.

- **Cultural and Political Resistance**

Ecological citizenship also faces cultural and political resistance, particularly in societies where environmentalism is viewed with scepticism or where consumerism and economic growth are deeply embedded values. In many contexts, environmental concerns may be seen as secondary to jobs, economic security, or national sovereignty. Promoting ecological responsibilities in such environments can be met with opposition or indifference, limiting

the practical appeal and adoption of ecological citizenship, especially when it challenges deeply rooted habits or norms.

- **Global versus Local Tensions**

Another criticism relates to the tension between global obligations and local identities. Ecological citizenship asks people to think and act globally—considering how their actions affect ecosystems and people in distant places. However, many individuals still identify strongly with their nation, culture, or community. Asking citizens to adopt a non-territorial, global perspective may conflict with their sense of belonging or with local interests, creating tensions between global ecological ethics and local political realities.

Now you have learnt that Ecological citizenship is a powerful idea for reimagining the role of individuals in addressing environmental challenges, but it faces real-world theoretical, practical, and political challenges. It needs clearer definitions, more equitable approaches, institutional support, and strategies to bridge the gap between global ideals and local realities. Without addressing these criticisms, the transformative potential of ecological citizenship risks being reduced to an appealing but unrealized ideal.

5.9 Ecological Citizenship and the Global South

The idea of ecological citizenship has important implications for the Global South, where environmental issues intersect deeply with historical inequalities, poverty, and struggles for social justice. While ecological citizenship encourages all individuals and communities to take responsibility for protecting the environment, applying this concept in the Global South raises critical questions about fairness, feasibility, and global accountability.

- **Historical and Structural Inequalities**

One of the most important considerations in the Global South is the legacy of colonialism and economic exploitation, which has shaped environmental degradation and underdevelopment in many regions. Countries in the Global South have contributed far less historically to problems like climate change, yet they often bear the worst impacts—such as droughts, floods, deforestation, and loss of biodiversity. Therefore, asking individuals or communities in the Global South to adopt the responsibilities of ecological citizenship must be approached with an understanding of global environmental injustice. It is ethically problematic to demand equal ecological duties from countries and populations who have not equally contributed to the crisis.

- **Challenges of Poverty and Basic Needs**

In many parts of the Global South, large populations face pressing challenges like poverty, food insecurity, lack of clean water, and inadequate access to energy or healthcare. In these contexts, environmental responsibility often takes a back seat to meeting basic survival needs. Ecological citizenship, which often includes expectations of sustainable living or green consumption, can feel like a luxury that the poor cannot afford. This makes it essential to reframe ecological citizenship in a way that is relevant to local realities—where environmental care is integrated into efforts to improve livelihoods and ensure human dignity, rather than being seen as a separate or added burden.

- **Environmental Justice and Local Knowledge**

Despite these challenges, the Global South is also home to rich traditions of ecological knowledge and community-based environmental stewardship. Indigenous and rural communities have long practiced sustainable living, conservation, and reciprocal relationships with nature. These practices can and should be

recognized as valid forms of ecological citizenship. In fact, the Global South often offers alternative models of environmental responsibility—rooted in collective care, social solidarity, and respect for ecological limits—that challenge the more individualistic and consumer-based interpretations common in the Global North.

- **Asymmetrical Responsibilities**

Ecological citizenship in the context of the Global South must be grounded in the principle of differentiated responsibility. This means acknowledging that not all citizens or countries have the same capacity or obligation to address environmental issues. Wealthier nations and individuals—especially in the Global North—must take on a greater share of responsibility, not only because they have caused more environmental harm historically, but also because they have more resources and power to act. This includes supporting the Global South through climate finance, technology transfer, capacity building, and fair environmental governance structures.

- **Resistance and Environmental Activism**

Across the Global South, there are vibrant movements of environmental activism and resistance, often led by Indigenous peoples, women, and grassroots communities. These groups fight against extractivism, pollution, land grabs, and environmental injustice, frequently at great personal risk. Their struggles reflect a form of ecological citizenship rooted in defending rights to land, water, and a healthy environment. Far from being passive or disengaged, many in the Global South are actively shaping what ecological citizenship means in their own terms, often blending environmental protection with demands for social justice and political empowerment.

One of the most compelling examples of ecological citizenship in the Global South comes from Indigenous resistance movements in

the Amazon rainforest, particularly in Brazil. The "Guardians of the Forest"—composed largely of Indigenous peoples such as the Guajajara in Maranhão—have taken it upon themselves to defend the Amazon from illegal logging, mining, and land invasions. Often working without state support and at great personal risk, these communities embody ecological citizenship not as a consumer choice or civic duty in the Western sense, but as a way of life deeply rooted in ancestral knowledge, collective identity, and spiritual connection to the land.

Their actions reflect a form of ecological citizenship that is territorially grounded, communitarian, and intergenerational. They protect the rainforest not only for their own survival but for the global ecological balance. Their work aligns with both environmental justice (fighting unequal environmental harm) and climate justice (demanding accountability from those most responsible for climate change).

In contrast, figures like Greta Thunberg—who sparked a global movement through school strikes for climate—represent ecological citizenship from the Global North, often centered on moral protest, policy change, and international media engagement. Thunberg's activism is powerful and important, but it also highlights a contrast: her platform and visibility stem from certain privileges of access, education, and media reach that many activists in the Global South do not have. When we compare these different forms of ecological citizenship, it becomes clear that power, geography, and socio-political context shape how individuals and communities are able to act.

Ecological citizenship in the Global South must be understood in a context of historical injustice, structural inequality, and diverse local realities. While the concept offers valuable insights for global environmental responsibility, it must be applied in a way that is just,

inclusive, and responsive to the specific needs and contributions of Southern communities. Rather than imposing Northern models, ecological citizenship should uplift and learn from the alternative values, practices, and struggles that already exist across the Global South.

Stop to Consider:

Connecting to Development and Gender Frameworks:

Ecological citizenship in the Global South is deeply connected to gender and development frameworks, especially ecofeminism and GAD (Gender and Development). Women—especially rural, Indigenous, and low-income women—are often the primary stewards of natural resources, such as water, forests, and seeds. Yet, they are also disproportionately affected by environmental degradation and climate disasters. Ecofeminism highlights this dual role and critiques systems of patriarchy and capitalism that exploit both women and nature.

From a GAD perspective, promoting ecological citizenship means recognizing and empowering women not only as victims of environmental harm but as agents of change and knowledge holders. Programs that support women-led reforestation, agroecology, and water management initiatives are practical ways to promote ecological citizenship within a gender-just development model.

Check Your Progress:

1. Define the concept of ecological citizenship.
2. Analyze the contribution of Andrew Dobson to ecological citizenship.
3. Examine the key features of ecological citizenship.

4. Explain the theoretical foundation of ecological citizenship.
5. Mention the criticisms levelled against ecological citizenship.

Self-Asking Question:

Do you think colonialism has shaped environmental degradation and underdevelopment? Discuss.

……

……

……

5.10 Summing Up

After reading this unit, you have learnt that Ecological citizenship offers a transformative lens through which to understand the relationship between humans, society, and nature. It invites a shift from rights to responsibilities, from the local to the global, and from passive consumerism to active stewardship. As environmental challenges grow in scale and urgency, fostering ecological citizenship—through education, policy, and activism—becomes not just desirable but essential for the sustainability of life on Earth.

5.11 References and Suggested Readings

- Curtin, D. (2002). Ecological citizenship. *Handbook of citizenship studies*, 293-304.
- Dobson, A. (2006). Ecological citizenship: A defence. *Environmental politics*, *15*(03), 447-451.
- MacGregor, S. (2014). Ecological citizenship. In *Handbook of political citizenship and social movements* (pp. 107-132). Edward Elgar Publishing.

---×---

UNIT- 6

URBANIZATION AND ENVIRONMENT

Unit Structure:

6.1 Introduction

6.2 Objectives

6.3 How the development of urbanization has gradually impacted the environment

6.4 Re-thinking on Environmental Sustainability

6.5 Health hazards caused by uncontrolled urban waste disposal

6.6 Some cases showing the connection of urbanization and environment

6.7 Remedial Measures

6.8 Summing Up

6.9 References and Suggested Readings

6.1 Introduction

In this era of welfare State, utmost importance is given on the concept of 'Sustainable Development', which postulates that there must be both economic development as well as ecological protection. In this present age of globalization and industrialization, economic prosperity is of paramount consideration but at the same time, it is also a fact that it is our basic right to live in a healthy environment. However, unfortunately, today we are facing the problem of environmental degradation and continuing deterioration of the eco-system. Rapid industrialization and urbanization has posed as a serious challenge to the natural environment. As a result of rapid urbanization, density of population has increased

tremendously in the urban areas. Correspondingly human activities also increased which creates wastes and unless and until these wastes are managed properly, it results in environmental degradation. The spate of urbanization has significantly increased in the recent years due to a host of factors like that of rural to urban migration, natural population growth in the urban areas and the expansion of city boundaries. In the developing countries, this trend is more pronounced because economic opportunities and the access to the services in the urban areas has attracted a large number of people in the urban areas. Thus, in this unit, we will make an endeavor to study inentirety the relationship of urbanization and environment.

6.2 Objectives:

This unit deals with urbanization and its effects on the environment. After reading this unit, you will be able to:

- *understand* various trends, promises and Challenges of Urbanization;
- *discuss* the ongoing re-thinking on Environmental Sustainability;
- *discuss* the environmental impacts of urbanization. *Discuss* various remedial measures;
- *understand* the important role of both the legislature and judiciary in bringing about sustainable development.

6.3 How the development of urbanization has gradually impacted the environment

Urbanization brings along with it a lot of promises and also challenges. It must be borne in mind that each day, thousands of

migrants move from rural to urban areas around the world to look for opportunities for a better life. This exodus of people from the rural to urban areas is very widespread and has tremendous impacts on the way we live and work. In 2007, for the first time in history, more than half of the world's population was urban. In 2014, 54% of the world's population lived in the urban areas. Thinkers have pointed out that it is expected to increase by 72 % by 2050. The world is thus transforming itself very rapidly not only in terms of population explosion in the urban areas, but also there has been tremendous growth of the number of cities. This rapid global urbanization has tremendous economic, social and environmental impacts. The challenges of rapid urbanization are more prominent in the developing countries. It has been estimated that 93% of the future urban population growth will occur in the developing countries. However, urban growth patterns are different in the developed and developing worlds. A 2007 UN Survey showed that 88 percent of respondents from the developing world reported that the spatial distribution of urban population is unsatisfactory. <Zhang, X. Q. (2016)>.

So, we have already discussed above the trend of urbanization which can be seen throughout the world. Since 2008, for the first time in the history of planet earth, the number of people living in the urban areas exceeds those residing in the rural areas (United Nations, 2008). It is also important to note that between 1958 and 2009, research has documented specific causes highlighting the connections between human mobility and the environment.(Erway Moriniere, 2009). <Morinière, L. (2012)>.

Urbanization has got a differential impact across various social groups, including women, migrants, the poor and the third gender. It is true that urbanization can help by bringing in various opportunities but at the same time, it also creates challenges that

disproportionately affect these groups. For example, urbanization can lead to increased access to education, health care and employment opportunities for women but at the same time there may be challenges like gender based violence etc. Similarly, it creates economic opportunities for the migrants but there may be the problem of discrimination and social exclusion. For poor, urbanization provides greater access to education, healthcare and employment opportunities but at the same time there are challenges like high cost of living in urban areas, limited access to affordable housing and basic services etc. Urbanization leads to more inclusive society but the problem of discrimination may still persist. Thus, we can say that urbanization can be a catalyst for positive changes but it is crucial to address the various specific needs and challenges of women, migrants, the poor and the third gender.

As mentioned earlier, urbanization comes with certain promises, such as driving economic development and enhancing productivity in cities. It is an inevitable force, with urban areas generally being more productive than rural ones. Effective strategies and policies can significantly impact outcomes. With proper planning and management, many challenges can be addressed efficiently. However, numerous challenges remain, including:

- **Urban Poverty:-** With the rapid urbanization in developing countries, the problem of urban poverty emerged. Urban poverty is the struggle faced by individuals and families in cities who lack the financial stability and essential services needed for a decent life. It means living without secure housing, proper healthcare, education, or steady employment, making everyday survival a challenge. We can find out that in some countries, urban poverty is more significant than in the rural areas.

- **Higher unemployment Rates:-** With the rapid increase in population in the urban areas, there has been a rise in the problem of urban unemployment and increasing poverty, which has forced large numbers of the urban poor into various informal sectors.
- **Adverse Environmental Impacts:-** The most prominent challenge of urbanization is that it has led to the degradation of environmental quality. It has produced various pollutants which have tremendously polluted the quality of water, air and noise. For example, domestic wastes, industrial effluents and other wastes that were dumped directly into the river have polluted the rivers severely. Moreover, air pollution is caused by the emission from motor vehicles, industries and the use of non-environmental friendly fuel sources. Additionally, noise pollution is caused by various human activities. The massive increase in population has generated a very high volume of solid wastes in the urban areas which has resulted into various health hazards. We will be discussing this aspect in the next sub section in details. Urban expansion has also affected global climate as well.
- **Shrinking Greenfield Areas:-** One of the primary impacts of urbanization is massively felt on the land itself. It needs to be mentioned here that land under rural use is under cyclical utilization, but when the land is diverted to non-rural use, its character gets changed permanently. For example, land used for mining and other such purposes changes its nature permanently, and it is impossible to restore such land to its original use. It means that the diverted land is lost forever for such purposes like afforestation, agricultural use, etc.

- **Overloaded urban systems:-** Lop-sided planning or unplanned urbanization has permitted excessive concentration of population in the areas which already support a population beyond its threshold limits. As a consequence, it is seen that the services break down, the street system is unable to afford the additional traffic, solid wastes are generated which is beyond management capacity, and there is a general decline in hygiene and sanitation. Also, it results in the growth of squatter colonies, and such unauthorized colonies always overloads the urban systems as there is no proper drainage, water supply facilities, and it results in unsatisfactory garbage accumulation all over the place. It is pertinent to mention here that in our country, the slums and the squatter colonies have totally degraded the urban environment.

Let us now focus on the specific environmental impacts of Urbanization, which are as follows:-

- **Air pollution-** Urbanisation has resulted in air pollution due to the various industrial activities, vehicular emissions, construction activities etc.
- **Water pollution–** Urbanization also leads to water pollution as sometimes the untreated sewage and the industrial waste are discharged into the water bodies thereby impacting the water quality and the eco-system.
- **Land use changes–** Moreover, the expansion of cities leads to the conversion of the agricultural land and forests into urban areas thereby leading to habitat loss and biodiversity decline.

- **Urban heat island effect –** The urban heat island has become a serious and growing concern now-a-days. Due to the various types of heat released by various human activities in the cities, which get retained by built structures, there arises the problem of urban heat islands. We find the cities warmer than the villages. Materials like concrete, asphalt, bricks etc absorbs and reflect energy differently and thus cities remain warm even in the night when the countryside has already cooled. Thus, we find the cities having higher temperatures than the surrounding areas.
- **Climatic change –** The growing urban activities releases a wide range of emissions into the environment and the greenhouse gas emissions exacerbates climatic changes.
- Also, urbanization leads to loss of biodiversity and loss of species. High levels of air and noise pollution are caused due to growing industries and automobiles. Water also gets polluted due to industrial waste discharge.

6.4 Re-thinking on Environmental Sustainability

We have studied in the previous units about the concept of sustainable development. And thus we know that the idea of sustainability has a number of dimensions. We can cite here again the definition given by the World Commission on Environment and Development which defined sustainable development as 'development that meets the needs of present generations without compromising the ability of future generations to meet their own needs'. However, since the late 1980s, there has been much refinement, rethinking and elaboration of the concept. Some approaches are there like that of Munasinghe, 1993; Munasinghe

and Cruz, 1995, which distinguishes between economic, social and environmental sustainability. Such approaches are no doubt very insightful and valuable, but it raises the problems of balance, reconciliation and the values to be placed upon the different dimensions of economic, social and environmental aspects. For example, we see that in the developing countries, some conflict arises between the alleviation of mass poverty and the implementation of wide ranging and comprehensive programmes of rapid and extensive environmental improvement. Thus, sustainability is not simply an intellectual abstracted concept or scientific definition but it is closely associated with wider social processes. This rethinking on the concept of sustainable development has been well captured in the reviews given by Dasgupta and Maler (1994), Munasinghe (1993) and Pezzey (1992). Research by Munasinghe and Cruz (1995) has very well highlighted on the impact of macroeconomic reform upon the environmental conditions. Their studies revealed the fact that some normal economic reform is conducive to sustainability but reform for greater efficiency can have some environmental impact but again it depends on the institutional conditions (for example, laws, administrative provisions). If the institutional conditions are in place, they can counter adverse social costs of environmental impact in market economies. Thus we see that both institutional frameworks and the policy making are inter-related. Also, it is pertinent to mention here that since the mid-1980s, there has been a fundamental review of the international urban policy and urban environmental conditions by various international organizations and independent commentators (Williams, 1995; World Bank, 1991).<Pugh, C. (2014)>.

Self Asking Question:

There has been much re-thinking on Environmental Sustainability these days. Discuss the statement.

……..

……..

……...

6.5 Health hazards caused by uncontrolled urban waste disposal

In order to understand how Health hazards are caused by uncontrolled urban waste disposal, firstly we need to understand what is waste? Waste is any material that is not useful and does not represent any economic value to its owner. It can be solid, liquid and gaseous. Solid wastes are like municipal wastes, hazardous wastes, medical wastes and radioactive wastes. Again it is pertinent to observe here that the municipal solid wastes can be of various types like: compostables (food wastes, vegetable market wastes etc), Recyclables (paper, plastic, glass etc), inerts (stones, ash, silt etc).

We know that as a result of rapid industrialization and unplanned urbanization, cities are now grappling with the problem of high volumes of wastes. These wastes, if not disposed of properly, then they get percolated down to earth thereby contaminating everything we use like that of food, water, which ultimately leads to serious health damage. Uncontrolled wastes dumping in the open dumps are very detrimental to the urban environment because these solid wastes are breeding grounds for different kinds of insects, mosquitoes, pests etc. which poses as serious threat to public health. Open burning of solid wastes emits various types of pollutants and produces volatized heavy metals etc thereby causing air pollution and the inhalation of these smoke and fumes can cause serious health problems. All these solid wastes might also cause various

dermatological problems, eye infections, low life expectancy. Developing countries like that of India are undergoing a massive migration of their population from the rural to that of the urban areas and to give habitat to these growing population, many existing waste disposal sites have been filled up and used for settlement and housing purposes. Very less number of the cities have adequate waste transportation facilities and that is why, the urban wastes are dumped anywhere in the open which adversely effects the environment and the human health. These wastes often get mixed up with human and animal excreta and it contributes towards spreading diseases. Also, due to improper handling of the medical wastes like absence of proper sterilization procedures, dumping of the infectious medical wastes into the open dumps leads to disease transmission. Thus, the need of the hour is to find out improved means of waste disposal in a cost effective and environmental friendly manner. Also, waste needs to be treated holistically. Proper solid waste management system is the need of the hour which includes generation of wastes, storage, collection, transportation, processing and the final disposal. It needs mention here that if handled properly, waste can be wealth which has tremendous potential by enriching the earth through composting and recycling rather than spreading pollution.

Thus, from the above discussion, it is clear to all of us that some causes are responsible for uncontrolled urban waste problem, which are like, uncontrolled growth of the population, deforestation, industrial development, unplanned urbanization, technological development, lack of environmental awareness, over exploitation of resources, poverty etc. It is also clear from the above discussion that solid wastes need to be properly managed in order to avoid further deterioration of the environment and public health. There should be a proper urban environment management system but unfortunately,

due to causes like financial and institutional constraints, weak or underfinanced local governments, rapid growth of population, lack of awareness amongst the masses etc, we find this problem of uncontrolled waste dumping.

In a developing country like India, the problem of environmental pollution is fast assuming menacing proportions as is evident from the fact that today most of our rivers, land and air are getting polluted due to leakage of poisonous gases and other harmful gases, liquids and solid wastes from the industries, dumping of the solid wastes in the open areas etc. Along with the increase in the quantity of the solid wastes, even the composition of the waste is also becoming more and more diversified. According to the World Bank, deteriorating water quality due to poor sanitation, industrial effluents and pesticide runoff, lack of clean water, poor solid waste management and air pollution are the key environmental problems in South Asia. Thus, the need of the hour is environmental protection. Keeping in consonance with the fact, in our country, the Supreme Court appointed the Burman Committee (1999), which recommended that composting should be carried out in each municipality which is the most appropriate technology to deal with the problem of wastes. Other policy documents includes the Ministry of Urban Affairs' Shukla Committee's Report (Jan 2000) and the Report of the National Plastic Waste Management Task Force (August 1997). In Oct. 2000, the Ministry of Environment and Forests notified the Municipal Solid Wastes (Management and Handling) Rules, 2000, which stipulated clearly the procedures and guidelines for collection, segregation, storage, transportation, processing and disposal of the municipal solid wastes.

The Hazardous Wastes (Management and Handling) Rules, 1989, deals with hazardous wastes and its management. The Bio-Medical Waste (Management and Handling) Rules, 1998, says that any waste

generated during the diagnosis, treatment or immunization of human beings or animals or in research activities etc are bio-medical wastes and it shall be the duty of every occupier of an institution generating such wastes like hospital, clinic, dispensary, pathological laboratory etc to take all the necessary steps to ensure that such wastes will not have any adverse effect to the human health and the environment. Similarly, there are also provisions for coastal zone management. Thus, we see that in our country, a number of legislative measures have been enforced with the view to prevent environmental disaster.

6.6 Some cases showing the connection of urbanization and environment

Now, let us have a look at some of the cases where judiciary has tried to protect environment in our country. Since due to multitude of factors like industrialization, unplanned urbanization, explosion of population, over exploitation of natural resources, depletion of traditional source of energy and raw materials, destruction of a multitude of animal and plant species for economic reason etc, there has been environmental deterioration, the judiciary has tried to uphold the concept of sustainable development.

In V. Shankar Reddy v/s State of Andhra Pradesh, the Andhra Pradesh High Court has held that the government order which permitted a forest to be cleared was invalid being against the Forest (Conservation) Act. Also, in Bangalore Medical Trust Case, the court held that a plot reserved for a public park could not be allotted arbitrarily to a private hospital by altering the town planning scheme. In Rural Litigation and Entitlement Kendra v/s State of U.P., it was observed by the Apex court that for the purpose of social development, the natural resources have got to be tapped but at the same time it should be kept in mind that tapping of resources

have to be done with requisite attention and care so that ecology and environment does not get affected in any serious way. In 1991, the Supreme Court in M. C. Mehta v/s UOI, has issued directions to the Central Government with a view to generate awareness in matters of environmental protection. In M. C. Mehta v/s Union of India and others, popularly known as 'Taj Trapezium Pollution' case, the Supreme Court ordered the closure of brick kilns within 20 km. radius distance of Taj Mahal with certain directions. The Patna High Court in Rajiv Ranjan Singh v/s State of Bihar and others, held that the victims of pollution are entitled to compensation. However, keeping in consonance with the concept of sustainable development, the Supreme Court in Narmada Bachao Andolan case held that the presumption that construction of Sardar Sarovar Dam will result in ecological imbalance is not correct. In V. Lakshmipathy v/s State of Karnataka, the Karnataka High Court upheld that right to life inherent in Article 21 of the Constitution contemplates qualitative life and thus ordered to stop the operation of industrial units in land earmarked as residential areas. Again, in M.C. Mehta v/s UOI, it has been held by the Supreme Court that a tannery which cannot set up a primary treatment plant cannot be permitted to continue because of its adverse effect on public. The discharging of the trade effluents from the tannery to the river Ganga cannot be allowed. In another case of M. C. Mehta, the apex court held that it is not possible to formulate and adopt policy of non setting up of chemical or hazardous industries merely because it would pose danger to human life, because that would mean the halt of all progress and development. However, safety measures can be improved and strictly followed so as to minimize the risk from such industries. (S. C. Tripathi)

The above cited are some of the cases, going through which we can understand the fact that in our country the judiciary has always tried

its best to preserve and protect our environment keeping in consonance with sustainable development. There are many more cases where we find this effort on the part of the judiciary. Thus, effort has always been there to strike a balance between urbanization and environment. It is seen that environmental protection constitutes an integral part of today's developmental process. The concepts of everlasting peace, development and environment – all these are interdependent and indivisible. Today we are confronted with the problem of continuing deterioration of the eco-system and the solution lies in the proper integration of environment and developmental concerns. Such balanced approach will help us towards the process of fulfillment of basic needs, improved living standards for all, and a better protected and managed ecosystem. We know that both the developed as well as developing nations are confronted with the problem of environmental pollution. So far as developing nations are concerned, poverty and lack of development constitute an essential element of the problem of environmental pollution. Similarly, the developed countries have their own problems. Over production, nuclear radiations, over exploitation of resources, industrial wastes in different forms etc are some of the contributing factors for environmental problems in those developed countries.

Urbanization in India:-

In India, urbanization is rapidly growing phenomena. Urbanization in our country has been a dynamic process characterized by the following trends:-

- **Informal settlements:** It needs mention here that a large portion of our urban population lives in various informal settlements or slums which often lack the basic infrastructure

and facilities. This creates the problem of overflowing slums and inadequate housing.

- **Co-existence of ancient and modern cities:** If we see the urban development in India, we find the co-existence of ancient and modern cities. There are ancient cities with rich cultural heritage and history which co-exists with the development of modern cities.
- Urbanization due to the tertiary sector as there is a growth in the tertiary sector such as communication, transport etc.
- **Geographical difference:** This indicates that some parts are more urbanized than some other parts.

The adverse impacts of urbanization are like: environmental degradation, overcrowding and strain on infrastructure, loss of agricultural land, displacement of rural residents, inequalities in access to resources and services, loss of biodiversity etc.

The Government of India has implemented a number of measures so as to address the adverse impacts of urbanization and these are like: Jawaharlal Nehru National Urban Renewal Mission, National Urban Transport Policy (2006), Swachh Bharat Abhiyan, Pradhan Mantri Awas Yojana (PMAY), Smart City Mission etc. It is pertinent to mention here that whenever it comes to the definition of 'smart' element of any city, there emerges the definitional problems. A smart city need to have facilities like clean water for every household, access to basic health, sanitation, housing that is both safe and affordable etc. Unfortunately, these are lacking in many of the country's urban areas. <https://www.opml.co.uk/insights/indias-urbanisation-challenge>

Stop to Consider:

Kinds of Noise Pollution:-

Since the increase in noise pollution is directly associated with the problem of increasing urbanization, here we will discuss about the different types of noise pollution which are as follows:-

1. Industrial Noise Pollution: The noise pollution caused by the increasing industrial activities is called industrial noise pollution. In recent years, due to the enormous growth of industrialization, noise pollution emanates from the industrial sources which are the matter of concern for the countries.

2. Urban Noise Pollution: The noise created by the increasing number of automobiles, cultural programmes, festivals, advertisements and the loudspeakers are the most prominent source of noise pollution.

3. Rural Noise Pollution: The noise is created by the use of pumping sets, flour mills etc. However, it causes least hazard in comparison to the industrial and urban noise pollution.

Self Asking Question:

Proper solid waste management system is the need of the hour – Discuss.

…….

……..

……...

6.7 Remedial Measures

In order to attain the cherished goal of 'Sustainable Development', there is the need to strike a proper balance between economic development and ecological protection. Thus, we can mention here

some of the remedial measures. These measures, if adopted properly, can go a long way in solving the problem of environmental pollution. Some of these measures are like:-

- Adoption of scientific and professional ways of handling wastes.
- People at the grassroots level must be trained properly so that they feel a sense of commitment towards all the projects dealing with environment protection.
- Awareness camps and debates must be held so that people are able to understand the health risks associated with deficient solid waste disposal.
- Decentralized, participatory management is another strategy for tackling the problem of environmental degradation.
- The programmes for environmental protection should be appropriately tailored so as to meet the local conditions.
- Some techniques should be devised through which the open dumps can be transformed into controlled dumps.
- Public need to be engaged in the decision-making process. Then only, they will have a sense of belongingness and responsibility towards the environmental problems.
- A new site for proper disposal of the solid wastes must be found out which is far away from the crowded urban areas. This means there must be delineation and maintenance of appropriate sites for the disposal of solid urban wastes.

- There is the need for proper land-use plans. If meaningful land-use maps are prepared, it can help in the fruitful utilization of land resources.
- Utmost need of the hour is sparing of the agricultural land for other purposes.
- Arrangements must be made for the proper discharge system of liquid and gaseous wastes.
- Some other steps like use of incinerators, use of community waste bins in the public places, proper town planning, slum areas improvement plan must be professed.

We have seen from the above discussion that urbanization, industrial activities and development, deforestation are the chief sources of the environmental pollution. Moreover, increased mining activities and coastal encroachment further aggravates the problem. Now the core question before us is that for the sake of environmental protection, can we neglect technological development? The answer is no, we cannot afford to do that. In this era of economic liberalization, in fact, the developmental activities are required to be accelerated. Thus, the only way out is devising an environmental balancing approach while pursuing the developmental projects.

Stop to Consider:

People's response in India regarding environmental protection:-

In India, people's response to various ecological crises has been seen from time to time. It has been seen that in certain cases, they have formed pressure groups for exerting influence on the

government to take the proper decision. The NGOs (non-governmental organizations) also played important role in this regard. Different organizations have contributed their efforts towards environment protection by conducting new researches. For example, National Environmental Engineering Research Institute, Nagpur (NEERI), The Centre for Science and Environment, New Delhi, The Centre for Environment Education, Ahmedabad are some of the institutions which are continuously engaged in conducting research in the field of environment protection. Also, from time to time, various PILs (public interest litigation) have been filed to draw attention of the judiciary towards environmental matters and it has been seen that the judicial response to almost all environmental litigations has been very positive in our country. The environmental activists, lawyers and the judges have always made their significant contributions towards environmental protection. People throughout the length and breadth of the country have always participated in the environmental issues. For example, in Karnataka, the CHIPKO movement and APPIKO movement showed people's concern for saving the forests from exploitation. Similarly, in Kerala, there was the campaign against the Silent Valley Project. The Society for protection of Silent Valley filed a PIL so as to make the government stop the execution of the project. Moreover, there are movements like the Narmada Bachao Andolan (NBA) where there was sustained agitation by certain environmentalist against the Narmada Valley Project. (Jaswal and Jaswal).

Check Your Progress:

1. How does the process of urbanization impact the natural ecosystems? Explain with examples.

2. How does urban expansions affect biodiversity and wildlife habitats?

3. One of the biggest challenges in the urban areas is the problem of waste management. Discuss the sustainable solutions for managing the solid wastes in the cities.

4. How does urbanization leads to the problem of climate change? Discuss.

6.8 Summing Up

From the above discussion, it is clear to all of us that our environment needs to be protected under all circumstances. Otherwise human race will perish altogether from this earth. We can make out from the above discussion that there is not a package solution to the problem of urbanization and its adverse effects. Also it is not a one-shot affair to be achieved within a small time. Rather, the problem can be best tackled by making the people conscious about the evil consequences of unplanned urbanization. Also, proper training must be given to the people regarding waste dumping. Environmental imbalance and the associated health hazards can be curbed to a considerable extent by bringing in environmental awareness amongst the masses and also by devising appropriate environment-friendly mechanisms. It is true that in a developing country like ours, there must be development but that development cannot take place at the cost of the environment. That is why, the urgent need of the hour is environmental protection.

6.9 References and Suggested Readings

- Pugh, C. (2014). *Sustainability the environment and urbanisation*. Routledge.

- Buch, M. N. (1989). Environmental Impact of Urbanisation. *Indian Journal of Public Administration*, *35*(3), 513-519.
- Zhang, X. Q. (2016). The trends, promises and challenges of urbanisation in the world. *Habitat international*, *54*, 241-252.
- Morinière, L. (2012). Environmentally influenced urbanisation: footprints bound for town?.*Urban Studies*, *49*(2), 435-450.
- Jaswal, P. S. and Jaswal, N. (1999) *Environmental Law*. Allahabad Law Agency.
- Tripathi, S. C., (2008). *Environmental Law*. Central Law Publications
- Basu, D. D. (1997) *Introduction to the Constitution of India* (18th ed.), Prentice Hall of India pvt. Ltd., New Delhi.
- Kharvel Ranjith. *Sustainable Solid Waste Management in India*.
- Da Zhu, P. U. Asnani, Chris Zurbrugg, Sebastian Anapolsky, Shyamala Mani. *Improving Municipal Solid Waste Management in India (A Source book for policy makers and practitioners).*
- https://www.opml.co.uk/insights/indias-urbanisation-challenge
- https://vajiramandravi.com/upsc-exam/urbanization/

---×---

BLOCK- III
ENVIRONMENTAL GOVERNANCE

Unit 1: Global Environmental Conventions

Unit 2: Environmental Movements in India

Unit 3: Environmental Jurisprudence and Environmental Policies in India

Unit 4: Environment and Civil Society

UNIT- 1

GLOBAL ENVIRONMENTAL CONVENTIONS

Unit Structure:

1.1 Introduction
1.2 Objectives
1.3 Global Environmental Conventions
1.4 India and Global Environmental Protection
1.5 Summing Up
1.6 References and Suggested Readings

1.1 Introduction

In this era of globalization and industrialization, the concern for bringing about sustainable development has been seen everywhere, throughout the length and breadth of the world. If we want to trace the international concern for environmental protection, then we must take note of the UN Conference on Human Environment and Development held at Stockholm in 1972, which is considered as the Magna Carta of environmental protection and sustainable development. This conference resulted in the 'Stockholm Declaration on the Human Environment' which proclaimed that man is both the creator and moulder of his environment. Thereafter, many other efforts have been taken at the international level for environmental protection. In this unit, we will try to study various Global Environmental Conventions which deals with environmental protection.

1.2 Objectives

This unit deals with various international arrangements for bringing about environmental protection. After reading this unit, you will be able to —

- *understand* various Global Environmental Conventions dealing with environmental protection;
- *discuss* various efforts at the international forum to promote the concept of sustainable development;
- *explain* various global environmental laws and treaties and their provisions;
- *understand* India's role in Global Environmental protection.

1.3 Global Environmental Conventions

The International community under the banner of the United Nations Organisation has adopted various resolutions and also held various conventions from time to time for environmental protection. It also guided the member nations to take various measures for protecting and maintaining environmental standards. Let us now discuss about some such important efforts at the international level.

1. **Prevention of pollution by dumping of harmful substances**:- The dumping of harmful chemical substances results in environmental pollution and thus it is a health hazard. Some of the conventions were adopted at the international level so as to bring an end to this menace. Some such important ones are: Brussels Resolution on International Cooperation concerning pollutants other than oil, 1969; Oslo Convention on Dumping, 1972; London Convention on Dumping, 1972. However, it needs mention

here that unless and until a combined effort has been given, the problem of dumping of harmful substances cannot be solved.

2. **Conventions on prevention of pollution by Radioactive Substances**:- Some Conventions which are adopted for the prevention of pollution by Radioactive Substances are like:- Antarctic Treaty, 1959; Nuclear Test Ban Treaty, 1963; Tlateloco Treaty, 1967; the Treaty on the non-proliferation of nuclear weapon, 1968; the Treaty on the prohibition of the emplacement of Nuclear Weapons and other weapons of Mass destruction on the sea bed and ocean floor and sub-soil thereof, 1971 etc.

3. **Stockholm declaration on the Human Environment, 1972**:- The Stockholm conference from 5th to 16th June 1972 considered the need for a common outlook and common principles to guide the people of the world in the matter of preservation and protection of the environment. It proclaimed the following: right to environment means right to life itself, protection of human environment is a major issue which affects the well being of the people throughout the world, gross deficiencies are harmful to man-made environment, environmental problems are caused by underdevelopment, growth of population denotes problem for environment, prudent care for environment becomes necessary, common efforts for the preservation and improvement of the human environment.

   Let us have a look at the important principles under the Stockholm declaration:-

   a. Man has the fundamental right to live in an environment of a quality that permits him to live a

life of dignity and well being and thus he bears a solemn responsibility to protect and improve the environment for the present and future generations.

b. The natural resources of the earth, including the air, water, land, flora and fauna and especially the representative samples of the natural eco-systems, all these must be safeguarded for the benefit of both the present and the future generations.

c. The renewable resources must be maintained and wherever practicable must be restored.

d. Man has the special responsibility to safeguard the heritage of wild life and its habitat which are now gravely imperiled by a combination of adverse factors.

e. There must be proper use of non-renewable resources in such a way so as to guard them against the danger of their future exhaustion and to ensure that their benefits are shared by all mankind.

f. Release of toxic substances must be stopped in order to ensure that serious or irreversible damage is not inflicted upon the eco-systems.

g. States must undertake preventive measures so as to prevent pollution of the seas by substances that are liable to create health hazards, to harm living resources and marine life.

h. Bring about economic and social development which is essential for ensuring a favourable living and working environment for man.

i. Environmental deficiencies need to be removed.

j. Application of unified environmental measures to create better living conditions for all.

k. Additional international technical and financial assistance needed to be given to the developing countries and resources should be made available to preserve and improve the environment taking into account the circumstances and particular requirements of the developing countries.

l. States must adopt integrated and co-ordinated approach to their development planning so as to ensure that the development is compatible with the need of the population.

m. Emphasis on regional planning for reconciling any conflict between the needs of development and the need to protect and improve the environment.

n. Planning, managing and controlling of the environmental resources must be done with the view of enhancing the environmental quality.

o. Avoidance of the environmental risks by science and technology.

p. Education in environmental matters is needed for the younger generation as well as the adults, in order to broaden the basis for an enlightened opinion and responsible conduct by individuals, enterprises and communities in protecting and improving environment.

q. Free-flow of up-to-date scientific information and the transfer of experience must be supported and assisted to facilitate the solution of environmental problems

in all countries especially the developing countries. Also, environmental technologies should be made available to the developing countries.

r. States can exploit their own resources in accordance with the Charter of the United Nations and the principles of international law. They have the responsibility to ensure that activities within their jurisdiction do not cause damage to the environment of other states.

s. States need to co-operate and develop further the international law regarding the liability and compensation for the victims of pollution and other environmental damage.

t. International matters concerning the protection and improvement of the environment should be handled with cooperative spirit by all the countries.

u. States shall ensure that international organizations play a dynamic role for the protection and improvement of the environment.

v. States must strive towards prohibition on the use of nuclear weapons.

4. **The report of the World Commission on Environment and Development , 1987**, provided impetus to the concept of sustainable development and brought into focus the common concerns of the people, common challenges which we face all over the world and the common endeavours which we need for bringing in peace, security development and environment.

5. **The Rio Declaration on Environment and Development, 1992**:- This declaration further concretized the concepts of sustainable development and environmental protection. The following are some of its proclamations:-

    a. Human beings are entitled to a healthy and productive life in harmony with nature and thus are at the centre for sustainable development.

    b. States have sovereign right to exploit their own resources in accordance with the Charter of the United Nations and the principle of international law.

    c. There must be equitable development so as to meet the developmental and environmental needs of the present and future generations.

    d. In order to achieve sustainable development, environmental protection must be an integral part of the developmental process.

    e. All states and all people shall stand in cooperation in the essential task of eradicating poverty for attaining sustainable development.

    f. The special situation and needs of the developing countries must be given priority.

    g. The states need to cooperate in a spirit of global partnership so as to conserve, protect and restore the health and integrity of the earth's eco-system.

    h. The States need to reduce unsustainable patterns of production so as to achieve sustainable development and a higher quality of life for their people.

    i. Technological cooperation is necessary for sustainable development.

j. Participative approach is needed to solve environmental problems because environmental issues are best handled with the participation of all concerned citizens at the relevant level.

k. States need to enact effective environmental legislation.

l. States should cooperate to promote a supportive and open international economic system which would help in economic growth and sustainable development in all the countries which will help to address the problems of environmental degradation.

m. States shall develop national law for determining the liability and compensation for the victims of the pollution and other environmental damage.

n. States should effectively cooperate to discourage environmental degradation.

o. To protect the environment, the States must apply precautionary approach.

p. Polluter should bear the cost of pollution with due regard to the public interest and also without distorting international trade and investment.

q. Natural disasters need to be notified immediately by the states and thereafter every effort shall be made by the international community to help states so afflicted.

r. Women's participation is to be ensured as they play a vital role in environmental management and development and to achieve sustainable development.

s. The creativity, ideals and courage of the youth of the world should be mobilized to forge a global partnership.

t. States should recognize and duly support people's participation in the environmental management.

u. Peace, development and environmental protection are interdependent and indivisible.

v. Environmental dispute must be resolved peacefully under U.N. Charter and cooperation to be extended by the states in good faith and in a spirit of partnership in the fulfillment of the principle embodied in this declaration.

6. Agenda 21, U.N. Conference in Environment and Development:- Agenda 21 was adopted at Rio de Janeiro, Brazil, June 1992. It contains developmental and environmental objectives for the purpose of substantial development. Thus, under Agenda 21, the international economy should provide a supportive international climate for achieving environment and development goals. The special objectives under Agenda 21 are:-

i. Address and discuss the difficulties which prevent environmental and economic development;
ii. The whole world is summoned to set priorities for future law making on sustainable development at global, regional and national levels;
iii. Effective participation of all countries in respect of international sustainable development programmes;
iv. Gradual development of international law, instruments, negotiations and agreements to match the international standards;

v. Ensure transparency in the use of trade measures related to environment;

vi. Ensure effective and prompt review system regarding international agreement, negotiations concerning the developing countries;

vii. Effective institution for implementation of unilateral, bilateral and multilateral agreement relating to trade and environment;

viii. Effective settlement of disputes.

ix. Promote and encourage the General Agreement on Trade and Tariff (GATT) and United Nations Conference on Trade and Development (UNCAD).

From the above discussion, it is clear that Agenda 21 insist upon a new global partnership, effective participation of the developing countries, codification of the international law so that sustainable development can be achieved. (S. C. Tripathi)

7. The Kyoto Protocol which is the world's most far reaching environmental treaty took effect on 16th February, 2005 and 34 industrialised countries legally bound to slash pollution resulting in global warming. The treaty required the industrial countries as a whole to cut carbon-di-oxide gas emissions. Thus, the Kyoto treaty mainly aimed at cut in gas emissions that causes global warming.

8. The Johannesburg Declaration on Sustainable Development, 2002:- The World Summit on Sustainable Development was held at Johannesburg, South Africa, from 2nd to 4th September, 2002 and it aimed to reaffirm commitment to sustainable development. The Summit recognized that poverty eradication, changing consumption and production pattern and protecting and managing the natural resource base for economic and social development are the main objectives and essential requirements for sustainable development. It was also affirmed there that though we have achieved significant

progress towards a global consensus and partnership amongst all but the sustainable development is yet to be achieved. The following commitments towards sustainable development were proclaimed:-

i. Emphasis on collective strength for the achievement of the common goal of sustainable development.
ii. The promotion of dialogue and cooperation among the world's civilizations and people are essential for bringing in sustainable development.
iii. To speedily increase access to the basic requirements such as clear water, sanitation, adequate shelter, energy, health care, food security and the protection of bio-diversity.
iv. The world must give priority attention on core sector so as to fight against the world wide conditions that pose severe threats to the sustainable development of every person. These conditions are like chronic hunger, malnutrition, armed conflicts, illicit drug problems, organized crime, corruption, natural disasters, terrorism etc.
v. The Summit resolved to ensure women's empowerment and emancipation and gender equality.
vi. The developed countries need to render official assistance to the developing countries for its developmental endeavours.

The above discussed are some of the commitments of the Johannesburg Declaration.

9. GATT and the Environment:- In the year 1947, an International Conference was held in Hawana. A resolution was passed there for increasing and strengthening world trade activities and to foster mutual relationship amongst various nations. The participating nations resolved there to reduce export-import taxes and thus came into existence the General Agreement on Tariffs and Trade on 1st January 1948, however as a temporary arrangement. But later on it became a permanent body. The General Agreement on Tariffs and

Trade (GATT) is a multilateral, voluntary body aimed at prescribing code of conduct for carrying out negotiations and consultations for resolving trade related problems. GATT has got a close relation with environmental pollution and it intended to protect the environment. We all know the fact that rapid depletion of natural resources due to unprecedented increase in human activities posing as serious threat to the future generations. GATT contemplated liberalization, industrialization and globalization and free trade world-wide and also it promotes and encourages agricultural development. And we know that agricultural development helps in maintaining the ecological balance.

From the above discussion, we can understand the fact that the International Environmental Conventions help the countries in effectively dealing with the various global environmental issues like that of climate change, biodiversity loss and pollution. We can cite here the examples of UN Framework Convention on Climate Change (UNFCCC), the Vienna Convention for the protection of the Ozone layer and the Convention on Biological Diversity. Let us now discuss again in short about some of more International Environmental efforts:-

- **UNFCCC:-** This aimed at stabilizing the greenhouse gas concentrations in the atmosphere so as to prevent pollution.
- **Paris Agreement:-** It also aimed at limiting global warming.
- **Kigali Amendment:-** This also aimed at environmental protection.
- **Vienna Convention for the protection of the Ozone layer:-** It was the convention which was ratified by every

country in the world and it addressed the issue of Ozone depletion.

- **Montreal Protocol:-** It is a protocol to the Vienna Convention.
- **Convention on Biological Diversity (CBD):-** This treaty is another important international environmental convention as it aimed to conserve bio-diversity and sustainably use its components.
- **Convention on Migratory Species (CMS):-** It is also known as Bonn Convention and it focused on the conservation of migratory species of wild animals.

Apart from the above discussed, other measures are also there like that of Nagoya Protocol, Cartagena Protocol on Bio safety, Rotterdam Convention, United Nations Convention to combat Desertification (UNCCD), Ramsar Convention etc.

It needs mention here that the 1980s and 1990s were the period when there was remarkable growth and proliferation in the indigenous movements worldwide. This movement gained further momentum because it was felt that there was the presence of the extractive industries on the indigenous lands, and as a result the indigenous movement forged alliances with the global rainforest movement. As the global environmental change proceeded at an unprecedented pace, the concern for conservation has also emerged as a central element in the various nations of both the north and the south. As a result of these efforts, new forms of conservation practice emerged. (J. Peter Brosius).

It is again pertinent to mention here that several treaties on hazardous substances and wastes which are central to safeguarding the human health and the environment have been negotiated since the 1970s. Since 1990s, the analytical focus shifted from the

negotiations to the implementation and that of the treaty effectiveness. The Minamata Convention on Mercury was adopted in Oct 2013 and this convention sets out to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds. It is true that mercury is naturally present in the earth's crust and are released through various natural processes like that of volcanic eruptions, the weathering of rocks etc. However, for the past few years, even human activities have also released large amounts of mercury which is a matter of grave concern. (H. Selin).

In order to promote the concept of sustainable development, we have already discussed above the various steps taken at the international level. Also, as a result of Uruguay Round of multilateral trade negotiations, the Governments are under international obligations to give stress on the following dimensions:-

a. non-discriminatory and equitable multilateral trading policies in order to support and promote the developing countries for sustainable development;
b. access to international market for developing countries;
c. taking into environmental consideration the commodity sector to be improved;
d. to promote and support domestic and international trade and to make policies which are supportive to economic growth and environmental protection programmes. (S. C. Tripathi).

Thus, we see that there is the need of international endeavours for bringing about environmental protection and sustainable development. And for that a supportive external economic environment policies are crucial. Under Agenda 21, it has been contended that the international economy should provide for a supportive international climate for achieving environment and developmental goals through:-

a. economic/trade liberalisation for promoting sustainable development in the core sectors;
b. making trade and environment mutually supplementary;
c. economic support to the developing countries; and,
d. promoting macro-economic policies favourable to the environment and development.

Certain international commitments were made under Agenda 21 of the U.N. Conference on Environment and Development, held in June 1992, where it was contended that the following subjects should be the matter of concern for the bilateral, multilateral and universal treaty:-

- Further development of international law relating to sustainable development giving proper balance between environmental and developmental aspects;
- The need for framing international instruments by taking into consideration the special needs for the developing countries;
- The international instrument to regulate and promote the global participation in the matter of environment and economic/trade development;
- Technical assistance to the developing countries with the view to enhance its legislative capabilities;
- Codification of international law to accelerate sustainable development and setting up of International Law Commission. (S. C. Tripathi).

Thus, we see that though the term ‘sustainable development’ was used at the international fora during 1970s, which means the integration of the developmental and the environmental imperatives, the concept actually received impetus at the Stockholm Conference

of 1972. However, the most accepted and comprehensive definition of sustainable development was given by the Brundtland Commission in its report of 1987. The Brundtland Commission Report very rightly pointed out the fact that sustainable development cannot and will not be achieved in the world ridden by that of poverty. The concept also requires that the adverse impacts on the quality of air, water and other natural elements is minimised so as to sustain the ecosystem's overall integrity. The Commission also very rightly recognised that all human beings have the fundamental right to an environment adequate for their health and well-being. Some other principles have also been adopted by the Commission, such as, the inter-generational equity, conservation and sustainable use of the natural resources, environmental standards and monitoring, prior environmental assessment and the general obligation of the States to co-operate with each other, are some of the important principles to achieve the goal of sustainable development. Thereafter, The Earth Summit of 1992 at Rio de Janeiro has put the world on the path of sustainable development and it produced some of the very important documents such as Rio Declaration, Agenda-21, Forest Principles, Convention on Climate change and Convention on Biodiversity. Another very important aspect or dimension of the Earth Summit was that it was attended by the representatives of more than 150 countries and as a result, the concept of sustainable development got recognition and acceptance throughout the world. The Rio declaration consisting of 27 principles incorporated the important concepts of inter-generational equity, the precautionary principle, the need to have environmental impact assessment and the polluter pays principle.

Also, we have seen above that the Agenda 21 is a comprehensive document containing the global action plan so as to implement the transition to sustainable development in the 21st century. But this

document was not legally binding as there was difference of opinion amongst the developed and the developing countries. The document rightly emphasised on the need of international co-operation for achieving the goal of sustainable development and it also submitted that unless there is co-operation from the developed nations to help the developing countries to come out from the acute poverty, the goal of sustainable development will remain as a distant goal only. Thus, above discussion makes us clear about the fact that the Agenda-21 represented a global consensus at the highest level on developmental and environmental co-operation.

Following the Rio declaration, there was The Convention on Climate Change which took up the matter of 'global warming'. But one of the major lacuna was that there was no time frame for achieving the target of reducing the emission of gases.

Thereafter, the U. N. Commission on Sustainable Development was set up in 1993 and the commission originated from Chapter 38 of the Agenda-21. The main function of the commission was to take follow-up action of the Rio Conference. The success of Agenda-21 was again evaluated at 'Earth Summit plus Five' in 1997 at New York at the special session of the U. N. General Assembly. And it was disappointing to be noticed at this special session that the forests, oceans and atmosphere of the planet are still in trouble and its population of poor still growing. More disappointing was to see that global warming still on the increase. The Kyoto Conference of 1997 required the industrialised nations to reduce their average emission of six greenhouse gases.

The above discussion makes us clear that the problem of environmental pollution is not the problem of any individual nation but it is a global problem and thus need to be tackled globally with the co-operation of all the countries. There must be political will of both the developed and developing nations to act in co-ordination

with each other so as to achieve the common goal of sustainable development.

Let us now have a look at how the international environmental frameworks have shifted in response to the changing nature of ecological challenges i.e., how it made a progress from early resource-based management to that of a more holistic understanding of sustainable development. We see that over the years, the international environmental frameworks have increasingly focussed on the holistic and collaborative approaches in order to address various complex ecological challenges. The shift involves focus on sustainability i.e., long-term sustainable development encompassing environmental protection, economic growth and social equity. Also, the shift indicates a broader engagement of the stakeholders, which indicates that governments, businesses, NGOs and the local communities are all needed so as to effectively address the various environmental challenges.

The various global environmental law necessitated the involvement of various non-state actors because a change in their behaviour is needed so as to achieve the environmental goals. For instance, industries need to alter their production processes and the consumers also need to modify their consumptions patterns to reduce harmful emissions. Although global environmental law primarily interacts with states, it also engages with non-state actors, particularly environmental and business NGOs, which actively collaborate with states and international bodies involved in environmental decision-making (Umotong and Dennis, 2018) <https://dergipark.org.tr/en/download/article-file/4492565>

It needs mention here that initially, the various environmental agreements often concentrated on managing the specific resources like that of water, minerals or energy. The main emphasis was on conservation and preventing pollution and it lacked a broader

perspective on the social and economic implications of the environmental policies. The concept of sustainable development recognized that environmental protection must be intertwined with economic growth and social equity. And thus, the international frameworks began to incorporate a broader range of issues like that of climate changes, biodiversity loss and social justice. It is pertinent to observe here that the Sustainable Development Goals (SDGs) adopted by the United Nations exemplify this holistic approach.

Thus, we see that the key features of this current shift focuses more on interconnectedness of environmental, social and economic factors; participatory approach which indicates involving the stakeholders in the decision-making processes; prioritizing the needs of the future generations; integrated policies and global co-operation for fostering international collaboration to address the global environmental challenges. Thus, we can sum up this discussion by saying that the shift simply indicated moving beyond the resource management to address the interconnectedness of the environmental, social and the economic issues.

1.4 India and Global Environmental Protection

India played a vital role in matters relating to environmental issues. A treaty becomes international law when it is ratified by the requisite number of countries and India ratified some such treaties. The following are India's Treaty obligations:- The Antarctic Treaty, Ramsar Convention, Convention concerning the protection of the World Cultural and Natural Heritage, Convention on International Trade in Endangered Species of Wild Fauna and Flora, Convention on the Conservation of Migratory Species of Wild Animals, Convention on the Conservation of Antarctic Marine Living

Resources, United Nations Convention on the Law of the Sea, Convention for the protection of the Ozone layer, Convention on the control of Transboundary Movements of Hazardous wastes and their disposal, Rio de Janeiro convention of 1992, Convention on Biological Diversity, International Tropical Timber Agreement etc. (S. C. Tripathi).

The above discussion makes the fact crystal clear that India has never remained behind for showing its concern for environmental protection. India actively participated in the Stockholm Conference of 1972 which is regarded as the Magna Carta of environmental protection and sustainable development. The Stockholm Declaration, very rightly pointed out that both aspects of environment, the natural and manmade, are essential to his well being and to the enjoyment of basic human rights – even the right to life itself. The concern for bringing about sustainable development was self evident through various principles in the Declaration. Thereafter, The World Commission on Environment and Development in its report of 1987 and the Earth Summit of 1992 have provided further impetus to the concept of sustainable development. Moreover, through PIL (Public Interest Litigation), appropriate directions were sought from the judiciary for the effective enforcement of various anti-pollution laws. Also, people have formed various pressure groups and through them forced the government to have proper environmental impact assessment (EIS) before any developmental project is undertaken. And it must be noted here that the judicial response has been very positive in the cases pertaining to environmental matters. However, certain factors posed obstacle like that of the fear of false PIL, lack of scientific and technical expertise of the judges to handle the environmental cases, difficulty in monitoring the implementation of its orders were

some of the limitations. We have seen in the chapter dealing with environmental jurisprudence in India that so many laws have been passed by the Indian Parliament from time to time dealing with environmental protection. Different Constitutional provisions also deals with environmental protection and we have discussed that at length. The judicial grammar of interpretation has broadened the scope and ambit of Article 21 and now "right to livelihood" is considered as a part of right to life. (Jaswal and Jaswal).

Stop to Consider:-

Some important International Environmental Conventions on Biodiversity are:-

The Convention on Biological Diversity (CBD) and its protocols, the Convention on Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Wet lands of International Importance (Ramsar Convention), the World Heritage Convention (WHC), the Convention on Conservation of Migratory Species of Wild Animals (CMS), the International Plant Protection Convention (IPPC), the International Convention on the Regulation of Whaling (ICRW). Other Conventions and processes with links to biodiversity includes the United Nations Convention to Combat Desertification (UNCCD), the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nation Forum on Forests (UNFF). Furthermore, biodiversity has been reflected throughout the 2030 Agenda on Sustainable Development and is gradually gaining more ground in the human rights context. (M. Nummelin).

Self-Asking Question:

The UN Conference on Human Environment and Development held at Stockholm in 1972, is considered as the Magna Carta of environmental protection and sustainable development. Discuss.

……..

…….

…….

Check Your Progress:

1. What is Sustainable Development? Discuss the various efforts taken at the international forum to contribute towards Sustainable Development.

2. Discuss the various provisions of the Stockholm declaration on the Human Environment.

3. GATT has got a close relation with environmental pollution and it intended to protect the environment – explain the statement.

1.5 Summing Up

From the above discussion, we can understand very well the fact that the protection and improvement of the environment is one of the major issues before the world community today. Throughout the world, various causes like industrialization, population explosion, over exploitation of resources, depletion of resources of energy and raw material etc have resulted in environmental deterioration. Thus the ultimate need of the hour is the integration of environment with the developmental process. It has been realized by the world community that there is a close relationship between a healthy environment and economic condition of the community at large. International forums are generally not directly responsible for the

enforcement of international environmental laws but they play the role of monitoring. In 1992, Bio-diversity Convention established the Committee on Sustainable Development which has no power to enforce action against the erring nation but it has the role of implementing the convention. Various global environmental conventions made it clear that development is not antithetical to the environment. But thoughtless development might cause harm to the environment. Thus, tapping of the resources must be done keeping in mind the fact that no harm is caused to the ecology and the environment. Thus, we can sum up our discussion on the positive note that sustainable development does not imply absolute limits on growth but it is actually a new concept of economic growth. Environment and development are means and not ends in themselves. Also, international efforts and co-operation is very much needed to support the developing countries to carry out their responsibilities properly. Thus, the urgent need of the hour is switching over from the concept of 'environment versus development' to that of 'environment and development'.

1.6 References and Suggested Readings

- Brosius, J. P. (2006). What counts as local knowledge in global environmental assessments and conventions. *Bridging scales and knowledge systems: concepts and applications in ecosystem assessment*, 129-144.
- Escobar Pemberthy, N. (2017). Environment, States, and International Organizations: The Role of Global Environmental Conventions in Protecting the Environment.
- Escobar-Pemberthy, N., & Ivanova, M. (2020). Implementation of multilateral environmental agreements:

Rationale and design of the environmental conventions index. *Sustainability*, *12*(17), 7098.

- Nummelin, M., & Urho, N. (2018). International environmental conventions on biodiversity. In *Oxford Research Encyclopedia of Environmental Science*.
- Tripathi, S. C., (2008). *Environmental Law*. Central Law Publications.
- Jaswal, P. S., and Jaswal, N.,(1999). *Environmental Law.* Pioneer Publication.

---×---

UNIT- 2

ENVIRONMENTAL MOVEMENTS IN INDIA

Unit Structure:

2.1 Introduction

2.2 Objectives

2.3 Historical and Cultural Background of Environmental Movements in India

2.4 Major Environmental Movements in India

2.5 Themes in Indian Environmental Movements

2.6 Role of Civil Society and Judiciary in Indian Environmental Movements

2.6.1 Role of Civil Society

2.6.2 Role of the Judiciary

2.7 Contemporary Environmental Movements in India

2.8 Challenges and Criticisms against Environmental Movements in India

2.9 Summing Up

2.10 References and Suggested Readings

2.1 Introduction

India has a rich history of environmental consciousness rooted in its cultural and spiritual traditions. However, modern environmental movements gained momentum in response to ecological degradation, industrial development, and the displacement of local communities. These movements often intersect with issues of social justice, indigenous rights, gender, and economic equity. Unlike many Western environmental movements focused primarily on conservation, Indian movements tend to link environmental issues

with livelihood concerns, making them deeply socio-political. This unit will help you to understand various environmental movements in India.

2.2 Objectives

After reading this unit you will be able to—

- *trace* the background of environmental movement in India;
- *examine* the major environmental movements in India;
- *know* the themes in Indian environmental movement;
- *analyse* the role of civil society and judiciary in Indian environmental movement;
- *discuss* the contemporary environmental movements in India;
- *examine* the challenges against the environmental movements in India.

2.3 Historical and Cultural Background of Environmental Movements in India

India's environmental consciousness has deep historical and cultural roots that predate modern ecological discourse. Traditionally, Indian society maintained a close and respectful relationship with nature, guided by religious and cultural beliefs. Many rivers, trees, mountains, and animals were considered sacred, forming the basis of a spiritual ecology that emphasized balance and coexistence. Sacred groves, known as *devrai* in Maharashtra or *kavus* in Kerala, were protected forest patches associated with deities, often managed by local communities without state intervention. Such practices reflected a form of community-based conservation, where

ecological protection was deeply intertwined with cultural and religious values.

During the colonial period, however, these traditional systems came under threat. Indian Forest Act of 1878 prioritized revenue generation and resource extraction, leading to the centralization of forest management and the marginalization of local communities, especially indigenous tribes who had lived in harmony with the forests for centuries. The introduction of commercial forestry and large-scale infrastructure projects disrupted local ecosystems and displaced traditional forest dwellers. This historical dispossession laid the foundation for the resistance that would later emerge in the form of environmental movements, as communities began to assert their rights over natural resources and protest against exploitative development models.

Post-independence, India's developmental focus shifted toward rapid industrialization, with large dams, mining, and deforestation often seen as symbols of progress. However, this model frequently came at the cost of ecological sustainability and social justice. As environmental degradation intensified, local communities—particularly those most dependent on forests, water, and land for their survival—began to mobilize. These movements were not only ecological in nature but also deeply political, rooted in historical struggles for land, livelihood, and autonomy. They carried forward the legacy of traditional ecological wisdom while responding to new forms of environmental and economic challenges. Thus, the historical and cultural background of environmental movements in India reflects a long continuum of ecological awareness, shaped by

both indigenous traditions and the complex legacies of colonial and postcolonial development.

2.4 Major Environmental Movements in India

India has witnessed several major environmental movements aimed at protecting natural resources and promoting sustainable development. The Chipko Movement in the 1970s, where villagers hugged trees to prevent deforestation, became a symbol of grassroots environmentalism. The Narmada BachaoAndolan protested against large dams on the Narmada River due to their displacement and ecological impact. The Silent Valley Movement in Kerala successfully opposed a hydroelectric project to preserve biodiversity. Other notable movements include theAppiko Movement in Karnataka and the Tehri Dam protest, all reflecting the strong connection between local communities and environmental conservation. The emergence of environmental movements in India can be attributed to a combination of ecological, socio-economic, political, and cultural factors. These movements arose as responses to environmental degradation, displacement of communities, and the marginalization of local and indigenous rights due to state policies and industrial development.

One of the primary factors was ecological degradation caused by development projects such as large dams, mining, deforestation, and industrial pollution. These activities led to the destruction of forests, rivers, and agricultural lands, severely affecting the livelihoods of rural and tribal communities. For example, the construction of large dams like the Sardar Sarovar displaced thousands of people and submerged vast forest areas. As a result, local populations, especially women and marginalized groups, began to resist such projects to protect their environment and resources.

Another key factor was the failure of state-led conservation policies to include local communities in decision-making. Forest laws introduced during the colonial period and continued post-independence centralized control over forests, excluding tribal and forest-dependent people from accessing resources that were once theirs. This exclusion, coupled with the growing awareness of environmental injustice, led to movements like the Chipko Movement in the 1970s, where villagers hugged trees to prevent them from being cut down.

Grassroots activism and the role of civil society organizations also played a crucial role. Non-governmental organizations, environmentalists, and social activists began mobilizing people and raising awareness about environmental issues. They connected ecological concerns with broader themes like human rights, social justice, and sustainable development. This intersection helped give the movements moral legitimacy and attracted wider public support.

Lastly, the influence of global environmental consciousness and international environmental discourse, especially after events like the 1972 United Nations Conference on the Human Environment, also inspired Indian activists. Exposure to global debates on sustainable development, conservation, and indigenous rights helped local movements frame their struggles in more organized and impactful ways, leading to national and international attention.

In summary, the emergence of environmental movements in India was shaped by a mix of local grievances, ecological destruction, social exclusion, and growing awareness of environmental justice. These movements became powerful voices advocating for both ecological protection and the rights of marginalized communities. Now let us discuss the major movements in India:-

a. Chipko Movement (1973)

The Chipko Movement was one of the most iconic environmental movements in India, emerging in the early 1970s as a grassroots response to deforestation in the Himalayan region of Uttarakhand(then part of Uttar Pradesh). The word "Chipko" means "to hug" in Hindi, and the movement earned its name because villagers—particularly women—physically embraced trees to prevent them from being cut down by contractors. This symbolic act of non-violent resistance was rooted in Gandhian principles of peaceful protest and civil disobedience. The movement began in 1973 in the village of Mandal in the Chamoli district, when the government allocated forest land to a sports goods company for commercial logging, ignoring the needs and rights of local communities who depended on the forest for fuel, fodder, and water.

The leadership and participation of rural women were central to the movement's success. Women like Gaura Devi played a key role in mobilizing others and confronting loggers directly, as they were among the most affected by deforestation. For these women, protecting the forest was not just about saving trees—it was about preserving their way of life, ensuring access to firewood and water, and safeguarding the local environment from landslides and soil erosion, which were worsened by tree felling. Environmental degradation in the fragile Himalayan ecosystem had direct consequences for their daily survival, which gave the movement a strong social and ecological foundation.

Over time, the Chipko Movement gained widespread attention across India and internationally. Activists like SunderlalBahuguna and Chandi Prasad Bhatt helped to amplify its message, linking local struggles to broader debates about sustainable development and ecological conservation. One of the most significant outcomes of the movement was the Indian government's decision in 1980 to

impose a 15-year ban on commercial tree felling in the Himalayan forests. The Chipko Movement not only helped conserve forests but also redefined environmentalism in India by highlighting the inseparable connection between ecology and social justice. It set a precedent for future environmental movements in the country and inspired similar efforts in other regions, such as the Appiko Movement in Karnataka.

Ultimately, the Chipko Movement stands as a powerful example of how ordinary people, especially rural women, can lead transformative struggles for environmental protection. It shifted the focus from elite-driven conservation to community-based environmentalism, emphasizing that those who live closest to nature are often its most committed guardians. This movement was one of India's first environmental movements to gain national and international attention. It highlighted the role of women in environmental conservation.

b. Silent Valley Movement (1978–1985)

The Silent Valley Movement was a landmark environmental campaign in India during the late 1970s and early 1980s, aimed at protecting one of the country's most pristine tropical rainforests from destruction. Located in the Palakkad district of Kerala, Silent Valley is part of the Western Ghats, a UNESCO World Heritage Site known for its rich biodiversity and endemic species. The forest was under threat due to a proposed hydroelectric project by the Kerala State Electricity Board, which planned to build a dam on the Kunthi River, a tributary of the Bharathapuzha. The project promised increased power supply, but it also posed a severe risk to the delicate ecosystem of Silent Valley, including the potential submergence of large forest areas and the displacement of flora and fauna.

The movement began as a scientific and ecological concern, with conservationists, scientists, and environmental activists raising alarms about the irreversible damage the project would cause. Prominent figures like Dr. M. S. Swaminathan and NGOs such as the Kerala Sasthra Sahithya Parishad (KSSP) played key roles in generating public awareness. They emphasized the valley's ecological uniqueness—home to rare species such as the endangered lion-tailed macaque—and argued that the region's value lay not in its potential for power generation but in its untouched biodiversity. The movement gradually gained momentum across the country and drew support from the media, intellectuals, students, and international environmental groups.

What made the Silent Valley Movement significant was its ability to link environmental concerns with scientific research and public advocacy. Unlike earlier movements that were largely grassroots-driven, Silent Valley was backed by environmental science and ecological data, marking a new phase in India’s environmental activism. The growing public pressure eventually compelled the central government to act. In 1983, then-Prime Minister Indira Gandhi intervened and decided to cancel the hydroelectric project. Two years later, in 1985, Silent Valley was declared a national park, ensuring the protection of its rare and fragile ecosystem.

The Silent Valley Movement was a turning point in India's environmental history. It showed that developmental projects must be weighed against their ecological costs and demonstrated the importance of preserving natural habitats for future generations. It also highlighted how scientific communities, civil society, and concerned citizens could come together to influence policy decisions. Today, Silent Valley remains a symbol of successful environmental activism and a reminder of the need to protect the planet’s most vulnerable ecosystems.

c. Narmada Bachao Andolan (NBA) (1985 onwards)

The Narmada Bachao Andolan (NBA), meaning "Save the Narmada Movement," is one of the most prominent and long-standing environmental and social justice movements in India. It began in the mid-1980s as a response to the construction of a series of large dams on the Narmada River, particularly the Sardar Sarovar Dam, which was part of the ambitious Narmada Valley Development Project. These dams were planned to provide irrigation, drinking water, and hydroelectric power to the western Indian states of Gujarat, Maharashtra, and Madhya Pradesh. However, the massive scale of the project came at a heavy human and environmental cost, including the displacement of hundreds of thousands of people, submergence of forests and farmlands, and disruption of ecosystems.

At the heart of the NBA was the demand for just and fair rehabilitation of those displaced by the dam projects, most of whom were Adivasis (indigenous people), farmers, and rural communities who had lived along the river for generations. The movement was spearheaded by social activist Medha Patkar, along with support from Baba Amte and other grassroots leaders. It challenged the state's development narrative that prioritized large-scale infrastructure over human rights and environmental sustainability. The NBA questioned not just the Sardar Sarovar Dam, but the very model of development that often ignored the voices of the poor and marginalized while benefiting urban and industrial elites.

One of the defining features of the Narmada Bachao Andolan was its non-violent approach and use of democratic tools such as public protests, hunger strikes, and legal battles. The movement gained national and international attention and took the issue to the Supreme Court of India, and even to international financial institutions like the World Bank, which was initially funding the

project. In 1993, after widespread criticism and an independent review that exposed flaws in the rehabilitation process, the World Bank withdrew its support from the Sardar Sarovar project. Although the dam construction eventually continued, the NBA succeeded in pressuring the government to adopt better resettlement and rehabilitation policies for affected people.

The NBA is not only an environmental movement but also a broader struggle for social justice, participatory democracy, and alternative development. It brought to light the voices of those often excluded from decision-making processes and highlighted the importance of involving local communities in the planning and execution of development projects. The movement also sparked debates across India about the true cost of progress and whether large dams are the best path to development.

In essence, the Narmada Bachao Andolan represents a powerful critique of top-down development and a call for more inclusive, sustainable, and people-centered policies. While its journey has been long and complex, its legacy continues to inspire other movements that seek to defend the rights of marginalized communities and protect the environment.

d. Appiko Movement (1983)

The Appiko Movement was a grassroots environmental movement launched in 1983 in the Uttara Kannada district of Karnataka, in the Western Ghats region. The word *"Appiko"* means "to hug" in the local Kannada language, and the movement was inspired by the earlier Chipko Movement of Uttarakhand, where villagers hugged trees to prevent them from being felled. Similarly, in Appiko, local people—mainly forest-dependent communities—embraced trees to stop the rampant deforestation that was threatening their forests, livelihoods, and local ecosystems.

The Western Ghats, where the Appiko Movement began, is one of the world's biodiversity hotspots. However, in the post-independence period, this region experienced widespread deforestation due to commercial logging, monoculture plantations, and development projects. These activities not only destroyed forests but also disrupted water sources, increased soil erosion, and affected the availability of fuelwood, fodder, and other forest-based resources that local communities relied on. The movement began when people in the village of Salkanihugged trees to prevent contractors from cutting them down. It quickly spread to other parts of the Western Ghats, with villagers—particularly women and youth—playing an active role.

Led by environmentalist Pandurang Hegde, the Appiko Movement combined traditional knowledge with modern environmental awareness. The movement had three major goals, often summarized as “three D's”:to Regenerate (Development), to Conserve (Decentralization), and to Use (Demand) forest resources sustainably. It emphasized not just stopping deforestation, but also promoting the regeneration of degraded forests and the use of eco-friendly alternatives like fuel-efficient stoves. Educational campaigns, folk performances, and village meetings were used to spread awareness, making it a people-centered movement that was both informative and participatory.

The Appiko Movement is notable for its emphasis on ecological balance, local participation, and the rights of communities over their natural resources. It reflected a deep concern not just for trees, but for the broader relationship between people and nature. While it did not completely halt deforestation in the Western Ghats, it played a significant role in raising environmental awareness, influencing forest policy, and encouraging community-led conservation efforts. Like the Chipko Movement, Appiko showed that ordinary citizens,

when organized and informed, can effectively challenge destructive environmental practices and advocate for more sustainable development.

It can be noted here that, the Appiko Movement was not just a protest—it was a campaign for ecological consciousness and grassroots empowerment**.** It remains a powerful example of how traditional values and local action can shape environmental resistance and inspire sustainable living.

e. Tehri Dam Protest

The Tehri Dam Protest was a prolonged environmental and social movement that emerged in response to the construction of the Tehri Damon the Bhagirathi River, a major tributary of the Ganga, in the Tehri-Garhwal region of Uttarakhand (formerly Uttar Pradesh). The Tehri Dam, one of India's tallest dams, was designed to provide hydroelectric power, irrigation water, and drinking water to several northern Indian states, including Delhi. However, the project faced strong opposition due to its far-reaching environmental, geological, and human consequences.

The movement began in the 1970s and intensified during the 1980s and 1990s as the project advanced. At the forefront of the protest was Sunderlal Bahuguna, a noted Gandhian environmentalist and one of the key leaders of the earlier Chipko Movement. He, along with many local residents, raised serious concerns about the dam's impact. The protesters argued that the dam would submerge the ancient town of Tehri, displacing thousands of people, many of whom had deep cultural and spiritual ties to the land. In addition to the human displacement, there were fears of seismic risks—the region lies in a highly earthquake-prone zone, and a dam of such magnitude raised serious safety concerns in case of a major tremor.

The protest was grounded in principles of non-violent resistance and relied on methods such as hunger strikes, sit-ins, and public demonstrations to draw attention to the issue. Sunderlal Bahuguna undertook several hunger strikes, including a major one in 1995, which brought national attention to the cause. The movement was supported by environmentalists, scientists, and civil society groups who criticized the lack of comprehensive environmental impact assessments and inadequate rehabilitation policies for displaced people. The protesters also questioned the broader model of development that prioritized large-scale infrastructure projects at the expense of environmental sustainability and local communities.

Despite decades of resistance, the construction of the Tehri Dam moved forward, and by the early 2000s, the dam was completed, leading to the submergence of Tehri town and the displacement of thousands of families. While the dam is now operational and supplies water and electricity, the protest succeeded in highlighting critical issuesrelated to environmental governance, disaster preparedness, and human rights. It forced authorities to reconsider rehabilitation policies and sparked wider discussions about the environmental costs of large dams.

The Tehri Dam Protest remains a symbol of the tensions between development and displacement**,** between state-led projects and people's rights. It also reinforced the role of civil resistance in environmental advocacy, emphasizing that development should be inclusive, participatory, and ecologically responsible. Although the dam was built, the protest's legacy lives on in environmental discourse and continues to inspire movements across India and beyond.

2.5 Themes in Indian Environmental Movements

Indian environmental movements have been shaped by a variety of interconnected themes, reflecting the diverse socio-economic, ecological, and cultural contexts of the country. One of the most prominent themes is the conflict between development and environmental conservation**.** Many movements, such as those against large dams (e.g., Narmada Bachao Andolan and Tehri Dam Protest), have questioned state-led development models that prioritize industrial growth and infrastructure at the cost of environmental degradation and the displacement of vulnerable communities. These movements argue for more sustainable and inclusive forms of development that respect ecological limits and human rights.

Another recurring theme is the struggle for the rights and livelihoods of forest-dependent and indigenous communities**.** Movements like the Chipko and Appiko campaigns highlight how rural and tribal populations, particularly women, have mobilized to protect forests from commercial exploitation. These struggles emphasize that environmental protection is not just about preserving nature in isolation but also about safeguarding the traditional knowledge, cultural practices, and survival of communities who live in harmony with the environment. The demand for community participation in resource managementand recognition of local rights over natural resources is a powerful thread running through many such campaigns.

Gender and environmental justice is another key theme in Indian environmental movements. Women have often been at the forefront of these struggles, as seen in Chipko, Appiko, and various anti-mining protests. Since women in rural areas are typically responsible for gathering water, firewood, and food, environmental degradation directly impacts their lives. As a result, many

movements have foregrounded eco-feminist perspectives, linking environmental destruction with patriarchal structures and advocating for gender-sensitive policies in development planning and environmental governance.

The theme of non-violent and Gandhian resistance also runs deeply through India's environmental movements. Inspired by Mahatma Gandhi's ideals, leaders like Sunderlal Bahuguna and Medha Patkar have adopted peaceful methods such as hunger strikes, civil disobedience, and public demonstrations to resist ecologically harmful policies. These methods have not only drawn national attention but have also shaped the moral and ethical discourse around environmental issues, stressing the importance of compassion, justice, and sustainability.

Lastly, many environmental movements in India raise broader concerns about democracy, accountability, and environmental governance**.** They question the top-down nature of decision-making and demand transparency, scientific assessments, and community involvement in environmental planning. These movements often challenge powerful interests—government agencies, corporations, and international financial institutions—exposing how ecological harm is linked with political and economic inequality.

Now you have understood that Indian environmental movements are not only about saving trees or rivers; they are about protecting lives, livelihoods, cultures, and rights**,** all while reimagining a more just and sustainable relationship between humans and nature.

2.6 Role of Civil Society and Judiciary in Indian Environmental Movements

Environmental movements in India have gained strength and visibility not only through the actions of affected communities but

also due to the significant roles played by civil society and the judiciary. Together, these two actors have acted as vital pillars in advancing ecological justice, promoting sustainable development, and protecting the rights of marginalized communities.

2.6.1 Role of Civil Society

Civil society in India includes a broad spectrum of actors—non-governmental organizations (NGOs), environmental groups, community-based organizations, independent researchers, media, youth movements, and concerned citizens. These groups have played several critical roles in the growth and success of environmental movements. This can be summarised as follows:-

- **Awareness Generation and Education**

Civil society has been instrumental in spreading awareness about environmental issues among the masses. Organizations like the Centre for Science and Environment (CSE), Kalpavriksh, have played a key role in educating people about topics like deforestation, pollution, climate change, and the ecological consequences of unchecked development. They have also helped people understand their environmental rights, linking ecology with health, livelihoods, and social justice.

- **Mobilizing Grassroots Movements**

Civil society groups often act as facilitators or catalysts for grassroots environmental movements. Movements like Chipko, Appiko, and Narmada Bachao Andolan were strengthened by the support of civil society actors who helped with organizing protests, documenting grievances, building networks, and lobbying with government bodies. They also trained activists and volunteers,

enabling communities to express their concerns in collective and impactful ways.

- **Policy Advocacy and Lobbying**

Civil society plays a major role in shaping environmental policy and legislation. They conduct research, publish reports, and push for stronger environmental laws and regulations. For example, civil society efforts led to the incorporation of environmental impact assessment (EIA) norms and improved public consultation processes in development projects. They also engage with national and international bodies, ensuring that India adheres to its environmental commitments.

- **Legal Action and Public Interest Litigation**

Many NGOs and activist groups have supported environmental protection through legal channels, especially by filing Public Interest Litigations (PILs) in the courts. These legal interventions have led to significant outcomes, such as the regulation of air and water pollution, conservation of forests, and enforcement of environmental laws in urban planning and industrial development.

- **Monitoring and Accountability**

In a context where environmental violations are frequent, civil society acts as a watchdog, holding corporations and government agencies accountable. They expose illegal deforestation, pollution by industries, displacement of communities, and misuse of natural resources. Through media campaigns, fact-finding missions, and grassroots monitoring, civil society ensures that environmental violations are brought to light and acted upon.

2.6.2 Role of the Judiciary

The Indian judiciary, especially the Supreme Court and High Courts, has emerged as a powerful protector of the environment. Over the last few decades, the judiciary has expanded the interpretation of the Constitution to include environmental rights as part of the fundamental right to life (Article 21). Through landmark judgments, the judiciary has enforced environmental norms and provided a platform for environmental justice.

- **Public Interest Litigation (PIL)**

The judiciary's most important contribution to environmental activism has been the liberal use of PILs, which allow citizens and organizations to file cases in the interest of the public without being directly affected. Environmental PILs have addressed issues such as deforestation, vehicular pollution, illegal mining, and conservation of rivers and wetlands. Some famous examples include:

a) MC Mehta vs Union of India (Taj Trapezium Case) – leading to the regulation of polluting industries near the TajMahal.

b) Vellore Citizens Welfare Forum vs Union of India – which introduced the precautionary principle and polluter pays principle into Indian environmental law.

- **Expanding the Right to Environment**

Indian courts have consistently upheld that the right to a clean and healthy environment is a fundamental right. This interpretation has empowered citizens and activists to challenge harmful projects and practices. It has also placed a legal obligation on the state to ensure environmental protection.

- **Establishment of Green Tribunals**

The judiciary supported the creation of specialized bodies like the National Green Tribunal (NGT) in 2010 to ensure speedy and expert resolution of environmental disputes. The NGT has since played a critical role in reviewing major projects, issuing penalties for environmental damage, and ensuring compliance with environmental regulations.

- **Balancing Development and Ecology**

The courts have often acted as arbiters between development goals and environmental concerns. While not all judgments have been in favor of environmental protection, many have emphasized the need for sustainable development, where economic growth does not come at the cost of environmental destruction.

While civil society and the judiciary have made significant contributions, they also face challenges. Civil society is often constrained by lack of funding, political pressure, and legal restrictions (e.g., curbs on foreign funding). The judiciary is sometimes criticized for inconsistent decisions, delayed judgments, or allowing projects to proceed despite environmental concerns, especially under pressure from economic or political interests. There's also a gap in implementation of court orders, where decisions are not effectively enforced by local authorities or governments.

Now you have understood that both civil society and the judiciary have played foundational roles in India's environmental movements. Civil society has energized public participation, brought ecological issues to the fore, and given a voice to affected communities. The judiciary has provided a legal framework to protect environmental rights and enforce accountability. Together, they have helped strengthen environmental democracy in India, ensuring that ecological concerns remain central to the nation's development

discourse. Going forward, their continued engagement will be vital in addressing the complex and evolving challenges of climate change, biodiversity loss, and sustainable development.

2.7 Contemporary Environmental Movements in India

In recent years, contemporary environmental movements in India have evolved to address a wide range of pressing ecological issues, reflecting the complexities of modern development, urbanization, and climate change. Unlike earlier movements that were primarily focused on forests and large dams, today's environmental struggles span urban pollution, waste management, industrial disasters, biodiversity loss, and climate justice. These movements are increasingly led by a mix of grassroots activists, youth, civil society organizations, scientists, and legal advocates**,** who use both traditional methods of protest and modern tools like social media, online petitions, and legal interventions to demand accountability and action.

One major theme of contemporary movements is the fight against air and water pollution**,** especially in urban areas. For example, cities like Delhi, Mumbai, and Bengaluru have witnessed citizen-led campaigns against hazardous air quality, industrial emissions, groundwater depletion, and river pollution. Movements like the Yamuna Bachao Abhiyan and Save Bellandur Lake campaign have highlighted how urban growth and industrial waste have severely damaged India's rivers and lakes. These efforts often call for stricter environmental regulations, better waste management, and sustainable urban planning.

Another significant trend is the climate change and energy justice movement, especially led by youth groups and climate activists. Inspired by the global Fridays for Future movement, young people

in India have begun organizing rallies, climate strikes, and educational campaigns demanding urgent action from governments on climate mitigation and adaptation. The Fridays for Future India network, for instance, has raised awareness about issues such as rising sea levels, extreme weather, and the impact of fossil fuel projects on communities and ecosystems. These movements not only emphasize the urgency of climate action but also draw attention to environmental justice, ensuring that vulnerable communities do not bear the brunt of climate impacts.

Contemporary movements have also taken up the cause of defending forests and indigenous rights in the face of mining, infrastructure, and industrial projects. Protests against projects in Hasdeo Arand (Chhattisgarh), Vedanta's bauxite mining in Niyamgiri (Odisha), and the Etalin Hydroelectric Project (Arunachal Pradesh) show how tribal communities, backed by environmentalists and legal networks, are resisting environmentally destructive practices. These movements stress the importance of protecting biodiversity hotspots and respecting local consent, often invoking the Forest Rights Act (2006) and constitutional provisions.

An important characteristic of today's movements is their ability to bridge local and global concerns. They address not only environmental degradation but also issues of livelihood, public health, gender equality, and intergenerational justice.Social media and digital platforms have become powerful tools for mobilization, information-sharing, and international solidarity. At the same time, many movements continue to rely on traditional methods—public hearings, rallies, sit-ins, and legal petitions—to make their voices heard.

In conclusion, contemporary environmental movements in India are more diverse, interconnected, and multidisciplinary than ever before. They reflect a growing ecological consciousness among

citizens and a demand for development models that are inclusive, equitable, and sustainable. These movements continue to challenge powerful state and corporate interests, advocating for a future that respects both people and the planet.

Stop to Consider:

Major Environmental Movements in North East India:

1. Anti-Dam Movement in Arunachal Pradesh

One of the most significant environmental movements in Northeast India is the opposition to large hydroelectric dam projects in Arunachal Pradesh, particularly the Lower Subansiri Hydroelectric Project. This movement began in the early 2000s when local communities, students, and civil society groups raised strong objections to the construction of mega dams on the Subansiri, Siang, and Dibang rivers. Protesters argued that these dams would lead to large-scale deforestation, loss of biodiversity, seismic risks, and displacement of tribal communities. Environmentalists also highlighted the threats to riverine ecosystems and the cultural identity of indigenous groups that depend on the rivers for their livelihood and traditions.

2.Chipko Movement in Assam

Inspired by the original Chipko Movement of Uttarakhand, a similar protest took shape in Assam during the 1970s and 1980s, often referred to as the Assam Chipko Movement. This movement emerged as a response to large-scale deforestation and commercial logging in the Golaghat and Jorhat districts. Local communities, including women and youth, began hugging trees to prevent them from being felled. The movement emphasized the vital link between forests and the survival of rural communities, and it played a role in

generating awareness about forest conservation and the rights of indigenous people over natural resources.

3. Anti-Mining Movement in Meghalaya

Meghalaya has witnessed several movements against unregulated and destructive mining practices, particularly in the Jaintia Hillsand Khasi Hills. The region is rich in coal and limestone, but the widespread use of rat-hole mining has caused severe environmental damage, including deforestation, water pollution, and land degradation. Local tribal communities and environmental groups have protested against the health hazards and ecological destruction caused by such mining. These movements demand stricter environmental regulations and highlight the need to balance economic development with environmental protection and the rights of indigenous people.

4.Save Cherrapunjee Movement (Meghalaya)

Cherrapunjee, once known as one of the wettest places on Earth, began facing serious water shortages and ecological imbalance due to deforestation, soil erosion, and unsustainable land use practices. The Save Cherrapunjee Movement arose to raise awareness about environmental degradation in the region. Activists and local residents initiated efforts to restore forest cover, promote rainwater harvesting, and advocate for sustainable development. This movement brought attention to the irony that despite receiving high rainfall, poor water management and environmental degradation had made Cherrapunjee water-stressed.

5.Community Forest Conservation in Nagaland

In Nagaland, several tribal communities have initiated movements to protect and conserve their forest ecosystems. One of the most well-known examples is Khonoma village, which declared itself India’s first "green village." The villagers voluntarily banned hunting and deforestation and set up community conservation areas

to preserve biodiversity. This grassroots conservation effort demonstrated how traditional tribal institutions could play a leading role in environmental protection. Other villages in Nagaland have followed this example, promoting eco-tourism, sustainable agriculture, and biodiversity conservation through community action.

Environmental movements in Northeast India reflect the region's deep cultural and ecological ties to nature. These movements have arisen in response to deforestation, mining, mega development projects, and the erosion of indigenous rights. Whether through resistance to destructive projects or through grassroots conservation initiatives, the people of Northeast India have shown a strong commitment to protecting their environment while preserving their cultural heritage and traditional knowledge.

2.8 Challenges and Criticisms against Environmental Movements in India

While environmental movements in India have played a crucial role in raising awareness and resisting ecological degradation, they also face a number of challenges and criticisms that limit their effectiveness and inclusivity. One of the main challenges is the perception of being anti-development. Many movements that oppose large infrastructure projects such as dams, mining, or industrial corridors are often criticized by governments and corporate interests as obstacles to economic growth and national progress. This criticism is rooted in a development narrative that prioritizes GDP growth, energy production, and urban expansion, often at the cost of ecological balance and social equity. As a result, environmental activists are sometimes labelled as "anti-national" or

"foreign agents," which undermines their legitimacy and public support.

Another significant challenge is state repression and legal restrictions. Activists frequently face harassment, surveillance, arrests, and even violence for voicing environmental concerns. Laws such as the Unlawful Activities (Prevention) Act (UAPA) and restrictive regulations on foreign funding (like the FCRA) have been used to silence or curtail the activities of NGOs and environmental groups. This shrinking democratic space makes it difficult for movements to organize freely, mobilize resources, and engage in sustained campaigns.

Environmental movements are also criticized for being urban-centric or elite-driven, especially in their modern, social media-based forms. While many grassroots movements still center the voices of rural and tribal communities, some urban environmental campaigns have been accused of overlooking the needs and perspectives of the poor, slum dwellers, and informal workers. For instance, while campaigns for clean air and green spaces in cities are important, they can sometimes push for solutions—such as evictions of informal settlements or bans on street vendors—that disproportionately harm the urban poor. This raises questions about whose environment is being protected, and at what cost.

Additionally, there is criticism about the fragmented and issue-based nature of environmental movements. Many campaigns tend to focus on specific local issues—such as a dam, a forest, or a pollution crisis—without necessarily connecting to a broader national or global environmental vision. This fragmentation can limit the ability of movements to build strong alliances, influence long-term policy,

or confront the systemic roots of environmental degradation, such as capitalism, consumerism, or state-driven industrialization.

A further challenge is the lack of political support and representation. Despite growing environmental awareness, few political parties in India have made ecological issues a central part of their platforms. Environmental movements often remain outside the mainstream political process, which makes it harder to translate their demands into enforceable laws or development plans. In many cases, there is also a lack of coordination between activists, scientists, legal experts, and policymakers, which weakens the impact of the movements.

Therefore it can be said that while environmental movements in India have achieved significant victories and raised vital concerns, they continue to face political, structural, and ideological challenges. Addressing these issues requires not only resilience and creativity from activists but also greater public engagement, inclusive strategies, and support from democratic institutions. For these movements to be truly transformative, they must bridge divides—between urban and rural, development and conservation, and justice and sustainability.

Stop to Consider:

The Yamuna Bachao Abhiyan:

The Yamuna Bachao Abhiyan is an environmental movement aimed at saving the Yamuna River from severe pollution and ecological degradation. Launched by concerned citizens, activists, and environmental groups, the campaign seeks to raise awareness about the river's deteriorating condition due to industrial waste, untreated

sewage, and encroachment along its banks. The movement advocates for clean-up drives, stricter enforcement of environmental laws, sustainable development practices, and community participation to restore the river's health and sacredness. It highlights the critical need to protect the Yamuna not only as a vital water source but also as a culturally and spiritually significant river in India.

Check Your Progress:

1. Write a note on the historical and cultural background of environmental movements of India.
2. Explain the Chipko Movement.
3. Who was Gaura Devi?
4. What was the main aim of silent valley movement?
5. In which year silent valley was declared a national park?
6. Write a note on Narmada Bachao Andolan.
7. What is Appiko Movement?
8. Who led the Appiko Movement?
9. Describe the Tehri Dam Protest.
10. Mention the major themes in Indian environmental movement.
11. Examine the role of civil society and judiciary in Indian environmental movement.
12. Discuss the contemporary environmental movements in India.

Self-Asking Question:

Do you think the courts have often acted as arbiters between development goals and environmental concerns? Examine.

……
……
……

2.9 Summing Up

After reading this unit you have learnt that environmental movements in India reflect the complex interplay between ecology, economy, and society. They challenge mainstream development paradigms and propose more inclusive, sustainable, and equitable models. By highlighting the voices of marginalized communities, especially women and indigenous groups, these movements have enriched both environmental thought and democratic practice in India.

2.10 References and Suggested Readings

- Karan, P. P. (1994). Environmental movements in India. *Geographical Review*, 32-41.
- Nayak, A. K. (2015). Environmental movements in India. *Journal of developing societies*, *31*(2), 249-280.
- Gadgil, M., &Guha, R. (1994). Ecological conflicts and the environmental movement in India. *Development and change*, *25*(1), 101-136.
- Reddy, R. V. (1997). *Environmental movements in India: some reflections*. FIA.
- Gadgil, M., &Guha, R. (1998). Towards a perspective on environmental movements in India. *Indian Journal of Social Work*, *59*, 450-472.

---×---

UNIT- 3

ENVIRONMENTAL JURISPRUDENCE AND ENVIRONMENTAL POLICIES IN INDIA

Unit Structure:

3.1 Introduction

3.2 Objectives

3.3 Environmental protection in ancient India.

3.4 Environment protection under the Constitution of India

3.5 Indian Penal Code, 1860, Code of Criminal Procedure, 1973, and Environment Protection

3.5.1 Indian Penal Code, 1860, and Environment Protection

3.5.2 Code of Criminal Procedure, 1973 and Environmental Protection

3.6 Various Environmental Laws in our Country

3.7 Summing Up

3.8 References and Suggested Readings

3.1 Introduction

The concern for environmental protection has received worldwide attention these days because it is a global issue and not an isolated problem of a particular area. It is our basic right to live in a healthy environment. In India, as elsewhere in the world, the problem of environmental degradation is fast assuming menacing proportions due to the problems of uncontrolled population growth, unplanned urbanization etc. If we look at the present scenario, we see that most of our rivers are getting polluted, deforestation in increasing at a rapid pace so as to provide land for housing and agricultural purposes to the increasing population, leakage of harmful gases from the industries thereby causing air pollution, improper handling of solid wastes etc have assumed menacing proportions. Even the

problems of noise pollution and land erosion have become common feature. It is true that in this present era of globalization, there must be developmental works but that should not be done at the cost of environment. We cannot allow the destruction of the environment which will ultimately lead to the destruction of all living creatures including human beings. So, the ultimate solution is to embark upon the concept of sustainable development, where efforts are given on both economic development as well as environmental protection. The crying need of the hour is to protect the deteriorating environment through proper policies, laws and management. Also, it must be borne in mind that it is the combined effort of all within the society which can help us in getting a good environment, which is a must for healthy living. In this unit, we will make an endeavor to study the Environmental Jurisprudence and Environmental Policies in India.

3.2 Objectives

This unit will introduce you all to the various provisions relating to environmental jurisprudence and the various important environmental policies in India. After reading this unit, you will be able to—

- *discuss* the efforts given for Environmental protection in ancient India;
- *understand* the Environmental protection under the Constitution of India;
- *analyse* the features of the Various Environmental Laws in our Country;
- *discuss* the importance of PIL (public interest litigation) in the field of environmental protection.

3.3 Environmental protection in ancient India

The concern for protection of the environment is not new; rather it has been in prevalence since time immemorial. During the ancient time, both human beings and the environment were regarded as inseparable and during that time, man never had the opportunity to pollute the environment indiscriminately as is seen today. In fact, during that time, man was afraid of the natural environment and never dared to damage the natural environment. If we look at ancient India, we find that the concept of environment found place in Kautilya's Arthasastra, where it was laid down that the rulers were duty bound to maintain and protect forests and its produce. It was also the duty of each individual to protect the nature. Mention can be also made here about Rigveda, which stipulated that the universe consists of five important basic elements like: earth, water, air, fire and ether. According to Atharvaveda, pure water is an effective medicine to cure different diseases and prevention of various diseases. Also, concern has been shown in Atharvaveda for the protection of wildlife and domestic cattle. Similarly, Samaveda also highlighted the importance of the sacrificial fire as it helps in keeping away mosquitoes and other insects. Under the Manusmriti, the cruelty towards animal was prohibited. If we look at the ancient mythology, we find that plants like tulsi and trees like peepal and banyan and animals like rats, elephants, tiger etc are worshipped like God and Goddess. Thus we see that the trees, water, land and animals gained important position in the ancient times. Even the great king Ashoka recognized the need of planting of trees. Thus, we see that since time immemorial, the natural resources like the rivers (Ganga, Yamuna etc) and trees (tulsi, peepal, banyan etc) and mountains etc were regarded as having divine powers and were worshipped and respected. Thus, the Vedas, Upanishads, Smritis upheld the necessity of environmental protection. Under the British

period, there was no such specific provision or enactment to deal with offence concerning environment. However, in 1860, for the first time, to control environmental pollution, certain punitive measures were incorporated into the Indian Penal Code, 1860. Apart from this, even the law of Easements was in operation during the British period so as to prevent environmental pollution. Thus, we see that the concern for Environmental protection was there since the ancient times.

3.4 Environment protection under the Constitution of India

Our Constitution has provided for environmental protection through various provisions. The Constitution of India obligates the 'State' as well as the 'Citizens' to "protect and improve" the environment. Also, if we look at the scheme of distribution of legislative powers between the centre and the states under our federal system of government, we find that there are ample provisions to make laws dealing with the environmental problems. Here, we will make an assessment of the various constitutional provisions related to environmental protection and will also try to throw light on various judicial pronouncements giving force to these Constitutional provisions.

Article 51-A was incorporated by the Constitution (42nd Amendment) Act, 1976. Article 51-A (g) states that it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers, and wild life, and to have compassion for the living creature. Thus, it is one of the fundamental duties of every citizen to protect the environment. The true scope of Article 51A(g) has been explained by the Rajasthan High Court in L.K. Koolwal v/s State case. We can cite here a part of court's verdict which will help us understand the whole scenario.

The true scope of the article has been explained by the Court as follows: We can call Article 51-A ordinarily as the duty of the citizens, but in fact it is the right of the citizens as it creates the right in favour of citizens to move to the court to see that the State performs its duties faithfully and the obligatory and primary duties are performed in accordance with the law of the land. Omissions or commissions are brought to the notice of the Court by the citizen and thus, Article 51-A gives a right to the citizens to move the court for the enforcement of the duty cast on State, instrumentalities, agencies, departments, local bodies and statutory authorities created under the particular law of the State. (P.S. Jaswal and N. Jaswal).

From the above discussion, it is clear to us that the court in the above mentioned case pointed out that right and duty actually co-exists and there cannot be any right without any duty and there cannot be any duty without any right. It needs mention here that in order to give effect to various constitutional provisions and other statutory provisions contained in various laws relating to environmental protection, the Supreme Court has upheld the view that the essential features of "sustainable development" such as the "precautionary principle" and the "polluter pays principle" are very much part of the environmental law of our Country. (P.S. Jaswal and N. Jaswal).

Article 48-A also deals with the protection and improvement of environment. It reads as follows: 48-A: Protection and improvement of environment and safeguarding of forests and wild life – The State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the Country. Thus, it is required that the State should take measures to protect and improve the environment.

Article 47 of the Constitution again provides that the State shall regard the raising of the level of nutrition and the standard of living

of its people and the improvement of public health as among its primary duties. The improvement of public health covers within its ambit protection and improvement of the environment without which public health cannot be assured.

Regarding these directive principles, Article 37 of the Constitution provides that: The provisions contained in this Part (Part IV) shall not be enforceable by any court, but the principles therein laid down are nevertheless fundamental in the governance of the country and it shall be duty of the State to apply these principles in making laws. Keeping in consonance with these principles, the judiciary from time to time has tried protecting and improving the environment. Here, we can again cite a case which proves the above statement. In Shri Sachidanand Pandey v/s State of W.B., the Supreme Court laid down that whenever a problem of ecology is brought before the Court, the court is bound to bear in mind Article 48-A and 51-A(g) of the Constitution. This is a testimony of the fact that these principles are given importance by judiciary while taking steps for environmental protection. Also, in T. Damodhar Rao v/s S. O. Municipal Corpn., Hyderabad, the court contended that in view of articles 48-A and 51-A(g), the protection of environment is not only the duty of citizen but it is also the obligation of the State and all other State organs including the courts.

It is pertinent to mention here that the provisions of Parts III and IV dealing with fundamental rights and directive principles respectively are supplementary and complementary to each other and plays a pivotal role in environmental protection. Now, let us have a look at the fundamental rights which provided for environmental protection. Article 21 of the Constitution guarantees all persons right to life and personal liberty. From time to time, different judicial pronouncements were made which expanded the meaning of this Article and thus the Right to Life covers within its ambit the right to

live in a proper environment. The first indication of this fact that the right to live in a healthy environment is a part of Article 21 was evident in the case of R. L. and E. Kendra, Dehradun v/s State of U.P. Again, in M. C. Mehta v/s Union of India (popularly known as oleum gas leakage case), the Supreme Court made it clear that the right to live in pollution free environment is a part of fundamental right to life under Article 21. Also, in T. Damodhar Rao v/s S. O. Municipal Corporation, Hyderabad, a clarion call was given by the Andhra Pradesh High Court when it observed that the slow poisoning by the polluted atmosphere caused by environmental pollution and spoliation should also be regarded as amounting to violation of Art. 21 of the Constitution. Thus, the above discussion makes it clear that the right to live in a healthy environment was specifically declared to be a part of Art. 21 of the Constitution by various judicial pronouncements. Some other landmark judgements in this line are: L. K. Koolwal v/s State; Charan Lal Sahu v/s UOI; Subhash Kumar v/s State of Bihar etc. (P.S. Jaswal and N. Jaswal).

Another landmark case is that of Vellore Citizen's Welfare Forum v/s UOI (popularly known as T. N. Tanneries case), where the apex court held that in view of the constitutional provisions contained in articles 21, 47, 48-A, 51-A(g) and other statutory provisions contained in the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981 and the Environment (Protection) Act, 1986, the "precautionary principle" and the "polluter pays principle" are part of the environmental law of the country. (P.S. Jaswal and N. Jaswal).

It has further been clarified that if the government plans for the construction of large dam or any other project, without making proper environmental impact assessment (EIS), and due to this if there is displacement of persons from their habitat which deprives them of their livelihood, then that can be declared as

unconstitutional being violative of Art. 21 of the Constitution. However, the judiciary in India has been very cautious in reconciling the environmental interests with that of the developmental process and this approach of the judiciary is in consonance with the concept of sustainable development. Here, we can cite the case of M. C. Mehta v/s UOI (popularly known as Taj Mahal Case), where the Supreme Court again followed the path of sustainable development. Thus, above discussion makes it crystal clear that development is not antithetical to environment and our judiciary has always given recognition to this fact.

Article 19(1)(a) guarantees every citizen the fundamental freedom of speech and expression. It needs mention here that most of the environmental jurisprudence has developed in our country through judicial activism. Most of the cases in this direction came through PIL (public interest litigations), where people exercised their freedom of speech and expression. Freedom of press also comes within the ambit of Article 19(1)(a) and we all know the fact that in our country, media has played a critical role from time to time in moulding the public perception about environmental issues. In M. C. Mehta v/s UOI, where the tanneries were discharging effluents from their factories thereby polluting river Ganga, the court issued directions for the closure of those tanneries which have failed to take minimum steps required for the primary treatment of the industrial effluents. Also, in M. C. Mehta v/s UOI, the Supreme Court directed the closure of certain industries which were not showing any progress regarding the installation of air pollution control system. Similarly, in S. Jagannath v/s UOI, the Supreme Court held that sea beaches and sea coast are gift of nature and thus any activity polluting the same cannot be permitted.

It needs mention here that Writ jurisdiction is conferred on the Supreme Court under Article 32 and all other High Courts under

Article 226 of the Constitution. Under these provisions, both the Supreme Court and High Courts can issue any orders or writs like that of habeas corpus, mandamus, prohibition, quo warranto and certiorari, whichever is appropriate in a particular situation. Here we need to understand one thing is that the writ jurisdiction of the High Court is wider in scope because Supreme Court can issue these only for the enforcement of fundamental rights whereas the High Courts can issue these for the enforcement of fundamental rights or for any other purposes. In our country, most of the environmental jurisprudence has developed through judicial activism, development of the concept of PILs (public interest litigations), and through writ jurisdiction. All these factors together gave impetus to environmental jurisprudence with human rights approach. We can cite here examples of few cases which can clarify what we have discussed above just now. In accordance with the concepts of judicial activism, PILs (public interest litigations) and writ jurisdiction, the judiciary has ordered the municipalities to construct proper drainage system for the maintenance of health and preservation of the sanitation and environment (L. K. Koolwal v/s State AIR 1988), removal of industries from residential areas (V. Lakhmipathy v/s State AIR 1992), appointed special panel to assess the availability of technology for controlling vehicular pollution (M. C. Mehta v/s UOI, 1991), ordered to stop quarrying in certain areas (R. L and E. Kendra, Dehradun v/s State of U.P), has shifted the stone crushing units outside the urban cities, the use of primary treatment plant by the tanneries and other riparian industries has been made compulsory to prevent the pollution of the river water (M. C. Mehta v/s UOI, 1988), prevented the use of public park for any other purpose or construction (Bangalore Medical Trust v/s B. S. Mudappa, 1991) etc. From the above discussion of various cases,

it is evident that judicial activism under the writ jurisdiction has expanded the wings of the higher judiciary and the judiciary from time to time has used these writs for the protection of the environment. (P.S. Jaswal and N. Jaswal).

3.5 Indian Penal Code, 1860, Code of Criminal Procedure, 1973, and Environment Protection

3.5.1 Indian Penal Code, 1860, and Environment Protection

Indian Penal Code, 1860 makes various acts affecting the environment as offences. Chapter XIV of the Indian Penal Code containing sections 268 to 294-A deals with the various offences affecting the public health, safety, convenience, decency and morals. Thus, we can understand that the purpose of chapter XIV is to safeguard us by making those acts punishable which defiles the environment and thus threaten the life of the people. Section 268 of the IPC defines public nuisance and Section 290 provides for punishment for public nuisance and thus under these provisions environmental pollution can be controlled. It needs mention here that under Section 268 of IPC, noise pollution can also be controlled. Sections 269 to 271 deal with negligent acts likely to spread infection of diseases dangerous to life, a punishable offence. Sections 272 to 276 deals with the adulteration of foods, drinks and drugs and section 277 can be used to prevent water pollution in certain cases. Similarly, under sections 426, 430, 431 and 432 of the IPC, environment can be protected. Section 278 of the IPC says that whoever voluntarily vitiates the atmosphere in any place so as to make it noxious to the health of persons shall be punished with fine.

Thus, we see that there are lots of provisions of environmental protection under IPC.

3.5.2 Code of Criminal Procedure, 1973 and Environmental Protection

The Code of Criminal Procedure, 1973, under Section 133 to Section 143, deals with various provisions concerning environment protection. Section 133 of the Code of Criminal Procedure deals with cases of public nuisance wherein the magistrate has been empowered to pass order for the removal of public nuisance.

Self-Asking Question:

Environmental jurisprudence in India has human rights approach. Discuss.

……

……

……

Stop to Consider:

What is PIL (public interest litigation):

Public Interest Litigation is an exception to the general rule that only the person whose right has been violated or infringed, can file petition before the court. The Supreme Court has allowed Public Interest Litigation at the instance of public spirited citizen who can file a petition before the court for the enforcement of rights of person who is in custody or of a class or group of persons who due to various reasons like that of disability, or poverty or due to socially or economically disadvantaged position, find it difficult to

approach the court for redressal of grievances. In such case, any member of the public can initiate an application on behalf of the victim, praying for appropriate direction, order or writ from the High Court under Article 226 and in the case of breach of fundamental right, in the Supreme Court under Article 32, thereby seeking judicial redress for the legal wrong or legal injury caused to such person or group of persons. However, the judiciary while settling these cases has always given attention to the fact that both environmental protection and developmental works go on parallelly, each without hindering the other process. Thus, keeping in consonance with this principle, even hazardous industries were also permitted to be established, however with the necessary precautionary principles.

3.6 Various Environmental Laws in our Country

If we look at the increasing number of environmental litigations in India, we can understand that it speaks volume about the concern of the judiciary and legislature in finding out effective and proper remedies for environmental pollution. It is the result of judicial activism that the right to pollution free environment has been included under Article 21 of the Constitution. Now, let us have a look at the various Environmental Laws in our Country. They are:-

- The Environment (protection) Act, 1986.
- The Water (prevention and control of pollution) Act, 1974.
- The Air (prevention and control of pollution) Act, 1981.
- The National Environmental Tribunal Act, 1995.
- The National Environment Appellate Authority Act, 1997.
- The Wild Life (protection) Act, 1972.

- The Wild Life Conservation Strategy, 2002.
- The Indian Forest Act, 1927.
- The Forest (Conservation) Act, 1980.
- The Noise Pollution (regulation and control) Rules, 2000.
- The Public Liability Insurance Act, 1991.
- The Mines and Minerals (regulation and development) Act, 1957.
- The Insecticides Act, 1968.
- The Factories Act, 1948.
- The Disaster Management Act, 2005.
- The Biological Diversity Act, 2002.
- The Civil Liability for Nuclear Damage Act, 2010.
- The Atomic Energy Act, 1962 etc.

Above cited are some of the important laws in the field of environmental protection in our country. Let us discuss some of these laws in brief now.

- **The Environment (protection) Act, 1986:-** The United Nations Conference on the Human Environment was held at Stockholm from 5th to 16thjune, 1972, and this piece of legislation has been influenced by Stockholm Conference. It needs mention here that the United Nations Conference on Environment and Development which met at Rio de Janeiro from 3rd to 14th June, 1992, again re-affirmed the declaration adopted at Stockholm on June 1972. Thereafter, an Act has been passed in India which provides for the protection and improvement of the environment. The objectives of this Act are: protection of environment, improvement of environment and prevention of hazards. Thus, the basic aim of this piece of legislation is to protect and improve

environment and also bring greater awareness among people. Not only that, this Act also puts possible deterrent control over the polluters of environment by making them liable to penal actions. It has been provided in the Act that subject to the provisions of this Act, the central government shall have the power to take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of the environment and preventing, controlling and abating environmental pollution. This Act is regarded as a protective and progressive socio-economic enactment.

- **The Water (prevention and control of pollution) Act, 1974:-** This Act has also been influenced by the Stockholm Conference in which the Indian delegation played a vital role. This is a special legislation meant to deal with the measures necessary for the prevention and control of water pollution. The objectives of this Act are: to provide for prevention and abatement of water pollution, to provide for the establishment of Central and State Water Prevention and Control of Pollution Boards, and, to provide for conferring on such boards powers and assigning to such boards functions relating thereto. Actually, the problem of pollution of rivers and streams has received greater attention over the years as a result of the growth of industries and also due to increasing urbanization. It has therefore become essential to ensure that the domestic and industrial effluents are not to be discharged into the water without adequate treatment. It is because such discharges would render the water unsuitable for drinking and other purposes. Thus, this Act has been passed and the preamble to the Act lay

down that it is an Act to provide for the prevention and control of water pollution and the maintaining or restoring of wholesomeness of water.

- **The Air (prevention and control of pollution) Act, 1981:-** With the increasing industrialization and urbanization, the problem of air pollution has begun to be felt because various pollutants are discharged through industrial emissions, from various human activities connected with traffic, heating use of domestic fuel etc. All these have a detrimental effect on the health of the people as also on animal life, vegetation and property. In fact short term studies conducted by the National Environmental Engineering Research Institute, Nagpur, have confirmed the steadily increasing level of air pollution in some of the cities of our country. Moreover, the Stockholm Conference of 1972 where India too participated, decisions were taken to take appropriate measures for the preservation of the natural resources, which also includes preserving the quality of air and control of air pollution. Thus, this Act has been passed so as to provide for the prevention, control and abatement of air pollution. It deals with Central and State Boards for the prevention and control of air pollution, their constitution and their powers and functions. It also deals with various provisions of prevention and control of air pollution and the power to give instructions for ensuring standards for emission from the automobiles. The Act also deals with the restrictions on use of certain industrial plants which include persons carrying on industry etc not to allow emission of air pollutants in excess of the standards laid down by the State Board. And also the Act

deals with penalties and procedure for the failure to comply with certain provisions of the Act.

- **The National Environmental Tribunal Act, 1995:-** It has been a matter of concern as to how to provide relief in accident cases arising from the activities involving hazardous substances. There are cases seeking compensation for the damages caused to human health, property and the environment. The United Nations Conference on Environment and Development held at Rio de Janeiro in June 1992 has called upon the states to develop national laws regarding liability and compensation for the victims of pollution and other environmental damage and where damage is caused while handling hazardous substances. Thus, there was the need of a National Environmental Tribunal to deal effectively with cases arising from the industrial accidents and disasters. These tribunals can provide effective relief and compensation for the damages caused to human health, property and the environment. Thus, this Act has been passed to provide for strict liability for the damages arising out of any accident occurring while handling any hazardous substance and for the establishment of a National Environment Tribunal for effective and expeditious disposal of cases arising from such accidents and to give the necessary relief and compensation for such damages.

- **The Wild Life (protection) Act, 1972:-** It has been a matter of grave concern that there is rapid and continuous decline of various wild animals and birds. Some of the species have already become extinct and others too are in the verge of being so. Thus, need was felt for a

comprehensive legislation which would provide for the protection of wild animals and birds. Thereafter, this Act has been passed to provide for the protection of wild animals, birds and plants and for matters connected therewith, with a view to ensuring the ecological and environmental security of the country.

- **The Indian Forest Act, 1927:-** Forests constitute a very important part of our environment and serves various useful purposes. However, the forest resources are threatened by various human encroachments for both commercial and household needs. As a result of population explosion and unplanned urbanization, there has been pressure on our forest resources and thus this Act has been passed to protect our forests. As per the preamble of this Act, this is an Act to consolidate the law relating to forests, the transit of forest produce and the duty leviable on timber and other forest produce.
- **The Noise Pollution (regulation and control) Rules, 2000:-** This Act deals with various provisions for the regulation and control of noise pollution. It deals with provisions like, ambient air quality standards in respect of noise for different areas or zones, responsibility as to enforcement of noise pollution control measures, restrictions on the use of loud speakers, consequences of any violation in silence zone/area etc.
- **The Factories Act, 1948:-** This Act was enacted way back in 1948. However, after the Bhopal Gas Tragedy case, the Parliament incorporated amendment into the principal Act in 1987 through which special provisions on hazardous industrial activities have been inserted in the Act. Under the amended Act, every occupier of any

hazardous unit is liable to disclose the health hazards involved to the workers and also should disclose risks associated.

- **The Public Liability Insurance Act, 1991:-** This Act was passed to provide immediate relief to the victims of an accident caused by hazardous substances.
- **The Mines and Minerals (regulation and development) Act, 1957:-** This Act was passed with the intention to promote mines and minerals development but realizing the devastating environmental impact, the Parliament amended the Act in 1986. The amended Act now provides measures for greater environmental sensitivity while carrying out the mining works.

Thus, we have discussed above some very important environmental laws and policies in our country. It is clear from the above discussion that there is no dearth of efforts for environmental protection in our country. It is pertinent to mention here that the existence of these environmental policies have significantly changed how the environmental issues are addressed. While the challenges still remain but these policies have helped in protecting the ecosystems and in promoting sustainable practices to a large extent. It has fostered increased international co-operation and technological innovation for sustainability. Also, these policies helped in creating public awareness and participation. However, certain obstacles or challenges are faced in the effective execution of the environmental policies which hampers the implementation of the environmental policies. These challenges are like: lack of awareness about the environment, lack of education among the people, corruption, overpopulation etc. Thus, the need of the hour is to develop public awareness on the matter because environmental protection needs the joint efforts of all the members of the society.

Check Your Progress:

1. Discuss the various provisions for environmental protection under the Constitution of India.

2. Explain in brief various Environmental Laws in our Country. How they are helpful in protecting our environment.

3. Discuss the role of judiciary in protecting environmental rights with special reference to Public Interest Litigations.

Self-Asking Question:

The problem of environmental degradation is a social problem. Discuss.

……..

……..

……..

3.7 Summing Up

From the above discussion, it is clear to us that various efforts have been taken in our country from ancient times for environmental protection and preservation. However, despite these attempts it is unfortunate to note that environmental degradation is happening at a rapid pace. Actually, growing industrialization, urbanization and developmental works are resulting in encroachment on the environment. We have discussed above that our judiciary while protecting the environment have always laid stress on the concept of sustainable development, that is, our judiciary left no stone unturned to make a compromise between both economic development and ecological protection. Both are essential in these days of globalization, where economic development is a must. Without developmental works, we will be lagging behind. However it must

be kept in mind that while going for development, we must strike a proper balance between development and environment. We have discussed above various Constitutional provisions relating to environmental protection and also discussed various laws prevailing in our country dealing with environment. We can sum up by saying that there is no dearth of laws for environmental protection. Need of the hour is to make people aware of environmental degradation and the need of environment preservation through imparting environmental education.

3.8 References and Suggested Readings

- Jaswal, P. S. and Jaswal, N. (1999) *Environmental Law*. Allahabad Law Agency.
- Tripathi, S. C., (2008). *Environmental Law*. Central Law Publications
- Divan, S., & Rosencranz, A. (2022). *Environmental law and policy in India: cases and materials*. Oxford University Press.
- Mehta, M. C. (1999). Growth of environmental jurisprudence in India. *Acta Juridica*, 71.
- Dari, S. S., & Sharma, R. (2014). An overview of environmental jurisprudence in India. *J. Gen. Manage. Res*, *1*(1), 1-13.

---×---

UNIT- 4

ENVIRONMENT AND CIVIL SOCIETY

Unit Structure:

4.1. Introduction

4.2. Objectives

4.3. Understanding the Concept of Civil Society

4.4. Global Environmental Issues

4.5. Environmental Challenges and Civil Society's Role

4.6. Environmental Movements and Civil Society Efforts in India

4.7. Challenges Faced by Civil Society Organisations

4.8. Recommendations

4.9. Summing Up

4.10. References and Suggested Readinmgs

4.1 Introduction

Civil society organisations (CSOs) and Non-governmental organisations (NGOs) play an important role in formulating and implementing the policies related to the environment. They act as vital partners with the government and engage in ensuring environmental protection, addressing climate change, loss of biodiversity and pollution. Civil society at present is playing a major role in addressing environmental issues by educating people through generating awareness, advocating for policy change, generating data and conducting research, providing solutions, lobbying, carrying out activism, creating pressure for change, and acting as a watchdog and holding the government accountable for prioritizing the environment in the policy framework. Civil society helps to push for meaningful change, advocating for environmental justice, supporting sustainable practices, and ensuring that

governments and businesses prioritise the planet's well-being. Civil society plays a crucial role in advocating for new laws, policies, and strategies to address climate change. It helps hold governments accountable for their promises, points out when government responses to climate change lack coordination, and ensures that national policies don't overlook the needs of the poor and vulnerable. As global climate talks progress slowly, developing countries are taking the initiative to create their policies to combat climate change.

Civil society has recently been working as a critical component of environmental governance. Its strategic importance is associated with its role in filling the gaps between policy frameworks and grassroots realities. As an important factor in environmental governance, civil society has a greater role in enhancing democratic participation, accountability and cooperation. The involvement of civil society in environmental governance helps the state in achieving desired sustainable environmental outcomes, which helps in improving the policies of environmental governance.

Environmental governance encompasses policies, frameworks, rules, and norms, and the decision-making process involved in managing and controlling the environment and the natural resources available. Environmental governance helps identify the policy gaps and threats early, develop sound environmental policies, strategies, and legislation and helps the state implement these policy changes at global, regional, national and local levels. Good environmental governance helps in maintaining a healthy and prosperous planet for all living entities now and in the future. The environmental challenges in contemporary times have become drastic because of the anthropogenic activities of humans at a mass level. However, these issues can be solved and regulated with collective efforts at the global and national levels. The environmental concerns are not

limited to just a region or country; they have become transnational. One environmental challenge emerging in one country can shift to another country and lead to tensions and repercussions.

4.2 Objectives

After going through this unit you will be able to—

- *understand* the concept of civil society and its components;
- *explore* the role of civil society in environmental protection and advocacy;
- *know* the successful environmental initiatives driven by civil society.

4.3 Understanding the Concept of Civil Society

The concept of civil society dates back to the writings of classical Greek and Roman thinkers such as Aristotle and Cicero. Aristotle is often credited with first using the term. During that time, the term was understood to be synonymous with political institutions. However, in modern discussions, it has evolved to represent a completely different idea, now seen as an independent entity separate from the state. Civil society is generally defined as the space outside the realm of family, market, and state. There is no single definition of civil society. It means different things to different authors.

The concept of "civil society" is crucial to discussions about philanthropy and civic involvement. It highlights that civil society is complex and difficult to define, as it refers to both how public life should function and the social actions that happen within voluntary groups like nonprofits. Nonprofit organisations, like all groups in society, are shaped by three main systems: economic, political, and

social. These organisations offer people the chance to be involved in civic life, practice democratic principles, and take on moral responsibilities. A matrix is used to break down the different aspects of civil society, helping nonprofits understand their role and assess how strong civil society is in a particular area. This matrix can also guide organisations in aligning their goals with actions that promote positive social change.

Civil society is closely linked to political systems that ensure fairness, protect citizens' rights, and focus on the welfare of all people, especially the disadvantaged. Within these systems, social relationships thrive through active community groups that encourage voluntary participation and hold government and businesses accountable for their actions. These groups aim to promote the common good, with a special focus on including marginalised individuals.

Civil society includes organisations like schools, advocacy groups, churches, and professional associations. These groups play many roles: they inform citizens, monitor the government, propose new policies, provide services to underserved communities, and protect people's rights. By doing so, they hold both government and private entities accountable and help create a more just and inclusive society.

Charles Taylor defined civil society as "a web of autonomous associations independent of the state, which bind citizens together in matters of common concern, and by their existence or actions could affect public policy". Schmitter defined civil society as "[a] set or system of self-organised intermediary groups". Similarly, *the Concise Oxford Dictionary of Politics* defined civil society as "the set of intermediate associations which are neither the state nor the (extended) family; civil society therefore includes voluntary associations and firms and other corporate bodies."

The components of civil society include a variety of organisations and groups that are independent of the government. Some of the key components are:

- Non-governmental Organisations
- Community-based Organisations
- Advocacy Groups
- Trade associations
- Media and News Organisations
- Voluntary Associations
- Religious Groups

Civil Society serves several Functions, which are highlighted in brief below-

- Civil society delivers services to the vulnerable sections of the population that are downtrodden and marginalised, often overlooked by the government.
- Civil society organisations become the voice of the poor and needy and advocate for their interest, influencing policy decisions.
- The civil society promotes harmony and cohesion in society by fostering inclusivity in the society.
- Civil society holds the government accountable for their action plans and demands transparency in the system.

Civil society is often described as a space separate from government activities where people engage in social interactions for common purposes. These activities can be voluntary and are driven by shared values or objectives. Bratton's definition focuses on community cooperation and voluntary associations, which highlights the participatory nature of civil society. Cohen and Arato expand on

this by defining civil society as groups that express common ideas or take actions that demand accountability from governments. The membership of civil society is extensive, encompassing a wide range of actors:

The **NGOs** stand out as prominent players in the context of environmental governance. These organisations work to advocate for causes, implement on-the-ground solutions, and engage in various activities with diverse scopes ranging from local to global. NGOs are central to this discussion because they play an essential role in shaping environmental governance. The variety of NGOs in this space includes:

- **Local NGOs:** Community-level organisations working on immediate, localised environmental concerns.
- **National and regional NGOs:** Advocating for policies that affect specific countries or regions.
- **International NGOs:** These often operate globally and influence international governance processes related to environmental issues.

The 1992 Rio Earth Summit led to the adoption of Agenda 21, a document outlining a framework for sustainable development. While the term "civil society" is not explicitly mentioned in Agenda 21, the document recognises civil society groups as key stakeholders in environmental governance. The Commission on Sustainable Development (CSD), which works to implement Agenda 21, classifies civil society into various "Major Groups." These groups are:

- Women
- Children and Youth
- Indigenous Peoples and Communities
- NGOs

- Workers and Trade Unions
- The Scientific and Technological Community
- Business and Industry
- Farmers

Self-Asking Questions:

Why do you think civil society is important in our society?

……

……

……

Check Your Progress:

1. What do you mean by Civil Society? What are its functions?
2. What are the components of Civil Society?
3. Do you think that civil society is working for the common good?

4.4 Global Environmental Issues

Our current environment is going through a difficult phase as a result of human activity, mostly related to industrialisation and urbanisation. The environmental issues poses a major threat to the earth's and the environment's sustainability. The disparities in the developmental agendas that nations are following are the cause of the complicated environmental problems that exist today. The greenhouse effect, global warming, biodiversity loss, desertification, ozone layer depletion, acid rain, oil spills, the disposal of hazardous waste, and other problems are examples of global environmental difficulties. These problems provide severe challenges and threats to the planet's health and well-being.

Extreme weather events, rising sea levels, and climate change are all consequences of deforestation and the use of fossil fuels. The ecosystem and human health are being harmed by pollution levels, which are also increasing resource contamination. As a result of habitat destruction, overexploitation, and ongoing biodiversity loss, the ecosystem is becoming less resilient. Because of their interconnectedness, all of these problems require coordinated international efforts to address and find solutions that prioritise conservation, renewable energy, sustainable habits, and legislative changes to preserve the environment and provide a brighter future for humanity. Listed below are some of the environmental issues:

- **Greenhouse effect:** The Earth's temperature has been rising constantly due to the "greenhouse effect." A greenhouse is a glass structure used to grow plants by trapping sunlight, which warms the interior. Sunlight (energy) passes through the glass, where it is absorbed and then released as heat. However, unlike sunlight, heat radiation cannot escape through the glass, causing the temperature inside to rise, even on cold days. This trapped heat keeps the plants warm. This process of heat buildup inside a greenhouse is called the greenhouse effect.

Now, you might wonder where the "glass" is around the Earth that prevents heat from escaping. In reality, the Earth's atmosphere acts like the glass in a greenhouse. The greenhouse effect on Earth has been happening for millions of years, and it is what makes life possible here. The atmosphere, made up of water vapour and tiny water particles, is responsible for over 95% of the Earth's natural greenhouse warming. This effect keeps the average global temperature at around 15°C, which is necessary for life. Without this natural greenhouse effect, the Earth's temperature could drop to about -17°C, which would make life as we know it impossible.

- **Loss of biodiversity:** Biodiversity refers to the variety of life forms, including plants and animals, in a particular area. It is an essential part of the environment and is crucial for human survival. The loss of biodiversity can have severe consequences on ecosystems and human well-being.

There are three main types of biodiversity: species biodiversity, genetic biodiversity, and ecosystem biodiversity. Species biodiversity refers to the different species of plants, animals, and microorganisms in a region. Genetic biodiversity refers to the variation within a species, such as different breeds of animals or plant varieties. Ecosystem biodiversity refers to the variety of ecosystems, such as forests, lakes, deserts, and coral reefs.

The loss of biodiversity is primarily caused by human activities. Habitat loss is one of the main reasons, as forests, wetlands, and other natural areas are destroyed for development, agriculture, and industry. This forces many species to lose their homes, causing their populations to decline. Pollution also harms biodiversity, as it can poison habitats, making them uninhabitable for many species. Overuse of natural resources is another significant factor, where humans take more from nature than can be replaced, such as hunting animals, cutting down trees, and overfishing. Finally, the introduction of foreign species to new areas can harm local species. These foreign species can outcompete native plants and animals, often leading to their decline.

In short, human actions like destroying habitats, polluting, overusing resources, and introducing new species are causing a rapid loss of biodiversity. This is a serious issue that needs attention to protect our natural world.

- **Desertification**: Desertification refers to the process where land loses its ability to support plant life, eventually transforming

into a desert. When land becomes barren and unable to grow plants, it is considered a desert. Desert landscapes are characterised by sparse vegetation and stunted plant growth. A large portion of the Earth's land area, approximately 132.4 million square kilometres, is affected by desertification, largely due to human activities such as overuse and mismanagement of land resources. Some key causes of desertification include over-cultivation, overgrazing, deforestation, and salt accumulation from irrigation.

Over-cultivation is one major contributor to desertification. In farming, soil is ploughed to remove weeds before planting, but this process exposes the fertile soil beneath to erosion from wind and water. This erosion can make the land barren, particularly in areas with low rainfall. Additionally, ploughing causes the soil to lose more water through evaporation, making it even drier and more vulnerable to erosion.

Overgrazing is another cause of desertification. Deserts already have limited vegetation, primarily grasses and herbs, which are suitable for grazing. When livestock like goats and cattle graze excessively, they remove this protective vegetation, exposing the soil. The movement of grazing animals further loosens the soil, making it more prone to erosion by wind and water. This results in a vicious cycle of desertification as the soil becomes increasingly damaged.

Deforestation also plays a significant role in desertification. Forests help prevent soil erosion by holding the soil together with their roots and helping retain water. However, forests are often cleared for agriculture, timber, firewood, or construction materials. When trees are removed, the land becomes more vulnerable to erosion, leading to the degradation of the land and, over time, desertification. It is primarily caused by human activities like over-cultivation, overgrazing, and deforestation, all of which lead to the

loss of soil fertility and the eventual transformation of land into deserts.

- **Oil Pollution:** Oil pollution refers to the presence of oil in water bodies, which can be particularly harmful when oil spills occur. These spills are one of the most visible forms of ocean pollution, and every marine transport vessel carries the risk of causing an oil spill. The most common cause of oil spills is leakage during the transportation of oil by sea. This can happen in both small-scale, frequent leaks and large-scale, accidental spills. Oil spills can also occur during offshore oil production. In addition, oil slicks often form along the supply routes used by oil tankers, and motorboats can release oil into the water as well. On average, one ton of oil is spilled into the ocean for every 1,000 tons of oil transported by sea.

Oil spills have severe effects on marine life. Within hours of an oil spill, fish, shellfish, and plankton often die from suffocation or metabolic problems. Birds and sea mammals can die within a day of an oil spill. The death of these organisms causes significant damage to marine ecosystems. Oil spills also harm algal blooms, either poisoning them or suffocating them. This depletes the oxygen in the water, which leads to the death of large numbers of fish and other marine creatures due to a lack of oxygen.

Oil spills also affect life on land, particularly in coastal areas. Bays, estuaries, shores, reefs, and beaches, especially near large coastal cities or at the mouths of rivers, are more vulnerable to oil spills. These areas are also popular for recreational activities like bathing, boating, angling, diving, and rafting, all of which are disrupted by oil spills. As a result, local tourism and hotel businesses in these coastal regions suffer significant losses.

Self-Asking Questions:

Why is the world facing an extreme environmental crisis?

……

……

……

Check Your Progress:

1. What are the major global environmental crises?
2. What are the factors behind the environmental challenges?
3. Do you think we as individuals contribute to environmental sustainability?

4.5 Environmental Challenges and Civil Society's Role

Environmental degradation and people's rights are interconnected because issues like pollution, deforestation, loss of biodiversity, and climate change harm the basic rights of people like their right to food, shelter, health and life. It is important to provide the vulnerable groups with their fair share of environmental benefits. The right to a clean environment should be available to all irrespective of race, income and region. People should get the chance to participate in environmental decisions which can ensure sustainability. Environmental justice has become an important issue around the globe, where marginalised communities often suffer the most from environmental damage, resource exploitation, and the impacts of climate change. This idea of environmental justice focuses on ensuring that environmental benefits and burdens are shared fairly and that communities have a right to be involved in decisions about the environment. In countries like India and Sri

Lanka, civil society organisations (CSOs) have played a key role in promoting environmental justice by tackling the root causes of environmental inequality and empowering communities to push for policies that are sustainable and fair.

Over time, it has become clear that governments often struggle to implement effective policies and strategies for managing natural resources. As a result, environmental management plans now involve a broader range of stakeholders, including local communities, NGOs, and the private sector. The development of policies is influenced by a country's ecological, economic, political, and cultural context.

Rising environmental issues, coupled with shrinking government resources, have led to demands for greater transparency and accountability in environmental management. Public interest and pressure from donors have also played a role in this shift. To address urgent environmental challenges, decentralisation and a more active role for civil society are becoming increasingly important. There is also a growing demand for good governance, sustainable practices, and a higher level of public awareness about environmental issues.

Recognising the importance of collaboration between governments, organisations, and communities is key to making local participation more effective. NGOs have been crucial in raising environmental awareness and educating the public, particularly in developing countries. They have also helped local communities develop and manage sustainable tourism projects, using their expertise to ensure the protection and care of natural resources.

India faces major environmental problems, such as deforestation, air and water pollution, and land degradation, which hit marginalised groups the hardest. Rapid industrialisation, urban growth, and

unsustainable resource use have led to large gaps in environmental conditions, with low-income and rural communities facing the worst impacts. Civil Society Organisations (CSOs) in India have been crucial in advocating for environmental justice, raising awareness, organising protests, and using legal means to hold polluters accountable.

New forms of NGO participation have significantly altered the way international environmental policies are made. The global community has started to realise that effective global action requires the active involvement of various stakeholders in both policymaking and implementation. NGOs play a crucial role in global environmental governance in several key ways: First, NGOs provide expert advice and analysis, offering politicians access to alternative ideas that might not be available through typical bureaucratic channels. They also present intellectual competition to governments, as many NGOs possess superior analytical and technical expertise, allowing them to respond more quickly than government officials.

NGOs are also effective in mobilising public opinion. They can influence public attitudes through campaigns and extensive outreach. Moreover, they represent the voiceless, helping to amplify the concerns of those who are not adequately represented in policymaking processes.

In addition, NGOs are involved in service provision, delivering specialised technical knowledge on specific topics when needed by government officials and participating directly in operational activities. They also contribute to monitoring and assessment, strengthening international agreements by overseeing negotiations and tracking compliance by governments.

Finally, NGOs contribute to the legitimisation of global decision-

making mechanisms. By broadening the information base for decisions, they help improve the quality, credibility, and legitimacy of the policy choices made by international organisations. Overall, the involvement of civil society in global environmental governance has greatly enriched the process, leading to stronger and more effective outcomes in various contexts.

4.6 Environmental Movements and Civil Society Efforts in India:

Non-governmental organisations, community-based groups and environmental activists play an important role in addressing the environmental crisis and advocacy. Through their constant efforts, they promote sustainable practices and create awareness about harmful practices like deforestation, pollution, climate change, etc and try to mobilise citizens to take action. Civil society influences public policy through advocacy, engaging in lobbying and participating in environmental negotiations. Civil society is essential for driving environmental justice, protecting ecosystems and biodiversity, and creating equitable conditions for a sustainable environment.

The civil society in India has emerged as a significant contributor to restoring environmental justice by advocating sustainable development and living. They are responsible for mobilising action, protest and movement in response to dam-induced displacement, mining in tribal areas or ecologically sensitive locations. Civil society has combined advocacy, legal action, community engagement, and research to promote ecological sustainability by holding both the state and corporations accountable for their actions. Civil society's participation, especially in environmental governance in India, has helped the state to address the issues more effectively

in a democratic way, leading to decisions and agreements on environmental issues. The civil society organisations have always focused on educating the community on issues and the impact of environmental degradation on health and livelihood. The campaigns led by CSOs have created public awareness and pressured the state to implement strong environmental regulations on issues like air pollution, water conservation, and waste management. The Wildlife Protection Act,1972; The Environmental Protection Act, 1986; the Forest Rights Act, 2006, etc, are some of the laws and policies that are the result of civil society advocacy in India. Some of the case studies of the environmental movement in India, which were carried out at the mass level, are given below.

Narmada Bachao Andolan (Save the Narmada Movement):

A prominent example of community-led environmental activism in India is the Narmada Bachao Andolan (NBA), which began in the 1980s to oppose the construction of large dams on the Narmada River. These dams would have displaced thousands of indigenous people from their homes. Led by activists like Medha Patkar, the NBA highlighted the environmental and social consequences of the dams, advocating for the rights of those affected and promoting sustainable water management.

The NBA started in 1985 to protest the lack of proper resettlement and rehabilitation (R&R) policies for over 250,000 people who would be displaced by the dams. Initially called the Narmada Dharangrast Samiti (Committee for Narmada Dam-affected People), the movement was renamed the Narmada Bachao Andolan (NBA) in 1989. The Narmada Valley project, which was planned in 1946, began in 1978 after the Narmada Water Disputes Tribunal gave its final approval. The project aimed to build 30 large dams,

135 medium dams, and 3,000 small dams along the 1,312-km stretch of the Narmada River in Madhya Pradesh and Gujarat. The Sardar Sarovar Dam, the tallest at 138.68 meters, would submerge 38,000 hectares of land, displacing 244 villages and 250,000 people.

The NBA's campaign raised awareness about the harmful social effects of large infrastructure projects and led to policies that required environmental impact assessments and community consultations before such projects could move forward. Despite facing resistance from government officials, the movement inspired other civil society organisations to join in advocating for environmental justice.

Stop to Consider:

The Environmental Protection Act of 1986:

The Environmental Protection Act of 1986 is a key legislation enacted by the Government of India in the aftermath of the Bhopal Gas Tragedy to provide a comprehensive framework for environmental protection. It empowers the central government to take all necessary measures to protect and improve the quality of the environment, prevent hazards to human beings, plants, and animals, and coordinate actions across states. The Act allows the government to set standards for emissions and discharges, regulate industrial locations, and restrict harmful substances. It also provides for penalties for non-compliance and grants authority to inspect, collect samples, and enforce environmental safeguards. The Act serves as an umbrella legislation under which other environmental laws in India operate.

Chipko Movement:

The Chipko Movement is a non-violent campaign to protect India's forests, which began in the 1970s in response to the growing destruction of forests for commercial and industrial purposes. As government-controlled exploitation of natural resources threatened the livelihoods of villagers, they turned to Mahatma Gandhi's method of satyagraha (non-violent resistance) to stop the destruction. The movement quickly gained traction across India, evolving into a nationwide campaign called the Chipko Movement.

The name "Chipko" comes from the way protesters physically hugged trees to prevent loggers from cutting them down. One of the key aspects of the movement was that it was largely led by women from rural areas who depended on forests for their survival. To spread their message to a largely rural population, Chipko activists often used folk songs. Despite being a local and grassroots movement, Chipko spread across India, with each group organising independently.

As the movement grew, several prominent leaders emerged, taking the cause to the national stage. The most notable among them was Sunderlal Bahuguna (1927-2021), whose efforts were deeply connected to the Chipko Movement and had a significant impact on India's environmental policies, especially regarding the conservation of forests and natural resources in the Himalayan region.

The Chipko Movement became internationally recognised and highlighted the environmental challenges in the Alaknanda catchment area of the mid-Western Himalayas. The roots of the movement can be traced back to the early 20th century, during the colonial period, when people protested against the British forest policies. The central demand during these earlier protests was that

the benefits of the forests, particularly access to fodder, should be granted to local communities.

Silent Valley Movement:

The Silent Valley Movement was a key environmental campaign in India during the late 1970s and early 1980s, aimed at protecting the Silent Valley, a pristine and ecologically rich tropical rainforest in Kerala's Palakkad district, from a proposed hydroelectric project. This movement is seen as a turning point in India’s environmental conservation efforts and inspired similar struggles across the country. It began in 1973 when activists launched the campaign to prevent the construction of a hydroelectric dam that would flood the Silent Valley Reserve Forest and damage its unique ecosystem.

The movement was led by environmentalists, scientists, and residents who were concerned about the loss of the forest's biodiversity and the displacement of indigenous communities. The campaign played a crucial role in preserving this area of dense tropical forest, which was home to a wide variety of plants and animals.

The Silent Valley Movement succeeded in stopping the hydroelectric dam project, which would have caused severe environmental damage and displaced local tribal communities. The movement raised awareness about the ecological importance of the Silent Valley and the dangers posed by the dam. It also helped foster a broader understanding of environmental issues and the need to protect natural habitats. The success of the Silent Valley Movement had a significant impact on shaping India’s environmental policies.

Appiko Movement:

The Chipko Andolan (Hug the Trees Movement) in the Himalayas inspired people in the Uttara Kannada district, Karnataka, to start a similar movement to protect their forests. In September 1983, villagers in Salkani “hugged the trees” in Kalase forest, a local action known as "appiko" in Kannada. This movement, called Appiko Andolan, sparked a new environmental awareness across southern India.

In August 1983, the residents of Sirsi Taluk asked the forest department to stop cutting trees in the Bilegal forest in the Hulekal range. However, their plea was ignored, and tree-cutting continued, causing soil erosion and drying up water sources. The loss of the Salkani forest disrupted the local supply of fuelwood, fodder, and honey, while spice-garden farmers in Uttara Kannada also faced difficulties due to the loss of forest resources. In 1950, more than 81% of the Uttara Kannada district was covered in forests. However, the government labelled the area as "backwards" and began a process of "development," which led to the creation of industries such as pulp and paper mills, plywood factories, and hydroelectric dams. These industries overused the forest resources, and the dams flooded large forest and agricultural areas. By 1980, the forest cover had shrunk to just 25% of the district, displacing many local people, especially the poor. The conversion of natural forests into teak and eucalyptus plantations dried up water sources and affected the forest dwellers.

The Appiko Movement aims to protect the Western Ghats and has spread across southern India. The movement focuses on three main goals: saving the remaining tropical forests in the Western Ghats, restoring damaged areas, and promoting the rational use of forest resources to reduce pressure on them. The movement’s slogan, “Ubsu” (save), “Belesu” (grow), and “Balasu” (rational use),

reflects its objectives. To raise awareness, the movement uses various methods such as foot marches, slide shows, folk dances, and street plays. It has achieved significant success, with the state government banning the cutting of green trees in some areas, allowing only dead, dying, or dry trees to be felled. The movement has spread to all four hill districts of Karnataka and has the potential to extend to the Eastern Ghats in Tamil Nadu and Goa.

The Appiko Movement highlights the constructive phase of people's movements, showing how depleted natural resources can be restored. It promotes an equitable sharing of resources to benefit forest dwellers and aims to create a balanced relationship between people and nature. The movement advocates for a redefined concept of development, one that ensures a sustainable, lasting economy for the future.

Bishnoi Movement:

In the 1700s, in Khejarli village in Rajasthan, Amrita Devi and the local Bishnoi community made a heroic stand to protect their sacred trees from being cut down by the king's soldiers. The king of Jodhpur, Maharaja Abhay Singh, wanted wood to build a new palace and sent soldiers to cut down the trees in the area. When Amrita Devi saw the soldiers chopping down the trees, she rushed forward, hugged the first tree, and was struck down by an axe. As she lay dying, she said, “A chopped head is cheaper than a felled tree.” Inspired by her sacrifice, over 360 people from nearby villages joined in, trying to stop the destruction. Tragically, they, too, were killed in the effort to protect the trees.

When the king learned of this, he deeply regretted the loss of life and personally visited the village to apologise. He promised never to ask the Bishnois for wood again, to protect the khejri trees, and to

ban hunting in the area. The village was renamed Khejarli in memory of this event. The Bishnois, a community founded in the 15th century by Swami Jambeshwar Maharaj, have always prioritised nature conservation. Their teachings include compassion for all living beings and a ban on cutting trees. They have a long history of protecting wildlife, particularly blackbucks and chinkaras, in their green, thriving forests near Jodhpur. The Bishnois' devotion to protecting nature is so strong that they even bury their dead as they refuse to use wood for cremation.

The Bishnois' actions prove that their commitment to safeguarding nature is so deep that they are willing to sacrifice their own lives to protect the environment and wildlife around them. There's a saying among them: "A tree saved at the cost of one's head is a good deed."

Self- Asking Questions:

Why are environmental movements important?

……

……

……

Check Your Progress:

1. What role does civil society play in addressing environmental issues?

2. Give an account of major environmental movements carried out in India.

3. How does the environmental movement help in addressing environmental issues?

4.7 Challenges Faced by Civil Society Organisations

Limited Funding and Resources:

One major challenge for Civil Society Organisations (CSOs) is the lack of consistent funding and resources. Many rely on donations and grants, which can be unpredictable and limit what they can achieve. It further restricted CSOs' ability to operate and create a network to plan long-term conservation efforts, making it harder for them to tackle environmental issues effectively. Poor support and funding challenge the ability of the civil society to operate effectively.

Political and Regulatory Constraints:

CSOs also face political opposition, as environmental activism often conflicts with development goals. Governments may view efforts for environmental justice as barriers to economic growth, leading to regulatory restrictions or harassment of activists. For example, CSOs opposing tourism and industrial projects in ecologically sensitive areas have faced political backlash, which has made it harder for them to work freely. Restrictive laws and bureaucratic barriers weaken environmental governance and can silence critical issues.

Social and Cultural Barriers:

Environmental justice initiatives often face social and cultural challenges, particularly in rural areas where environmental knowledge may be limited and where the community’s focus is on immediate economic survival. In these situations, it is difficult for CSOs to convince people to prioritise environmental protection over short-term economic benefits. Moreover, issues like caste and

ethnic divisions may further complicate efforts to create unified movements for environmental justice.

4.8 Recommendations

The role of civil society is immense in environmental conservation and its preservation. The CSOs have done a lot in recent years to bring environmental justice, however, they face numerous challenges which need to be addressed effectively. There is a need for increased governmental support and international funding to civil society associations engaged in environmental justice efforts, as they lack funding and need regulatory support. Increased funding can strengthen the local initiatives and help the CSOs in expanding their reach and impact. The government's support and collaboration help the CSOs work for environmental justice. There is a need to develop sustainable community-based models on the part of civil society organisations for better resource management, such as community forestry or eco-tourism, which can offer economic benefits while preserving natural resources. This can reduce the dependency on harmful practices, promote environmental conservation and create livelihoods for rural populations. To safeguard environmental activists and civil society organisations (CSOs) from political harassment, governments need to enhance legal protections for those involved in environmental advocacy. By creating clear rules and protections for public interest litigation and activism, governments can create a safer environment for these groups to operate. This would encourage more organisations to engage in environmental justice work, knowing they won't face retaliation for their efforts. Strengthening these legal protections is essential for empowering activists and promoting positive change for the environment.

Self-Asking Questions:

How can we, as individuals, work for environmental justice?

……

……

……

Check Your Progress:

1. What are the challenges faced by civil society organisations?

2. Recommend ways through which civil society can be strengthened to work better.

3. Do you think that the government can help civil society organisations in their efforts to bring environmental justice?

4.9 Summing Up

After reading this unit you have learnt that environmental governance refers to the policies, frameworks, rules, and norms, as well as the decision-making process involved in managing and controlling the environment and the natural resources available. Environmental governance helps in identifying the policy gaps and threats at an early stage, developing sound environmental policies, strategies, and legislation and helps the state implement these policy changes at global, regional, national and local levels. Civil society is generally defined as the space outside the realm of family, market, and state. There is no single definition of civil society. It means different things to different authors. Civil society is complex and difficult to define, as it refers to both how public life should function and the social actions that happen within voluntary groups like nonprofits. Nonprofit organisations, like all groups in society,

are shaped by three main systems: economic, political, and social. The sustainability of the environment and the Earth is under serious threat due to the environmental crisis. The complex environmental issues at present are the result of the discrepancies in the developmental agenda that countries are adhering to. Global environmental issues include issues like the greenhouse effect, global warming, biodiversity loss, desertification, depletion of the ozone layer, acid rain, oil spills, dumping of hazardous waste, etc.

The idea of environmental justice focuses on ensuring that environmental benefits and burdens are shared fairly and that communities have a right to be involved in decisions about the environment. Environmental management plans now involve a broader range of stakeholders, including local communities, NGOs, and the private sector. The development of policies is influenced by a country's ecological, economic, political, and cultural context. There is a need for increased governmental support and international funding to civil society associations engaged in environmental justice efforts, as they lack funding and need regulatory support. Increased funding can strengthen the local initiatives and help the CSOs in expanding their reach and impact. The government's support and collaboration help the CSOs work for environmental justice.

4.10 References and Suggested Readings

- Bernauer, T., & Betzold, C. (2012). Civil Society in Global Environmental Governance. *The Journal of Environment & Development*, *21*(1), 62-66.
- Breitmeier, Helmut, and Volker Rittberger. 2000. *"Environmental NGOs in an Emerging Global Civil Society."* In The Global Environment in the Twenty-First

Century: Prospects for International Cooperation, edited by Pamela Chasek. Tokyo, Japan: United Nations University. Available from http://www.ciaonet.org/ book/chasek/

- Carter, N. (2007). *The Politics of Environment* (2nd ed.). Cambridge.
- Charnovitz, Steve. 1996. *"Participation of Non-Governmental Organizations in the World Trade Organization."* University of Pennsylvania Journal of International Economic Law 17: 331-357.
- Harren, B. G., & Izu, A. B. (2002). The Role of NGOs and Civil Society in Global Environmental Governance. *Research Gate*, 1-24.
- International Institute for Environment and Development. (2012, 05 21). *Civil society plays a key role in policymaking in climate change*.
- https://www.iied.org/civil-society-plays-key-role-policymaking-changing-climatePace, William. 2002. *"Governance and Civil Society."* Paper read at UNEP Civil Society
- Consultation on International Environmental Governance. February 12, 2002.
- Peterson, T. J., &Til, J. V. (2004). *The Pacific, and Challenges Facing American Nonprofits Defining Characteristics of Civil Society.* The International Journal of Not-for-Profit Law, *6*(2).
- Porter, Gareth. 2000. *Global Environmental Politics*. Boulder, CO: Westview Press Wapner, Paul. 2000. *"The Transnational Politics of Environmental NGOs: Governmental,*
- *Economic, and Social Activism."* In The Global Environment in the Twenty-First Century: Prospects for

Internaitonal Cooperation, edited by Pamela Chasek. Tokyo, Japan: United Nations University. Available from http://www.ciaonet.org/ book/chasek

- Weiss, Thomas G. 1999. *"International NGOs, Global Governance and Social Policy in the UN System."* Globalism and Social Policy Programme, STAKES, Helsinki, Finland. Available from http://www.stakes.fi/gaspp/occasional%20papers/gaspp3-1999.pdf
- United Nations Environmental Programme. (n.d.). *Why Civil Society Matters*. Why Civil Society Matters. https//:unep.
- UN. 1994. Agenda 21: *The United Nations Programme of Action for Sustainable Development.* New York: United Nations. Available from
- http://www.un.org/esa/sustdev/agenda21text.htm

---×---

BLOCK- IV

ENVIRONMENTAL ISSUES IN NORTH EAST INDIA

Unit 1: Issues Relating to Water and Forest Resources in Northeast India

Unit 2: Environment and Natural Disasters

Unit 3: Environment and Anthropogenic Disasters

Unit 4: Environmental Hazards and Social Vulnerability

Unit 5: Indigenous Communities and CPR

UNIT- 1

ISSUES RELATING TO WATER AND FOREST RESOURCES IN NORTHEAST INDIA

Unit Structure:

1.1 Introduction
1.2 Objectives
1.3 Issues relating to forest and water resource in Northeast India
    1.3.1 Flood
    1.3.2 Hydropower Projects
    1.3.3 Deforestation
1.4 Man-environment relations in Northeast India within a larger context
    1.4.1 Commodification
    1.4.2 Alienation
    1.4.3 Role of the State
1.5 Summing Up
1.6 References and Suggested Readings

1.1 Introduction

Human being's relation with nature is not of hierarchy of species, but of symbiosis. Before moving to the issue of water and forest resources in Northeast India, we need to see how land, water and forest resources forms crucial components of our environment. It is this concern for environment and climate change that has turned into a global issue pushing forward certain common agenda reflected in Sustainable Development Goals (SDGs). We all know how young climate activist Greta Thunberg made headlines for speaking about

this crucial issue in global platforms. While discipline like environmental engineering study application of technology to protect and promote better environment; geography looks into geomorphology, soil and other aspects of physical environment and so on. As student of Political Science we also look into environmental issues and concerns and explore relation between environment and development, what role does state play in defining this relationship, how lives of women, vulnerable communities are affected and so on. Before moving on with the chapter further, it is also important to note that the term 'resource' is politically loaded and owes its origin in the colonial period. It is with the advent with colonial powers in the region in early half of 19th century that land, water, forest turned into resources and therefore the term 'resource frontier' came to define the political course of the region for all future. It is not only political conquest that defined colonial rule but also how capital tamed nature and space to serve the purpose of the European Empire. Tea, timber, jute, crude oil etc. were promoted for their commercial profitability during this era. Roads, railway lines were built keeping in mind this larger interest. Little changed in the post-colonial period, the areas of the region remained an enigma for the new nation state, so many political arrangements like Sixth Schedule, Excluded and Partially Excluded areas were made. But in terms of resource appropriation the Indian state's role remained unchanged. This led to a range of movements around issues of ethnic identity, resources sharing, relations with the nation state in the 80s and the 90s in the region. This context of Northeast and its social, political and economic identity built around land and forest resource is important for us to remember in the background.

With this backdrop, in this unit we shall learn briefly about the issues relating to forest and water resources in Northeast India, moving on to see the man-environment relation in the region in

contemporary times, besides the issues and challenges attempt to provide a more holistic understanding. Finally summarizing the chapter and reiterating some points highlighted. Through this unit we will aim to understand the symbiotic relation between environment and human existence, arguing that to fully understand the debate of climate change we need to move beyond focusing on issues but try to make a larger theoretical connection between the discourse of development and environment. Northeast India is a vast geographical area with diversity in terms of practices, culture, issues and also ethnic composition. What this unit aims is to throw some light on certain issues which student pursuing Social Science should take cognizance of. An attempt needs to be made to establish theoretical connections and situate the debate in the global political economy of land, forest and resource use.

1.2 Objectives

After reading this unit you will be able to—

- *understand* the issues related to forest and water resource in northeast India;
- *analyse* the issues like flood, hydropower projects, deforestation etc.;
- *examine* the man environment relations in north east India.

1.3 Issues relating to forest and water resource in Northeast India

In popular imagination Northeast India, apart from being a disturbed area, is also known to be an ecological hotspot with flora and fauna

often unknown outside. In contemporary time we see a few issue which often catches our attention when it comes to looking at the region both from within and also from outside. Climate change being the overarching issue, we often see issues related to flood, dams, deforestation, population growth, infrastructural development of unprecedented scale and many more. These are not exhaustive issues, but some which has been a source of major policy and academic debate in the region.

1.3.1 Flood

The northeastern region is also endowed with a rich network of rivers and water body system. Both Brahmaputra and Barak feed major river basins and are often referred to as lifeline of the region. The yearly inundation of the Brahmaputra flood plain has been a perennial problem faced by the region. Specially in areas like Dhemaji and Lakhimpur of Assam flood plays a major role in determining the life choices of people. However, indigenous agrarian practices grew around the seasonality of flood and both shared a bond which was replenished at regular intervals. The variety of certain paddy like *bao* (which is cultivated in low lying area to withstand prolonged flooding)is a testimony of such knowledge and mutually complementary relationship, where taming of the river was never the intent. The siltation left behind by such flood replenished the soil despite causing damage to human and property was something accepted in popular cultural practices. But in official discourse flood and erosion has negative impact on overall development of the state, its nature different from other states in terms of its duration and also magnitude. Rastriya Bari Agog (RBA) accessed that about 39.58% of the total land area of Assam is flood prone, which is about 9.40% of total flood prone area of the country. Average annual area affected by flood is 9.31

Lakh Ha. Official estimate stated a loss of Rs. 771 crores in flood during 2004. From a scientific point of view Valdiya (1999) provided a very in-depth explanation of failure in controlling flood, reasons which he attributes to active faults in this 'geodynamically restless region' (p. 1301). This has also been the concern for those expressing apprehensions about construction of big dams in the region.

Being a riparian, downstream area of the surrounding hill states, Assam bears the worst burnt of flood, mostly from rivers flowing out of Arunachal Pradesh and Meghalaya. Conditions like cloud burst also leads to flash flood in the state causing large scale devastation. One such incident with major loss of human and livestocks was reported in 2011 in Dhemaji and Lakhimpur district with Gainadi and Jiadol rivers overflowing their banks. Flood and erosion are integrally linked and more than 4.27 Lakh ha of land has been washed away by Brahmaputra and its tributaries since 1950. There is also reporting on increased width of the river unto 15.00 km at some places during to bank erosion and this has also negatively impacted the rural economy of the state. Government of Assam for instance with assistance from ADB now has Flood and River Erosion Management Agency of Assam (FREMAA) with projects in flood affected areas in Dibrugarh, Kaziranga, Palashbari for construction of river bank protection, embankments, flood proofing etc. as infrastructural measure including poverty reduction programmes, livelihood improvement schemes for people of flood affected areas. If we attribute mindless development that is promoted in the regions one of the reasons for environmental havocs, it is worth pondering w*ho is benefitting from this*? Even in colonial history and political debate of the time beginning with 1940s itself, there has been a concern for overcoming the problem of flood in Assam, often regarded as a perennial cause of sorrow and

suffering of its peasantry. In fact, river engineering was strongly advocated by none other than Gopinath Bordoloi by way of construction of dams to address the issue (Saikia: 2015). Saikia in this article provides an interesting argument built around jute as a commodity linking it production to political economy of flood management in Assam beginning in the colonial period.

Many states of the region are now facing climate crises with depletion of drinking water sources, drying up of natural sources like springs, rivulets, like in Meghalaya where many studies point to the lack of proper waste management where human and industrial wastes are washed into rivers and streams. Already polluted rivers like the Wah Umkhrah and Wah Umshyrpi running through Shillong city carries various kinds of wastes into the Umiam Lake downstream. The state undertook a scheme to clean these two rivers but later on was discontinued (Majaw, B 2023). Lack of proper management of flood in the region is also attributed 'lackadaisical attitude of the officials handling flood control work' as in Assam, and failure of the government to address issue of encroachment of wetlands in and around Guwahati city particularly (Mukhim 2014).

The Brahmaputra river system which is perennial in nature has come into focus with the plans for mega hydropower projects which has led to newer conflicts in the name of and environmentalism. The Lower Subansiri Hydropower project is one such site of conflict which became a defining political movement around the question of mega dams.

1.3.2 Hydropower Projects

According to official data northeast India has a close to 60,000 MW hydro power potential, with Arunachal Pradesh alone with 50,328 MW potential. Hydropower sector is seen to be a huge investment

potential which would not only benefit industries and manufactures, but also ensure overall development in the region by creating jobs, establishment of educational institutions, healthcare facilities, connectivity, boost tourism etc. India envisages to be carbon neutral by 2070 and therefore harnessing hydro power, as a clean, green and sustainable source is crucial to meet the ever increasing energy demand in the country. Close to 22 hydropower projects are operation in the region with an installed capacity of 4309 MW, besides some 7 projects with installed capacity of 3157 MW are under construction. Umiam Stage 1 project in Meghalaya with an installed capacity of 36 MW was in fact commissioned in the year 1965, likewise the Loktak in Manipur with a capacity of 105 MW was commissioned in 1983. In Assam, the Khandong power project on Kopili River was commissioned way back in 1984. While these were projects mainly under the purview of state agencies like NHPC, NEEPCO etc, many newer projects are also coming with private investment too like Heo, Tato 1, Kalai 2, Dibbinetc in Arunachal Pradesh. In Sikkim already some projects like Dikchu, Tashiding under private sector initiative have been commissioned.

Hydropower projects in the region, as we see has not only a huge potential for investment and development but is also not something newly initiated. With its decades old history, the whole debate in the official circle is how to make it more efficient by addressing the challenges, a cause of concern is that the percentage of 'exploitation of Hydropower potential in North eastern region is just about 6.9%'. Some key challenges that have been identified are delays in land acquisition due to problem of land records, environmental clearance, lack of infrastructure like roads, etc, including rehabilitation and resettlement issues. From a developmentalist perspective of capitalist growth in the region, hydropower is a resource which we need to harness to ensure that we catch up in the global race for

progress which could be ensured only through roads, huge infrastructure and meeting the ever increasing energy demand. This will not only help in the process of nation building but usher in development in the region by providing jobs, better connectivity.

But large dams comes with its own risks. The very fact that hydropower is pushed as a non-polluting and environmental friendly source of energy is something that we need to critically look into. First concern is that the region is a high risk seismic zone with recorded history of high magnitude earthquakes. Second is the fear amongst people of such riparian areas is that of flash flood resulting from sudden release of water from dams. Academic like Sanjib Baruah (2012) also expresses concern around 'enclosure of the water commons' (p. 41) besides questioning the 'unevenness of distribution of potential gains and losses'. The politics around hydropower projects and construction of dams in the region is debated across circles but what is also important is how well the region is prepared to handle unforeseeable events of disasters and second equally concerning is the coming up of private players as investors, how far will they bear the ecological responsibility and address the human-nature interaction.

Stop to Consider:

Sustainable Development Goals

The UN in 2015 adopted 17 Sustainable Development Goals (SDGs) with the aim to achieve global peace and prosperity. The 17 SDGs are;

1. No Poverty
2. Zero Hunger
3. Good Health and well-being
4. Quality education

5. Gender equality
6. Clean water and sanitation
7. Affordable and clean energy
8. Decent work and economic growth
9. Industry, innovation and infrastructure
10. Reduced inequalities
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate action
14. Life below water
15. Life on land
16. Peace, justice and strong institutions
17. Partnerships for the goals

The target is to realize these Goals by 2030. These Goals are more ambitious in nature, yet reflects a global commitment to achieving these by framing some action oriented strategies and building synergies.

1.3.3 Deforestation

The name Northeast India invokes a panoramic view of land and water pristine with dense forest and traditional communities living in complete harmony with nature. In fact, to some extent this is true, with more than 75% of the geographical area of some of the states of the region covered with forest. According to the India State of Forest Report 2021 five states in northeast i.e. Mizoram (84.53 percent), Arunachal Pradesh (79.33 percent), Meghalaya (76 percent), Manipur (74.34 percent) and Nagaland (73.90 percent) has forest cover as a percentage of total geographical area. According to the current ISFR 2023 data, Arunachal Pradesh has a forest cover of 78.67 percent, Assam has 36.10 percent, Manipur (74.29%),

Meghalaya (75.65%), Mizoram (85.34%), Nagaland (73.72%), Tripura (72.33%). But the cause of concern is loss of forest cover over a period of ten years which has caught lot of attention. A total of 3698 sq km of forest cover has been lost in the past decade and 1020 sq km in between 2019 and 2021. Mizoram recorded the highest loss of 1297 sq km, followed by Nagaland 1067 sq km. From this data it is implicit that there is massive deforestation that has been taking place in this region. Some studies point to an average forest loss of 10.49% in the decade from 2001 to 2021, with Nagaland with greatest percentage loss of forest cover in the same period (Guria et al. 2024) Interestingly some parts of Northeastern region like Assam, Meghalaya, Manipur, Tripura also showed highest tendency of forest fires and also highly susceptible to deforestation. National Green tribunal also has recently taken note of the loss of forest cover in the region. Drastic decline in forest cover further contributes to landslide, flood and environmental disasters. To understand the historical context of change in forest cover in Assam Sharma et al emphases the need to understand the dynamics of tea planation, addressing the need of demographic pressure and the state of agriculture. Deforestation in the region has been further exacerbated by timber smuggling, mining activities and also collection of firewood. Also many tribal societies in the region practices *jhum* cultivation which according to many studies contributes to ecological imbalances (Singh et al 2011; Borah and Goswami 1973). It leads to soil erosion, landslides, depletion of forest cover, causes forest fires etc. In fact, in order to understand the region more comprehensively and develop strategies for economic development, the Government of India appointed the Shukla Commission in 1997. One of its key aim was also to understand the implications of *Jhum* cultivation, it too pointed to the adverse effect of this practice. However, this practice is not just part

of tribal ethos and cultural choice but apt to the terrain where settled cultivation is not possible. Furthermore, it is also based on traditional knowledge practice based on human- environment symbiosis, important for maintaining crop diversities (Rawat et al: 2010) and also most follows a cropping duration of one or two years following by period where land is left fallow to regain its fertility. Many authors also views that *Jhum* cultivation should not be seen from a market oriented view geared towards profitability and increased productivity but take into count the cultural knowledge attached to the system and how the issue of sustainable development could be addressed (Das: 2006). Again, when we look into the larger debate around nature and women, we see that women had a primary role to play in the *jhum* economy and were less dependent on their male counterparts (Ganguly 1993). But over last many decades, there has been intense shift towards settled agriculture and expansion of irrigation schemes, seed and fertilizer subsidies, increasing mechanization and linking to agricultural markets (Maithani 2005) almost sidelining traditional practices like *Jhum* with its own socio cultural relevance ensuring local food security.

Human interference with nature has been exacerbated with population growth, infrastructural development, mindless expansion of urban spaces, mining activities, changes in climatic conditions attributed to climate crises. What we discussed are few of the broader challenges when we discuss Northeast India. A developmentalist vision guided by neoliberal conditionalities, capitalist greed of accumulation and a push for individualism might bring in newer challenges in years to come. There is a need for alternative to environment and development paradigm where issues of social justice, collective security and a harmonious relationship between human needs and environment could be ensured (Dutta: 2011). Who might have thought that major hub of Northeast, the

city of Guwahati, is now one of the cities with very poor AQI, making it second most polluted in the world. Air, water, noise, soil pollution, waste management including e waste etc have already turned into major issues that require immediate intervention from the state and even civil society groups.

Self-Asking Questions

As someone belonging from Northeast India, do you have any personal experience of witnessing any natural calamity like flood, cloudburst, drought etc? How your experience is linked to the larger issue of climate change?

……

……

……

……

1.4 Man-environment relations in Northeast India within a larger context

What we discussed in the previous section is a brief outlay of the issues pertaining to water and forest resource in the region. These issues have and will have wide repercussion in the socio economic and also political fabric of the region. Societies in northeast share an intrinsic relationship with nature with an emotional tie of belongingness with nature - land, water and forests. Traditionally this relation also involved practices of worship, resource management, conservation and also political struggles later on. It was around nature that most of the lives of the people and more particularly in the tribal societies were centered around. With ingress of modern state and a development narrative which rested on

individual life rather than that of a community, this symbiotic relationship underwent huge change. Community played a huge role in preserving the biodiversity by labeling certain spaces as scared , like Mawphlang, Mawmluh and Mawsmai scared groves in Meghalaya, which is no longer insulated from 'forces of development and change' (Nongbri 2006: 18) A change which we can refer to as commodification of land, water and forest resources, and subsequent alienation of people from these. Let us now discuss the issue relating to land, water and other natural resources in context of a global debate and how certain concepts could help us understand the debate better. Also important is to look into the role of the state in addressing these issues.

1.4.1 Commodification

The story of tea is a testimony of this change in relationship between land and people of the region, where capital came in as a definitive moment. It was during the colonial times, that tea was promoted in the region, a story which we are all aware of, and 'wasteland' was being allotted on lease to European capitalists. The history of tea in the region is well documented (Behal 2014; Sarma 2011). But what is crucial to understand that the categorization land based on its usage was purely done from a Western socio, economic and philosophical position of ownership and paternalism. This kind of rationale was unfound in the region where shifting and sustenance cultivation was the norm, and so was communal ownership. *Who owns the land* was not a question asked until the colonial rule and its land policies came about. While plains of the region more particularly the Brahmaputra valley had an early tryst with colonial powers, in the hill societies this was a much later political development. Along with tea, there were few more commodities around which capitalist relation of power and

exploitation came into the picture. The history of jute cultivation mainly in the Brahmaputra valley, for example, is tied to the commercial interest of colonial state which in turn also determined the future of flood control measures. Historian Arup Jyoti Saikia in this context argues that 'flood control in the valley began mainly as a means to protect this cash crop and expand agriculture in the low-lying areas'(Saikia 2015:1407). Tracing the history of jute production in the region, Saikia terms its commercial production in the Brahmaputra floodplains as 'empire's eastern-most jute frontier' after Bengal.

Self-Asking Question:

If you have not witnessed any such event, then why do you should be concerned about climate issues?

……

……

……

In colonial conquest Assam became a focus of commercial pursuit of timber, minerals, oil and many more items besides tea. It is another story how colonial governance saw huge tracts of land as lying fallow, as wasteland waiting for commercial interventions. They understood the need for turning these spaces in productive space for expansion of capital and also for catering to the need of colonial Britain. Similar is the story of discovery of crude oil and other mineral resources in the region. What was done through this expansion and turning the region into a resource frontier was linking it with global capital. Now one might argue, what is the harm in linking with global capital, everybody has the right to enjoy the

fruits of development and progress, reap the benefit of technology, of infrastructural development. People surely do, but the question is that the what price is to be paid for the loss of ownership of land, resource and identity. It is an uneven development agenda that this discourses pushes and where the problem lies. Besides the expansion of a system of capitalist production, traditional institutions also underwent huge change. Land, forest and other resources were 'commons' in many tribal societies were solely under the control of community, which was somewhat egalitarian in nature as it was more sustenance oriented rather than being profit oriented. Traditional institutions like *Dorbar*in Meghalaya, *Upa*in Mizoram, village and tribal councils determined regulations of natural resources and use of land and forest. In post-colonial period some efforts were made to protect the customary practices and tribal autonomy by special provision under the Sixth Schedule of the Indian Constitution, but loss of livelihood, anxieties around displacement and the future of such societies and its members have not been adequately addressed.

This is not to romanticize the customary laws and practices, ethnic exclusiveness and the sensing of othering, the lack of gender just principles in many of the communities. However, there existed communitarian principles guiding times of crises by providing relief, forging a sense of belongingness, where certain relations were still distant from being commodified, for e.g. village rehabilitation practices after flood or any other natural calamities, some equitable distribution of harvest, management of forest and other resources etc. But societies in contemporary times are undergoing huge changes in such increased impoverishment, change in ownership

patterns, the complicated relationship between traditional and modern formal legal system and so on (Fernandes 2011).

Self-Asking Question:

Can you think of some drivers of forest cover change in the regions?

……

……

……

……

In this context even agriculture practices like *Jhum* which was inalienable part of tribal life world was seen as primordial and therefore not environmentally sustainable. No reference was made to the fact that practices like these were based on traditional knowledge and know-how suited to local ecosystem and topography setting a mutually complimentary relationship. This transition towards more settled agricultural systems has led to the growth of individual ownership of property (Fernandes 2005; Barbora 2002) and hugely impacting socio cultural relations within these societies.

Check Your Progress:

1. Which of the SDGs takes up the issue of water and forest resources globally?
2. What is the policies adopted by Indian state to address the goals of climate change?
3. What is the progress made by the states of Northeast in achieving these goals?

1.4.2 Alienation

Second issue that we see in relation to land and forest resources in Northeast India, is that of alienation. Nature of colonial expansion in the plains and the hills were quite different in nature. The political and administrative mechanism designed for plains were not duplicated in the hills, of course the economic logic being primary. Contrary, something more exclusionary was instituted through various means, Inner Line was one such mechanism of maintaining this difference between the hills and the plains. While many see this as a defining moment of delayed development in the hill societies, forcing them to accept suzerainty of Assam for decades to come. This, we know, gave rise to various statehood movements emanating in different parts of the state which led to the formation of Mizoram, Meghalaya in subsequent times. The other side of the picture, is the rise of a regional elite in most of the hill societies. The elite mobilization in these areas was particularly against the atrocities inflicted on them at various point in history e.g. during the rise of a movement for a separate state of Mizoram, Assam government was labeled as being insensitive to the needs of the Mizo people and its failure to disburse famine relief in 1952 which led to the death of hundreds. Few notable descendants of tribal chieftains, and native with some access to cash, were able to accrue the benefits of modern education either in Guwahati or Calcutta which led to the rise of regional consciousness against exploitation and neglect. The memorandum submitted by Naga Club to the Simon Commission in 1929 put forward a case for self determination by all Nagas across the region and it fueled narrative around identity politics. This and many other events influenced the partition plan of this part of the British territory later in 1947. These local elites played an instrumental role in engaging the natives not only for a political solution to the issue of neglect and development

delays but also around the narrative of economic exploitation. Interestingly, while nationalist fervor against colonial exploitation along with the highhandedness of Assam in the regional political scenario fueled secessionist tendencies in whole of region defining its political trajectory and permanently being labeled as 'disturbed areas'. How well it could bargain with Indian state for greater benefit is still debatable. But for the purpose of this chapter, what we need to see is that in the post-colonial period, Indian state pumped in huge amount of money for development projects in the region, ministries were formed, committees were created to address the challenges of political and economic aspirations of the people. In this process, huge inflow of capital created a class of elites who came to define the political and power matrix in the region. They accrued huge benefits from these dole outs and carved a group of elites even in societies where class divide was virtually nonexistent. This is not to be oblivious of the fact that tribal societies and practices cannot be always counted as egalitarian, but the hierarchy that existed was not based on economic rationale rather clan based. Capital changed the very nature of this relation that existed in these tribal societies, which now saw a shift towards individual ownership from that of community.

Stop to Consider:

Commodification and Alienation:

Commodification: A commodity is a product with use and exchange value produced by any given society. Firstly it can satisfy human wants and second it has an exchange value, other commodities could be exchanged based on this value. Let us take the example of salt, which was bargained in the weekly markets in foothills of the region of the *Duars* even before the advent of colonial rulers. It was a commodity which was bartered with other

commodities from plains of Assam like lac, iron etc. Now, as we see commodity is a product with value which can be exchanged in a market. When we talk of commodification, we simply mean attaching a value to a product, which under a capitalist system of production could be anything tangible and intangible. So land, resource, water, even the air we breath could be categorized as a commodity by attaching a value to it. In many tribal societies of Northeast, land, resources, forests, water bodies were all managed by community with usufruct rights given its members. But with commodification, a value has been assigned to them, slowly leading to a crises in these societies.

Alienation: Is a concept which talks of separation of the self from the other. It is an in-depth philosophical debate around separation of the the subject and the object, found in works of G.W.F. Hegel (1770-1831) and Karl Marx (1818-1883). Broadly speaking, it when a person, a group or a society becomes alienated from the results of its own activity; to the nature in which it lives and also from other human beings (Bottomore 1983: 11). The term has found wider engagement in various discipline like philosophy, economics, psychiatry, and of course other social science disciplines. In context of Northeast India, it could be aptly used to understand a transition in the socio-economic, political and cultural life of the people, where their identity as being attached to land, commune and the ownership is under threat.

1.4.3 Role of the State

State's role in climate management and envisaging policies to address these issues are determined by a range of factors from international pressure, commitment towards global concerns and overall nature of the state itself. The colonial legacy was visible in

many policies initiated by the Indian state for instance in the forest polices. The irony is that while the colonial state's sole interest was generation of revenue which was done mainly through exploration and then exploitation of available forest, mineral and other resources, this legacy continued even after independence (Gadgil and Guha: 1989). In their subsequent work, Gadgil and Guha (1995) also discusses the role of the Indian state in natural resource utilization and importantly how it is 'possible to construct a development agenda that is at once in the interests of a majority of the people and of the country's environment' (p.6). The colonial state, given their sole aim of generating revenue, made various provisions to restrict access of people to hitherto free spaces like forests by converting them into Reserves, this was followed by various Acts which blatantly disregarded people's customary privileges over forests and resources. Again the colonial state, for instance, found *Jhum* practices as wasteful and this primitive and irrational practice was to be replaced with scientific, and long-term management of forests, by tuning them in reserves, the non-reserved areas were areas where shifting cultivation was permitted and these were designated as 'unclassed forests' (Malik 2003: 291). The role of forest management came in majorly to arrest deforestation, but ironically areas cleared for plantation didn't come into the discussion, Malik in her work provides us with an interesting trajectory of this in context of Garo hills of Northeast India including the role of Christian missionaries. Similarly, by tracing the evolution of forest policy, Nongbri (1999) shows how state control over forest has systematically eroded people's right over their resources. This has further disrupted the balance that communities traditionally maintained with their natural environment. This tendency, whose genesis was set in the colonial period itself, continued in post-independence period with overwhelming concern

for progress, development and optimal usage of resources be it forest, land, water bodies and so on. For instance, in case of Reangs of Tripura there was attempts to turn them into settled cultivators thereby widening social disparities nullifying the merit of *Jhum* cultivation as more self-sufficient (Sengupta 2013). Though some attempts were made to ensure protection to tribal and hill societies by way of Constitutional provisions by forming Autonomous District Councils (ADCs), creation of tribal belts and blocks, special provision for rights of people over land and resources, acknowledging the existence of traditional institutions and customary practices. However, the underlying assumption was that these institutions would soon give way to modern ones. This transition was visualized given the role of the state in promoting a particular developmentalist narrative. What probably wasn't envisaged, was how this would led to a different counter narrative in the region with large number of secessionist movements centering on resource sharing. In the process not only a sense of alienation emerged amongst marginalized section of society, they were also subjected to state repression. Many on the other hand also gained larger access to state power in this situation of chaos and a class of elites, with resource and power and political clout emerged. When we are trying to link issues around land, forest and water resources in Northeast India with climate change and environmental concerns, it could be a very fruitful exercise to broaden our understanding and look at the international conventions and treaties. UNFCCC was signed in 1992 at the UN Conference on Environment and Development, also known as the Earth Summit; the Kyoto Protocol signed in Japan in 1997; the Paris Agreement or the COP 21 was adopted in 2015 are some major landmarks.

Check Your Progress:

1. Why as students of Political Science it is essential for us to discuss issues of environment?
2. What are some of the emerging issues relating to water and forest resources in the region besides those that we discussed in the chapter?
3. What do you think about the role of the community, the traditional institutions in regulating these issues?
4. What policy measures would you suggest to address the emerging concerns around forest and water resources in the region?

1.5 Summing Up

After reading this unit you have learnt that it is true that like everywhere around the world, Northeast India is also witnessing huge ecological challenges. Given the nature of the societies in the region, these concerns around environment, ecology and development, spills into other interrelated areas of socio-economic and cultural life of the people. Today various issues like air pollution, contamination of soil, degradation of groundwater, biodiversity decline has turned into imminent crises, which is exacerbated given the fragile ecology and seen as an imposition. The role of a neoliberal state in promoting a particular fit- all developmentalist agenda has probably not able to address the socio economic inequalities and gaps which have widened. Ecologically responsibility was an inbuilt mechanism in many of the societies of the region. But state now has adopted a more technocratic and rational approach to address environmental concerns, thereby completely overriding the sentimental and primordial attachment to

forest, water and other 'commons' found in societies across the region. While there are voices for more community oriented approach to address these issues and in conservation efforts, this might prove to be a barrier to expansion of an extraction economy and private investments. Revenue generation from common property resources like forest, water, mineral reserves are slippery slopes, without community involvement social inequalities will only widen. Judicious use of these resources should not lead to abuse of nature, it needs to be guided by democratic principles where wellbeing of the most marginalized section of the society is addressed and taken care of. Environmental crises is a ticking bomb and if we don't learn from lessons elsewhere and forge global partnership and commitments, it could be a damage irreversible.

1.6 References and Suggested Readings

- Barbora, Sanjay (2002) 'Ethnic Politics and Land Use: Genesis of Conflicts in India's North-East', *Economic and Political Weekly*, Vol. 37, No. 13, pp. 1285-1292.
- Barpujari, H. K, (1977) *Political History of Assam,* Government of Assam: Gauhati.
- Baruah, Sanjib (2008) 'Territoriality, Indigeneity and Rights in the North-East India', *Economic and Political Weekly*, Vol. 43, No. 12/13, pp. 15- 19.
- Baruah, Sanjib(2012) 'Whose River Is It Anyway? Political Economy of Hydropower in the Eastern Himalayas', *Economic and Political Weekly*,Vol. 47, No. 29, pp. 41-52.
- Behal Rana P. (2014) *One Hundred Years of Servitude: Political Economy of Tea Plantation in Colonial Assam*, Tulika Books: New Delhi.

- Borah D. and N.R. Goswami (1973)'A comparative study of crop production under shifting and terrace cultivation (a case study in the Garo hills, Meghalaya)', Ad hoc Study 35, Agro-economic Research Centre for North East India, Jorhat.
- Botkin, D. and E. Keller (1995) *Environmental Science: Earth as a Living Planet*, John Wiley and Sons, Inc.: New York.
- Bottomore, Tom ed. (1983/1991) *A Dictionary of Marxist Thought*, Blackwell Publishers: Oxford.
- Cederlöf, Gunell(2014)*Founding an Empire on India's North-Eastern Frontiers 1790–1840: Climate, Commerce, Polity*, Oxford University Press: New Delhi.
- Das, Debojyoti (2006) 'Demystifying the Myth of Shifting Cultivation: Agronomy in the North-East', *Economic and Political Weekly*, Vol. 41, No. 47, pp. 4912-4917.
- Dutta, Dibyajyoti and JuktiRatnaSaikia eds (2011) *Environment and Development: Emerging Issues and Debates*, Planet Ink: Guwahati.
- Dutta, Akhil Ranjan (2011) 'Environment and Development: An encounter with the Hegemonic discourse' in Dutta, Dibyajyoti and JuktiRatnaSaikia eds (2011) *Environment and Development: Emerging Issues and Debates*, Planet Ink: Guwahati, pp. 40-53.
- Fernandes, Walter and Melville Pereira (2005) *Land Relation and Ethnic Conflict: The Case of Northeast India*, NESRC: Guwahati.

- Gadgil, Madhavand Ramachandra Guha (1989) 'State Forestry and Social Conflict in British India', *Past and Present*, 123, pp. 141-77.
- Gadgil, Madhav and Ramachandra Guha (1995) *Ecology and Equity: The Use and Abuse of Nature in Contemporary India*, Penguin: Delhi
- Ganguly J. B, (1993) 'The Status of Tribal Women in the post Jhumming State of Tribal Economy in Tripura' in Malabika Das Gupta (ed) *Status of Tribal Women in Tripura,* Vikas Publishing House: New Delhi, pp. 34-46.
- Guha, Ramachandra(ed) (1998)*Social Ecology,* Oxford University Press: Delhi.
- Guria, R., M. Misra, B. Baraj et al (2024) 'Examining the drivers of forest cover change and deforestation susceptibility in Northeast India using multi criteria decision making models', *Environ Monit Assess,*196:1098 https://doi.org/10.1007/s10661-024-13172-
- Karlsson, Bengt G., (2011) The Unruly Hills: A Political Ecology of India's Northeast, Berghahn Books:
- Kormondy, E. J. 1969) Concepts of Ecology, Prentice-Hall Inc: Englewood Cliffs: NJ.
- Maithani B. P.(2005) *Shifting cultivation in Northeast India: Policy, Issues and Options*, Mittal Publication: New Delhi.
- Malik, Bela (2003) The 'Problem' of Shifting Cultivation in the Garo Hills of North-East India, 1860–1970, *Conservation & Society*,Vol. 1, No. 2, pp. 287-315.

- Mukhim, Patricia (2014) ‘Floods in the North-East: Lack of Planning and Red Tape’, *Economic and Political Weekly*, Vol. 49, No. 42, pp. 21-23.
- Nongbri,Tiplut(1999) ‘Forest Policy in North-East India’, *Indian Anthropologist*, Vol. 29, No. 2 pp. 1- 36.
- Nongbri,Tiplut (2006)‘Culture and Biodiversity: Myths, Legends and the Conservation of Nature in the Hills of North-East India’, *Indian Anthropologist* , Jan-Dec Vol. 36, No. 1/2, pp. 1-21.
- Rawat, J. S., BomchakRiba and Teniya Rina (2010)‘Jhumming, a traditional lifestyle than merely a cultivation method’, *Current Science*, Vol. 98, No. 8, pp. 998-999.
- Saikia, Arupjyoti (2010) 'Imperialism, Geology and Petroleum: History of Oil in Colonial Assam', *Economic and Political Weekly*, Vol. 46, No. 11, pp. 48-54.
- ———- (2011) *Forests and Ecological History of Assam, 1826–2000,* Oxford University Press: New Delhi.
- ——— (2015) ‘Jute in the Brahmaputra Valley: The making of flood control in twentieth-century Assam’, *Modern Asian Studies*, Vol. 49, No. 5, pp. 1405-1441.
- Sengupta, Mayuri (2013) ‘Shifting Cultivation and the Reang Tribe in Tripura’, *Economic and Political Weekly*, Vol. 48, No. 40, pp. 59-65.
- Sharma, Jayeeta (2011)*Empire's Garden: Assam and the Making of Modern India,* Duke University Press: Durham.
- Sharma, Narayan M. D. Madhusudan and AnindyaSinha(2012)‘Socio-economic Drivers of Forest

Cover Change in Assam: A Historical Perspective', *Economic and Political Weekly*, Vol. 47, No. 5, pp. 64-72.

- Singh, B., S. J. Phukan, B. K Singh *et al* (2011) 'Conservation strategies for Nepenthes khasiana in the Nokrek biosphere reserve of Garo Hills, Northeast India', I*nternational Journal of Conservation Science,* Volume 2, Issue 1, pp. 55-64.
- Smith, R. L and T. M. Smith (2014) *Elements of Ecology*, Pearson Education.
- Valdiya, K. S. 1999 'Why does river Brahmaputra remain untamed'*Current Science*, 25 May Vol. 76, No. 10, pp. 1301-1305.

UNIT- 2

ENVIRONMENT AND NATURAL DISASTERS

Unit Structure:

2.1 Introduction

2.2 Objectives

2.3 What are Natural Disasters?

2.4 Impact of Natural Disasters on the Environment

2.5 Human activities Contributing to Natural Disasters

2.6 Judicial Interventions

2.7 Theories of Natural Disasters

2.8 Summing Up

2.9 References and Suggested Readings

2.1 Introduction

We know that a healthy environment is essential for our survival, health, and well-being. However, due to various human activities and natural calamities, our planet is facing increasing environmental challenges. Natural disasters, driven by powerful natural forces, often cause severe damage to the environment, leading to ecological imbalances. While we cannot prevent these disasters, understanding them enables us to better prepare and respond. In this unit, we will explore the environment and examine various natural disasters that contribute to environmental degradation.

2.2 Objectives

After reading this particular unit, the learners will be able to:-

- *understand* what natural disasters are;

- *describe* the Impact of Natural Disasters on the Environment;
- *analyse* how various human activities contribute to natural disasters;
- *examine* judicial interventions concerning natural disasters.

2.3 What are Natural Disasters

Natural disasters are sudden, extreme events caused by natural forces that result in damage to the environment, as well as harm to human lives and property. These types of disaster happen suddenly without any kind of prior warning and they are beyond human control.

Before discussing the different types of natural disasters, let us first understand what is meant by 'disaster'. According to the Merriam Webster dictionary, a disaster is defined as a sudden calamitous event bringing great damage, loss or destruction. Thus, a disaster is an event having unfavourable consequences and it is a potential threat to society. In the lexicon of the natural disaster management community, a disaster is a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses or impacts which exceed the ability of the affected community or society cope using its resources. According to the Centre for Research on the Epidemiology of Disasters (CRED), a disaster is a situation or event which overwhelms local capacity, necessitating a request to a national or international level for external assistance, an unforeseen and often sudden event that causes great damage, destruction and human suffering.

It is pertinent to mention here that natural hazards have their origins in the natural processes and not all natural hazards can be termed as a disaster. Disasters are those which affect the community and have social consequences that disrupt the societal functioning and cause various human and material losses. In other words, we can say that an event occurring in an uninhabited place is not a disaster because though natural hazard, but it has not influenced any people and their possessions. Similarly, a disaster can be avoided to some extent if a community has built sufficient protection against such an event.

We can mention here about different types of natural disasters, which are:-

- **Earthquakes–** These are the sudden shaking of the Earth's surface as a result of movements in the Earth's crust. These cause immense damage to the environment leading to damage of human lives and properties. Earthquakes occur when the Earth's tectonic plates shift suddenly for some reason.
- **Floods–** Floods refer to the overflowing of water into the land that is normally dry, and this overflowing is caused by various reasons like that of heavy rainfall and melting snow.
- **Droughts–** Droughts are caused by the shortage of water, due to the absence of rainfall. It leads to various problems, including crop failures.
- **Cyclones or hurricanes–** Cyclones or hurricanes refers to powerful storms with strong winds and heavy rains. It results in environmental damage.
- **Wildfires–** Sometimes uncontrolled fires in the forests and grasslands are caused by factors as dry conditions, lightning or other causes. It again leads to an environmental disaster.

- **Landslides–** Sometimes due to heavy rainfall or earthquakes, there occurs a sudden fall of rocks or mud down the slope and this results in various other problems.
- **Tsunamis–** They refer to the huge ocean waves usually caused by undersea earthquakes or volcanic eruptions.
- **Volcanic eruptions–** Volcanoes erupt when molten rock, gases etc, escape from beneath the earth's surface. Such eruptions lead to environmental disasters.

Natural disasters can seriously disrupt the functioning of society and pose significant and widespread threats to life, property and the environment. Although significant progress has been made in disaster warnings, response, and recovery systems, our engineered structures and emergency management still need to be better equipped to effectively handle such natural disasters..Coastal environments are increasingly exhibiting greater vulnerability to damage caused by natural events. Populations moving closer to the coastal communities for various purposes have become more vulnerable to the catastrophic events, including oceanic earthquakes that cause tsunamis and hurricanes. Human actions are also contributing towards such disasters. For example, the decision to fill wetlands, marshes and mudflats along the coasts to create land more affluent for the populations seeking the amenities of the coastal living. These actions aggravate the situation, and people may not be aware of the consequences of their actions, thereby creating their vulnerability. Most of the world's volcanoes are located within a few miles of the shorelines of the world's oceans. The melting of the large ice sheets into the oceans, adding weight to them, also increases the probability of volcanic eruptions. It must be borne in

mind that the movement of the tectonic plates might last for a few seconds and yet it can cause massive death and destruction.

It is pertinent to note that mitigating natural disasters should become our collective goal, and protecting the environment is the means to achieve this end. The motto needs to be: 'Go green, be fair and keep safe'.

The World Bank and United Nations report (2010) states that disasters exposes the cumulative effects of various human decisions, both individual and collective, in terms of land management like that of unregulated growth of urban areas, construction techniques, implementation of sanitation infrastructure and low investment in the educational programs, poverty reduction and social integration among others. Such decisions, when get combined with high intensity natural events like that of floods, landslides, storms and earthquakes, it provokes an array of socio-economic and environmental impacts.

Self-Asking Question:

Natural disasters happen suddenly without any kind of prior warning and they are beyond human control. Discuss with suitable examples.

……

……

……

2.4 Impact of Natural Disasters on the Environment

We have seen that environmental disasters – both natural and man-made causes immense damage to the environment. In the next unit,

we will study about the adverse effects of human induced disasters. Here, let us see the impact of natural disasters on our environment:-

1. **Loss of biodiversity**–Natural disasters lead to the loss of biodiversity and as a result, plants and animals may be killed or driven out from their habitats.
2. **Environmental Pollution–** Natural disasters also lead to defilement of the environment. For example, floods contaminate water resources, wildfires release various smoke and harmful gases into the air, thereby leading to air pollution.
3. **Soil Erosion–**Soil erosion, which is caused by landslides, floods and deforestation, can wash away the fertile topsoil.
4. **Climatic effects–** Natural disasters lead to change in the climatic conditions. For example, volcanic eruptions might release gases which can cause changes in climatic conditions.
5. **Displacement of people–** Natural disasters leads to displacement of people from one place to another because it destroys homes and communities thereby forcing people into temporary shelters.
6. **Economic losses–** Natural disasters leads to destruction of infrastructure, business and crops and thus leads to economic crisis.
7. **Disruption of services–** Natural disasters might lead to disruption of services like, transportation and communication and power services might get cut off.
8. **Health issues–** One of the most immediate effect of natural disaster is loss of human lives and physical injuries. Also, many people might suffer from trauma of experiencing such

a disaster thereby leading to mental health issues like anxiety and depression.

2.5 Human Activities Contributing to Natural Disasters

It is true that natural disasters are beyond human control as they are caused by natural forces. But, sometimes human activities can also increase the frequency and intensity of such natural disasters. For example, human activities result in deforestation and as a result of deforestation, the stability of hill slopes get reduced, thereby resulting in landslides. Forests stabilise the soil, regulate water cycles, and serves as a home for various species. But people are cutting down trees and clearing forests recklessly because they need land for various agricultural purposes and for urban expansion. Without roots to anchor the soil, even moderate rains results in massive landslides thereby burying places and people.

Global warming, driven by greenhouse gas emissions, has intensified storms and droughts by disrupting weather patterns. This disruption leads to more severe storms, prolonged droughts, rising sea levels, and the accelerated melting of glaciers. Unplanned urbanization creates various problems like the problem of urban sewage disposal which leads to the problem of the poor drainage system. It needs to be mentioned here that the cities are expanding without proper planning. These cities are grappling with the problem of population exodus, and to give space to this growing population, natural systems are replaced with concrete structures. This, in turn increases the risk of floods. Poorly managed drainage systems exacerbate the problem.

Also, earthquakes are sometimes caused by mining activities. The excessive extraction of natural resources like minerals, coals, oil etc

can disturb the earth's crust and may weaken the geological formations, thereby leading to human-induced earthquakes.

Thus, from the above discussion, we see that thoughtless human activities also might result in natural disasters. Also, we see that developmental projects are carried out with little regard for the environmental concerns. Forests are cleared, wastes are dumped carelessly, smokes and fumes are emitted from various sectors without treatment and all these results in defilement of the environment thereby leading to various natural disasters at times. It is true that nature has always been resilient and capable of restoring balance. But there is a limit of how much it can endure. Thus, the need of the hour is sustainable development, environmental education and stronger regulations.

2.6 Judicial Interventions

The 'Act of God' is a legal defence invoked when a loss results from extraordinary natural forces such as exceptionally heavy rainfall, storms, tidal waves, or volcanic eruptions. It has been explained clearly in Halsbury's Laws of England as follows: An Act of God in the legal sense may be defined as an extra-ordinary occurrence of circumstance which could not have been foreseen and which could not have been guarded against, or, more accurately, as an accident due to a natural cause, directly and exclusively without human intervention, and which could not have been avoided by any amount of foresight and pains and care reasonably to be expected of the person sought to be made liable for it, or who seeks to excuse himself on the ground of it. The occurrence need not be unique, nor need it happen for the first time; it is enough that it is extraordinary and such as could not reasonably be anticipated and it must not arise from the act of man." Thus, to get protection under this defence, it

must be proved that: the occurrence is the result of natural forces and that the occurrence must be extraordinary and not one which could be anticipated and reasonably guarded against.

In several cases, this defence has been invoked, and the judiciary has endeavoured to deliver justice based on the specific circumstances and merits of each case.We can cite here two cases. In Nichols v/s Marsland case, the rainfall was extraordinarily heavy and could not be anticipated. The judiciary upheld that if the rainfall had been a normal one, which could be expected in a certain area, then the defence of act of God cannot be pleaded. In the case of Kallulal v/s Hemchand, the wall of a building collapsed on a day of heavy rainfall which resulted in the death of respondent's two children. The Madhya Pradesh High Court held that the defendant (appellant) could not invoke the defence of Act of God, as the level of rainfall during the monsoon season was not considered extraordinary and, therefore, could have been reasonably anticipated and guarded against.

2.7 Theories of Natural Disasters

Theories of origin of disasters need to be discussed here, which have evolved over the years, portraying advancements in the human understanding of the physical natural phenomena and their interaction with the social systems. A proper understanding of these theories will help towards proper natural disaster planning, preparedness and mitigation. The following are the theories on natural disasters-

1. **Disaster as a Retribution – an act of God:**This was in usage in the earlier times, which suggested that the disasters are acts of God which happen as a divine retribution for human misdeeds and failings. This viewpoint encourages

accepting the negative consequences of such events as part of one's fate and thus says mitigation of a disaster's impact is beyond human capacity. However, the disaster risk management community has moved away from this theory of disasters since the 18th century.

2. **Disaster as a physical phenomenon – an act of nature:** Due to the progress in scientific thinking and enhancement of rational knowledge after the renaissance led to the change in perception of disasters from the supernatural paradigm to that of the natural physical realities. For example, previously or traditionally earthquakes had been interpreted as a dramatic means of communication between gods and humans and occurrence due to some disturbance between earthly and heavenly spheres. But slowly, such supernatural gave way to rational thinking. This theory of disasters became widely accepted by the early 20th century. This theory paved the way for adoption of engineering measures to 'tame' the natural forces that causes disasters. Great efforts were made to understand the origin and causes of such events and steps for future prediction of such natural hazards. However, despite the adoptions of engineered solutions, it was ultimately realized that problem cannot be adequately solved by adopting hard scientific and engineering methods alone.

3. **Disaster as an act of nature – human interplay:** Carr was the first to propose the fact that disasters actually occur due to the interaction between a natural system and a human-use system. In the absence of one component, there will not be any disaster. For example, a powerful earthquake in a remote uninhabited area is a natural hazard but will not

result in any disaster as no human lives are adversely affected.

4. **Disasters as a Product of Interwoven Natural and Socioeconomic Dynamics:** By the late 20th century, it was seen that certain nations and segments of population were more vulnerable to the impacts of natural disasters as compared to others. It was seen that the least developed countries were caught up in the vicious circle of underdevelopment, which was exacerbated by occurrence of natural disasters. These disasters not only caused immediate physical damage but also undermined socio-economic progress, exacerbating poverty and inequality. The complex interplay of natural hazards with human vulnerabilities, social structures, and economic conditions revealed that disasters could not be understood purely as natural events but rather as multifaceted phenomena shaped by both environmental and societal factors.

Various factors like that of cultural and social aspects, political instability, lack of will, civil unrest etc presents a myriad of challenges in implementing capacity building and vulnerability mitigation measures against natural disasters. It needs to be mentioned here that humans are no longer seen as the victims of the natural disasters but are seen as contributors to the misery caused by a hazardous natural process through irrational human exploitation of the natural resources. It has been realised that to address the complex problem of the natural disaster, a long term focus is needed on the capacity building that ensures equitable distribution of the economic resources, reduction in poverty and participation of the local communities in incorporating local knowledge and practices is the proposed solution to the natural hazards.

A trans-disciplinary approach to the underlying concept of natural disasters suggests the fact that though are characterised by the naturally occurring events, but the consequences are often aggravated by the man-made actions which surpass the capacity of man's built infrastructure to contain.

Thus, these natural disasters results in tragic disturbances in the social and environmental spheres causing high levels of material damage, the loss of life and means of subsistence for the affected communities and the spread of infectious diseases due to the degradation of the sanitary conditions. The natural disaster may be small or moderate but are responsible for various adverse socio-economic and environmental impacts particularly in the underdeveloped regions due to lack of preventive action plans and resources and also due to low resilience.

Though it is not humanly possible to adopt measures to eliminate the extreme phenomena which causes natural disasters, yet, preventive planning is vital for mitigating the impacts on the socio-economic and environmental systems. This concern reflects the final recommendation of the World Summit on Sustainable Development (WSSD) which emphasizes the need for an integrated approach to include vulnerability, risk evaluation and disaster management by focusing on the prevention and mitigation of impacts (World Bank and United Nations, 2010).

Stop to Consider:

Natural Disaster Management:

Disaster Management comprises of actions which are taken before and after the occurrence of a natural disaster to manage the negative consequences of the event. It is a cyclical process which comprises of prevention and preparedness (which precedes a disaster) and

response and relief (that immediately follow a disaster). This comprehensive model of disaster management developed in the USA and is termed as PPRR. Effective communication is essential for rapid response and rescue efforts. Also, natural hazard awareness and education is the need of the hour. The National Research Council (NRC) compiled a very comprehensive set of recommendations for the natural hazards education and awareness. NRC proposes national education and awareness campaigns for various levels and forums in the society.

Self-Asking Question:

Poorly managed drainage systems exacerbates the problem of natural disasters. Discuss.

……

……

……

Check Your Progress:

1. What do you mean by natural disasters? How greenhouse effect does contribute towards global warming?

2. Discuss the different types of natural disasters. What are the main causes of floods?

3. Do you think that unplanned urbanisation increases the risk of certain natural disasters? Substantiate your answer with suitable examples.

4. Explain how pollution leads to various natural disasters like droughts or wildfires.

2.8 Summing Up

Thus, we can understand from the above discussion the fact that natural disasters can have a life-altering impact on the society and its people. Such disasters pose serious challenges to development because they disrupt the very political, social and educational progress and also the infrastructural and technological developments. Thus, these disasters hinder socio-economic development and retard the process of improving the quality of life of the people.

2.9 References and Suggested Readings

- Escobar-Pemberthy, N., & Ivanova, M. (2020). Implementation of multilateral environmental agreements: Rationale and design of the environmental conventions index. *Sustainability*, *12*(17), 7098.
- Nummelin, M., & Urho, N. (2018). International environmental conventions on biodiversity. In *Oxford Research Encyclopedia of Environmental Science*.
- Tripathi, S. C., (2008). *Environmental Law*. Central Law Publications.
- Jaswal, P. S. and Jaswal, N. (1999) *Environmental Law*. Allahabad Law Agency
- Penna, A. N., & Rivers, J. S. (2013). *Natural disasters in a global environment*. John Wiley & Sons.
- Pelling, M. (2001). Natural disasters. *Social nature: Theory, Practice, and Politics, Blackwell Publishers, Inc., Malden, MA*, 170-189.

- Mata-Lima, H., Alvino-Borba, A., Pinheiro, A., Mata-Lima, A., & Almeida, J. A. (2013). Impacts of natural disasters on environmental and socio-economic systems: What makes the difference? *Ambiente&Sociedade*, *16*, 45-64.
- Knap, A. H., & Rusyn, I. (2016). Environmental exposures due to natural disasters. *Reviews on environmental health*, *31*(1), 89-92.
- Genç, R. (2018). Catastrophe of environment: The impact of natural disasters on tourism industry. *Journal of Tourism & Adventure*, *1*(1), 86-94.
- Alexander, D. (2018). *Natural disasters*. Routledge.

UNIT- 3

ENVIRONMENT AND ANTHROPOGENIC DISASTERS

Unit Structure:

3.1 Introduction
3.2 Objectives
3.3 An Overview of disasters
3.4 Anthropogenic Disasters
3.5 Indian Judiciary and anthropogenic disasters
3.6 Anthropogenic disaster, global warming and Acid rain
3.7 Anthropogenic disaster and Sustainable development
3.8 Anthropogenic disasters and Blue Economy
3.9 Disaster Emergency Preparedness
3.10 Summing Up
3.11 References and Suggested Readings

3.1 Introduction

We have already studied in the previous units about environment and what causes environmental pollution. Throughout the world, concern has been showed for environmental protection. Recently, the concept of 'sustainable development' gained momentum, thereby giving further impetus to the concern for environmental protection. The concept of sustainable development, as we have discussed in the previous unit, stands for both economic development as well as environmental protection. But over the last few years, we have seen tremendous increase in the level of environmental pollution. Both natural pollution and man-made pollution has become a matter of concern in today's world. Natural pollution is beyond our control. But anthropogenic disasters (man-made disasters) are more painful because it can be averted if timely

actions or steps are taken. Anthropogenic disasters are caused mainly due to unmindful human activities. Various wastes and toxic gases which are released as a result of growing urbanization and industrialization, are hazardous to the environment. Not only this, there are various different types of anthropogenic disasters. In this unit, we will try to make a comprehensive study about various anthropogenic disasters.

3.2 Objectives

This unit deals with various anthropogenic disasters and deals with the fact that how these disasters adversely affect human lives. After reading this unit, the learners will be able to:-

- *understand* properly what constitutes anthropogenic disasters;
- *discuss* various types of anthropogenic disasters;
- *explain* properly the vital role of judiciary and legislations dealing with anthropogenic disasters;
- *describe* the inter-connectedness between anthropogenic disasters and other associated problems;
- *trace* the relationship of anthropogenic disasters, global warming, Acid rain and Disaster Emergency Preparedness;
- *analyse* about anthropogenic disasters and growing importance of blue economy.

3.3 An Overview of Disasters

Before studying about various anthropogenic disasters, we need to know properly as to what is actually a disaster. A Disaster has been defined by the Asian Disaster Reduction Center (2003) as: “A

serious disruption of the functioning of society, causing widespread human, material or environmental losses which exceed the ability of affected society to cope using only its own resources".

There are different types of disasters. Turner and Pedgeon (1997), Richardson (1994), the World Health Organization (2003), the Federal Emergency Management Agency (2003) have discussed about disaster types and definitions. We can discuss here about different types of disasters which are like: Natural disasters, anthropogenic disasters and Hybrid disasters.

i) Natural disasters are those which emanates from the natural hazards, and natural hazards may result from various reasons like, internal causes which occurs beneath the earth's surface, external causes like topographical, weather-related like meteorological or hydrological. Natural disasters are often termed as 'Act of God' because they are beyond human control. We will deal with natural disasters at length in another unit.

ii) Anthropogenic disasters, on the other hand, are those which results from human decisions. Generally these types of disasters emanatesfrom faulty human conduct.

iii) Hybrid disasters are those which are a compound of both human conduct or decisions and the natural forces.

It needs to be mentioned here that whatever be the type of disaster, the severity of their impact on people, property and the environment is always tremendous.

Let us now focus our attention on the differences between natural and anthropogenic disasters. It has been discussed above that disasters are undesirable and are often sudden events causing various human, material, economic and environmental losses. These disasters are caused either by the natural forces or processes (known

as ‘Natural disasters’) or are caused by human actions, negligence or errors (known as ‘Anthropogenic disasters’). Thus, we see that anthropogenic disaster is a disaster caused by human actions, negligence or errors as opposed to the natural disasters resulting from natural hazards. **Natural disasters** are generally classified as:-

(i) Geophysical disasters (eg. Earthquake, volcanic eruptions, rockfall, landslide, avalanche etc);

(ii) Hydro-Meteorological disasters (eg. Flood, drought, storm, wildfire etc) and

(iii) Biological disasters (eg. Epidemic, insect infestation etc).

Anthropogenic disasters are like:-

(i) technological disaster (eg. Disasters due to engineering failures, transport disasters, environmental disasters); and

(ii) Sociological disasters (eg. Criminal acts, riots, war etc). sometimes it is seen that even the natural disasters are aggravated by anthropogenic activities. Thus, hazards, which are part of nature, often turn into disasters due to human actions or inactions (UNESCO, 2007). For example, severe flooding is often aggravated by deforestation, urbanization etc. Failure to impose building codes and implement earthquake-resistant techniques is mainly responsible for the collapse of buildings and human fatalities even by relatively low intensity earthquake. <https://link.springer.com/chapter/10.1007/978-90-481-2498-5_1>

3.4 Anthropogenic Disasters

We have already discussed above that the anthropogenic disasters are those which results from the human actions or failures and it encompasses a wide range of events like that of industrial accidents, chemical spills, structural collapses etc. The anthropogenic disasters

often results from insufficient awareness and training of mankind. Moreover, ineffective communication within the organization leads to various misunderstandings and as a result, there occurs delays in responding to potential hazards which might ultimately lead to disaster. Also, at times, the factories or organizations fail to implement proper safety measures or else these factors have been overlooked or inadequately addressed, which might ultimately lead to such anthropogenic disasters.

We can discuss the different types of anthropogenic disasters under the following heads:-

1. **Technological disasters:-** The world has witnessed various such technological disasters from time to time. For example, Seveso in 1978 (Lees, 1996), Flixborough in 1974 (Lees, 1996), Bhopal in 1984 (Shrivastava, 1988), Piper Alpha in 1988 (Woolfson and Beck, 2002) and Chernobyl in 1986. We can include in this category major hazards resulting from fire, explosion and toxic release. Here, we can also cite the example of Visakhapatnam Gas Leak in India.
2. **Transport disasters:-** Transport disasters like major rail or highway accidents can cause large number of casualties. Air crashes also comes in this category. Also, at times, hazardous material incidents occur which causes major disruption. For example, Balasore train accident, 2023, in India.
3. **Public Place failures:-** This category of anthropogenic disaster includes fire outbreak in industrial plants, structure collapses, crowd crushing etc. Sometimes we come across the news of bridge collapse which causes large scale damage. Also, the World has seen many disasters due to sports activities. Urban fires occurring in structures like that

of high-rise buildings, condominiums etc have always been a matter of serious concern to the fire officials. Various preventive measures can solve this problem like, fire prevention codes, inspection programs and the installation of smoke detectors can help reducing such risks. Here, we can cite the examples of Ghatkopar building collapse, 2017, and, Kolkata flyover collapse, 2016.

4. **Production failure:-** Computer system breakdowns, production and distribution of defective products might also result in such disasters.

5. **Warfare (Conflicts):-** Different types of conflicts also comes under the category of anthropogenic disasters. We can discuss this type of disaster under two heads:-

    (a) Inter-State conflicts: Sometimes due to the absence of effective governmental control, there arise state conflicts like conflicts about local issues and disputes involving violence. These types of conflicts are the result of failure or incapacity to provide for minimal human security for the individual citizens compounded by weak governance.

    (b) International conflict: This category includes border disputes, foreign invasions and other cross-border attacks.

6. **Non-Conventional War:-** This category includes various chemical, biological and nuclear wars.

    (a) Biological War has been defined by the Biological Weapon Convention of 1972 as "Microbial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that

have no justification for protective or other peaceful purposes." Thus, we can understand the fact that the biological disasters have its origin from the organic processes or phenomena or it can also be transmitted through biological vectors. It can result from exposure to various toxins, pathogenic microorganisms, bioactive substances and can inflict harm or fatalities. It can induce dangerous illness or can also induce adverse health impacts, can cause property destruction and may disrupt societal and economic functions. This way it can inflict environmental damage. Examples of such biological disasters are outbreaks of epidemic diseases, which are highly contagious among plants and animals. Burning examples are the outbreak of pandemics and the extent of harm it causes to mankind is known to all of us.

(b) Chemical disasters are also very dangerous in nature. Chemicals being integral to the modern industrial systems have become a significant concern for disaster management across governments, private sectors and communities. Those most at risk in chemical disasters includes industrial plant personnel, workers, hazardous chemical transportation vehicles, residents of the nearby settlements, adjacent buildings, occupants and the surrounding community (Goa State disaster Management authority). Moreover, due to acute exposure to unintentional releases of the industrial chemicals, various negative health impacts can be seen. Also, extreme weather events are associated with such disasters.

(c) Nuclear and Radiological disasters are caused by the widespread adoption of nuclear science and technology across the various sectors such as power production,

healthcare sector, industries, agricultural sector, research and defense.

7. **Hybrid Disasters:-** There are some disasters which are caused due to both human error or negligence and also natural forces. These types of disasters are called hybrid disaster. For example, due to the extensive clearing of forests, there are cases of soil erosion and also subsequent heavy rainfall resulting in landslides. Also, at times, the location of residential areas or factories at the foot of an active volcano or in an avalanche area results in dangerous disasters.

   Here, we can cite the example of the earthquake of December 1988 in the town of Leninaken which is a classic example of a major natural disaster, an 'act of God', although in their retrospective search for meaning, people were inclined to connect the earthquake with the Soviet nuclear testing, thereby giving it a human made perspective. (Robert Giel).

8. **Subsequent Disasters:-** There are some disasters which are result of natural or anthropogenic disasters. For example, dam collapse may occur due to earthquake, nearby oil drilling or faulty construction. Such dam collapse results in sudden release of large amounts of water which sweep over low lying villages thereby causing many deaths and injuries (International Federation of Red Cross and Red Crescent Societies, 2003).

9. **Disaster caused by uncontrolled urban waste disposal:-** We have already discussed about the health hazards caused by uncontrolled urban waste disposal in the unit dealing with

urbanization and environment. We have seen that rapid industrialization and urbanization resulting in the cities the problem of high quantum of wastes. These wastes gets percolated down to earth surface thereby contaminating food, water and everything we use, leading to serious health damage. These solid wastes are the breeding grounds for different kinds of insects and pests and the waste dumping in the open dumps are very detrimental to the urban environment. Open burning of these solid wastes emits pollutants like that of carbon monoxide (CO), Hydrocarbons (HC), particulate matter (PM), nitrogen oxides (NOx), sulphur dioxide and a high quantity of various other toxic gases. The inhalation of the smoke and fumes produced by open burning of the wastes can cause serious health issues. This problem of uncontrolled urban waste disposal must be dealt with efficiently but different problems like financial and institutional constraints, weak or underfinanced local governments, rapid growth of the population, lack of awareness amongst the masses etc posing as obstacles.

Thus, we have discussed above the different typology and classification of anthropogenic disasters. All these disasters results in problems like that of moving and displaced people, refugees and asylum seekers, internally displaced persons etc. It has been crystal clear from the above discussion that the human-induced disasters arising from various deliberate or unintentional human activities has posed serious and significant threats to the global societies, ecosystems and economies. Unlike the natural disasters which are beyond human control and are driven by uncontrollable environmental forces, anthropogenic disasters originate from human actions, decisions and systems. As we have seen above that

anthropogenic disasters encompasses within its range a wide spectrum of events ranging from industrial accidents to that of environmental pollution to different kinds of technological failures, acts of terrorism and conflicts. Each category presents distinct challenges to emergency responders, policy-makers and affected communities that demanded tailored approaches to address their complexities (Kahraman and Polat, 2023).

In order to deal effectively with these various evolving threats posed by the various anthropogenic disasters, the need of the hour is a comprehensive and proactive measures which have become imperative. Our country has historically grappled with various natural calamities due to its unique geo-climatic conditions, and now facing equal susceptibility to a range of anthropogenic disasters.

Stop to Consider:

International efforts to deal with the Nuclear and Radiological disasters:-

We have already discussed above that the Nuclear and Radiological disasters are caused by the widespread adoption of nuclear science and technology. Here, let us discuss different International efforts to deal with the Nuclear and Radiological disasters:

1. Nuclear Test Ban Treaty, 1963 – This treaty prohibits the contamination of environment by radioactive substances and thus prohibits nuclear explosions in the the parts of the biosphere consisting of atmosphere, out space, under water, territorial water or the High Seas.

2. Tlateloco Treaty, 1967 – This treaty also intended to prevent and control the persistent release of radioactive substances by nuclear weapons.

3. The Treaty on the Non-proliferation of Nuclear Weapons, 1968.

4. U.N. General Assembly Resolution (1971) on the urgent need for suspension of Nuclear and Thermonuclear tests.

5. The Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea Bed and Ocean floor and sub-soil thereof, 1971.

Self-Asking Question:

Our country has historically grappled with various natural calamities due to its unique geo-climatic conditions, and now facing equal susceptibility to a range of anthropogenic disasters. Discuss the statement with relevant examples.

……

……

……

3.5 Indian Judiciary and Anthropogenic Disasters

In our country, judiciary has always tried to protect the environment through various landmark judgements. Let us focus on some of them for clear understanding of the fact.

In the case of Kinkri Devi v/s State of Himachal Pradesh, the Himachal Pradesh High Court held that indiscriminate mining of lime-stone is causing gross damage to the hills and also the people living in the area and thus directed the state government to take appropriate measures. In M. C. Mehta v/s UOI, the Supreme Court

held that since Haryana government banned mining operation within a radius of 5 kms of Badkallake and SurajKund lake, thus stoppage of mining activity there was wholly justified. The apex court further directed that no construction of any type shall be permitted within 5 km radius of the Badkallake and SurajKund lake and that all open areas shall be converted into green belts. Also, in the Oleum Gas leak case, the Supreme Court held that under Article 32 of the Constitution, the Court is empowered to award compensation to the environmental victim. Again, in M. C. Mehta v/s UOI case, it was held by the apex court that a tannery which cannot set up a primary treatment plant cannot be permitted to continue to be in exercise since it causes adverse effects on the public at large. It was held by the judiciary that the tanneries discharging effluents in Ganga water, not setting up primary treatment plant in spite of being asked for several years, cannot be permitted to be in existence for adverse effect on public at large. In the Doon Valley case, the court ordered the closure of number of limestone quarries. The judiciary in India has also shown its concern whenever the public parks and other open spaces kept for recreation of the people are used for any other purposes disturbing the ecological balance.

In the leakage of Oleum gas case, as a result of which several persons were affected, the Supreme Court held that: it is undoubtedly true that chlorine gas is dangerous to the life and the health of the community and if it escapes either from the storage tank or from the filled cylinders or from any other point in the course of production, it is likely to affect the health and wellbeing of the workmen and the people living in the vicinity…..we have, with considerable hesitation bordering almost on trepidations, reached the conclusion that, pending consideration of the issue whether caustic chlorine plant should be directed to be shifted and relocated yet to some other place, the caustic chlorine plant should be allowed

to restart by the management subject to certain stringent conditions." (S. C. Tripathi).

We can also cite here another important case, where the judiciary has tried to deal with anthropogenic disaster. The division bench of the Gauhati High Court in Mahabir Coke Industry and another v/s Pollution Control Board and others, has held the fact that pollution of any kind is detrimental to the society. With the industrialization of a country, problem of pollution comes in and if it is allowed to go on unabated, then there will be serious health hazard to the human community. However, it is also true that we need industrialization for our development and no country can prosper without industrialization. At the same time, it should be the endeavour of all to control pollution. Thus, we need to overcome hazard of pollution by taking appropriate measures to reduce it to the extent which may not cause health hazard. (S. C. Tripathi).

We have discussed above as to how hazardous or poisonous substances, if not handled with due caution, can result in huge damage. Indian Penal Code has dealt with the matter. As provided under Section 278 of the Code, 1860, whoever voluntarily vitiates the atmosphere in any place so as to make it noxious to the health of persons in general dwelling or carrying on business in the neighbourhood, shall be punished with fine. Also, a person who is rash or negligent with respect to poisonous substance shall be punished as per the provision under Section 284 of the IPC, 1860.

The judiciary has also tried to protect wild life from such man-made actions. Section 32 of the Wild Life (Protection) Act, 1972, held that no person shall use in a sanctuary, chemicals, explosives or any other substances which may cause injury to, or endanger any wild life in such sanctuary. Thus, we see that the use of chemicals or explosives or any such substances causing or likely to cause injury

or endanger the wild animal has been banned within the limits of sanctuary.

It is also pertinent to observe here that man-made noise pollution is caused by various machines, automobiles, trains, aeroplanes, social celebrations, construction works, loudspeakers etc. The judiciary has also given judgements to deal with such noise pollution. Also, it has been provided by the Factories Act, 1948, that the occupier of every hazardous unit is needed to disclose the health hazard involved to the workers. Every occupier of the factory is required to have devices and also need to draw up plan regarding emergency disaster control and also need to get the approval from the chief Inspector of Factories. The Disaster Management Act, 2005, also deals with the prevention and mitigation of disasters.

Disaster Mitigation and Management – Role of Civil Society and the NGOs:-

It is pertinent to mention here that both disaster mitigation and disaster management is essential so as to deal with disasters and in this regard, both the civil society and NGO plays a commendable and vital role. Disaster mitigation basically helps in reducing the potential negative impacts of the disasters whereas, disaster management encompasses the process of preparedness, response and recovery after a disaster occurs.

It is said that disaster mitigation is the very cornerstone of emergency management and it's the ongoing efforts given to lessen the impact of disasters on the people and their lives. For example, keeping the homes away from the floodplains, engineering bridges to withstand earthquakes, creating and enforcing effective building codes to protect the property from hurricanes and others. Mitigation has been defines as "sustained action that reduces or eliminates

long-term risk to people and property from natural hazards and their effects." <https://www.newbedford-ma.gov/emergency-management/emergencies-disasters/mitigation/>

On the other hand, disaster management involves the organized efforts so as to mitigate, prepare for, respond to and recover from the disasters. It also incorporates within its domain preparedness for disasters, effective response during disasters, recovery and rehabilitation.

It has been observed that the civil society, including the NGOs, have played a vital role in disaster management, starting from preparedness and mitigation to that of response and recovery. Disaster relief NGOs have taken the lead in reducing the disaster risks and have always worked hard to build resilient and prepared communities. The NGOs help building resilient communities that can handle any kind of disasters, creates awareness among the people, also help to arrange for and distribute food, water, medicines and shelter after the disasters. They also provide counseling and help to the people to deal with the grief and stress caused by the disasters. https://give.do/discover/news/building-resilience-role-of-ngos-in-disaster-management/

Regarding the role of the civil society, civil society can raise awareness about different hazards, disaster risks and can create preparedness in the communities. The civil society organizations conducts training workshops and programmes to build the capacity of the communities in disaster preparedness and response. They even empower the individuals with the necessary knowledge and skills needed to cope with disasters effectively. Thus, we can mention the role of civil society as follows – creating community awareness and preparedness, early warning systems, capacity building, providing support during emergencies, promoting sustainable development, engaging in research and data collection,

psychosocial support to the individuals and communities affected by disasters.

https://fortuneiascircle.com/backgrounder/role_of_civil_society_in_disaster_management

Self-Asking Question:

Hazardous or poisonous substances, if not handled with due caution, can result in huge environmental damage. Discuss with case study.

……

……

……

3.6 Anthropogenic Disaster, Global Warming and Acid Rain

The existence of a healthy biosphere is very essential for keeping earth's atmosphere suitable for all the creatures. But the recent trend of industrialisation has done a lot of damage to our environment. The gases released by the industrial activities are absorbed in the atmosphere and even the harmful ultraviolet radiations are also absorbed by the ozone layer which causes damage to the terrestrial life. It is badly affecting the quality of air and also the composition of the atmosphere. This ultimately results in global warming. The scientists have shown concern over the increase in the temperature of the earth's surface. The ozone layer which protects the earth from the ultraviolet radiations is rapidly thinning. The adverse effect of such global warming, as contended by the scientists, is the eruption of cancerous and tropical diseases, melting of the glaciers, flood in the low lying coastal areas, submergence of the islands, raising of the sea levels. The irresponsible disposal of radioactive and other wastes may result in the considerable destruction of life and

property. As opined by Prof. G. O. P Obasi, the Secretary General of WMO (World Meteorological Organisation) that even glaciers including those in the Alpine region have been melting and retreating. According to the World Health Organisation (W.H.O), an estimated 77,000 deaths are recorded annually in the Asia-Pacific region due to health problems arising out of global warming. (S. C. Tripathi).

The emissions of sulphur-di-oxide and nitrogen oxide results in the formation of acid rains which result in the damage of soils, vegetation and surface water. Acid rain is detrimental to the human health. It needs mention here that the emission of these hazardous gases are caused by various industrial operations, released by automobiles and the burning of oil, wood etc. Emissions from factories and the vehicles lead to smog, acid rain and respiratory diseases. When these gases get combined with water vapour in clouds, it becomes highly acidic in nature.

Thus, we see from the above discussion that the anthropogenic disasters are inter-connected to many other environmental problems.

3.7 Anthropogenic Disaster and Sustainable Development

We have discussed at length about the concept of sustainable development in the preceding units. We have seen that sustainable development is the development that lasts and it has a specific concern that while enjoying the fruits of economic development today, we should not make future generations worse off by excessively degrading the earth's resources and polluting the earth's environment. The concept of sustainable development simply requires that the adverse impacts on the quality of air, water and other natural elements needs to be minimized so as to maintain eco-systems overall integrity. Various man-made factors are there like

that of population explosion, industrialisation, urbanization and green revolution which have brought about many changes in the quality of our environment (Dhaliwal, 1992).

There is no denying the fact that industrial revolution led to development but at the same time, it polluted the environment with various types of pollutants which are ejected by the factories, plants heating installations and increasing number of the vehicles. Not only that, the population congestion in the large cities led to acute shortage of many things including space and clean air. It needs mention here that every developmental project, especially the large infrastructural projects like that of dam, railways, highways etc are bound to have its own environmental and other social, economic and cultural implications. These developmental works leads to other problems like that of displacement of the families, felling of trees, creating noise and air pollution etc. Moreover, the extensive use of chemical fertilizers and various pesticides in the agricultural domain have brought about various changes in the different components of the environment. For example, intensive use of nitrogenous fertilizers has resulted in the increase in the level of nitrates in the ground waters which is dangerous to human health. A recent study has linked up human cancer with that of more nitrate intake.

Thus, we can understand that the attainment of sustainable development is a formidable challenge but at the same time a potent weapon for the attainment of self-reliant systems. In order to strike a proper balance between both economic development and ecological protection, certain steps can be taken, like: vehicles need to be provided with emission control equipment, incentives should be given to the polluters to set up common effluent treatment plants, industries should be encouraged to use non-conventional energy resources, those industrial activities should be encouraged that are more efficient in terms of resource use and those which generate

less pollution and wastes. Also, there must be encouragement for the use of environment friendly bio-pesticides or bio-fertilizers against the chemical ones. Moreover, research need to be undertaken for promoting the adoption of environmentally compatible technology. Thus, we have discussed above the different ways as to how we can meet the challenges of sustainable development by redirecting the thrust of our developmental process.

Stop to Consider:

Need for Environmental Education:

1. Progress towards sustainable development is possible only when there is a fundamental change is societies' attitudes towards nature and the environment. To bring about this change of attitudes, environmental education is a must.

2. Environmental education also helps people living in the polluted regions because environmental education represents a relevant means of prevention.

3. It helps in developing awareness, sensitivity and a positive attitude towards environment, thereby enhancing the knowledge and understanding of the ecological processes.

4. Environmental education also helps in greater participation in the activities that help to overcome the various environmental challenges.

5. It helps in developing concern for the environment and thus helps in maintaining the environmental quality.

6. It helps in developing the skills necessary to deal with the environmental problems.

3.8 Anthropogenic Disasters and Blue Economy

The concept of blue economy has emerged recently as a matter of concern throughout the world. Oceans play a very important role in promoting the concept of sustainable development. However, due to the indiscriminate marine pollution, there has been a rapid decline in the health of oceans which is a matter of grave concern. Anthropogenic disasters like that of sea-bed mining, drilling etc pose as significant threats to the blue economy and can disrupt the marine ecosystems and thus can negatively impact the industries like that of fishing, tourism, shipping etc. Blue economy refers to the sustainable use of the ocean resources. Sustainable blue economy can also create job avenues. We can refer here to the pandemic situation which has resulted in loss of livelihoods and also job opportunities. But there are some of the ocean based sectors like fisheries, shipping, tourism, marine research, ocean conservation etc., which can provide ample opportunities and prospects for jobs. Thus, we can understand that sustainable blue economy supports the sustainable use of the ocean resources for economic growth, improved livelihoods and providing jobs and at the same time promoting ocean ecosystem. But irresponsible activities of mankind like that of dumping of industrial and agricultural wastes, plastics and untreated sewage contaminates the oceans and the coastal areas. The over-exploitation of the marine resources may disrupt the entire marine environment. Need of the hour is sustainable management of the marine resources.

It is pertinent to mention here that India has an extensive coastline and also rich in maritime resources and thus can lead the way towards promoting a sustainable blue economy. A large chunk of our population resides in the coastal areas. The Government of India's vision of New India by 2030 underlines blue economy as one of the important dimensions of growth. Certain steps have been

taken in our country in this regard and they are like deep ocean mission, sagarmala project, integrated coastal zone management etc.

3.9 Disaster Emergency Preparedness

Disaster Emergency Preparedness involves the various proactive measures which are taken to minimize the impact of potential disasters. The key features of disaster emergency preparedness are: understanding risks, developing a plan, building emergency kit, staying well informed, financial preparedness, community involvement etc.Our country has witnessed several industrial disasters apart from the natural calamities. For example, Bhopal Gas leak case, Shriram Oleum Gas leak and the Tsunami-tidal earthquake are few major industrial cum environmental disasters. There was no preparedness to deal with these emergencies and as a result, there was unaccountable death of human life and loss of property. But it is known to all that prevention is better than cure. Moreover, the present concept of NPM i.e., New Public Management stipulates that it is better to prevent the occurrences rather than going for solutions after it happens. In 1996, the Central Government in exercise of the powers conferred by the Environment (Protection) Act, 1986, framed the rules to be called as the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996. According to the said Rules, the term 'Chemical accident' means an accident involving a fortuitous or sudden or unintended occurrence while handling any hazardous chemicals resulting in continuous, intermittent or repeated exposure to death or injury to, any person or damage to any property but does not include an accident by reason only of war or radioactivity (S. C. Tripathi).

Stop to Consider:

Anthropogenic Disaster:

We can cite here few anthropogenic disasters all over the world, which has left a mark on human history:-

- Bhopal Gas Tragedy (1984) where gas leakage from a plant exposed people to toxic gas thereby causing massive casualties.
- Chernobyl Nuclear Disaster (1986) where a reactor explosion led to widespread radiation contamination.
- Titanic sinking (1912) where the passenger ship got mashed against an iceberg thereby leading to massive accident.
- Hiroshima and Nagasaki bombings (1945) where dropping of atomic bombs caused unprecedented destruction.

There are many such examples of anthropogenic disasters which have resulted in tremendous destructions.

Check Your Progress:

1. Discuss different types of anthropogenic disasters. How do they differ from the natural disasters?

2. Discuss the connection between technological advancements and anthropogenic disasters.

3. How does human negligence contributes towards anthropogenic disasters? Cite important case studies to substantiate your answer.

4. The increasing trend of urbanisation and industrialisation has increased the risk of anthropogenic disasters. Discuss.

5. Discuss the role of judiciary in dealing with anthropogenic disasters. Cite two important cases in this regard.

6. What is Blue Economy? Discuss its connectedness with that of anthropogenic disasters.

3.10 Summing Up

Thus, from the above discussion, we have understood the fact that disasters can be natural or man-made. Anthropogenic disasters are caused by negligence on the part of human activities. Sometimes, this negligence is unintentional though. These anthropogenic disasters are like industrial accidents, nuclear disasters, deforestation, war and terrorism etc and it results in disastrous effects like that of global warming and climate change. We have discussed above different types of anthropogenic disasters and seen that both anthropogenic and natural disasters cause enormous harm to mankind. What is the way out? Natural disasters are beyond our control. But anthropogenic disasters are within our control. So, the need of the hour is to embrace a comprehensive and strategic approach towards sustainable infrastructural development while maintaining economic efficiency and also focus need to be given on meticulous project planning and enhancing the effective inclusion of environmental and social considerations during project implementations. All these will help in ensuring a holistic and inclusive approach towards sustainable development.

3.11 References and Suggested Readings

- Giel, R. (1998). Natural and human-made disasters. *Adversity, stress, and psychopathology*, 66-76.
- Shaluf, I. M. (2007). An overview on disasters. *Disaster Prevention and Management: An International Journal*, *16*(5), 687-703.
- McDonald, R. (2007). *Introduction to natural and man-made disasters and their effects on buildings*. Routledge.

- Varsha, K., Prathika, S., Theepitha, J. K., & Swathi, S. Evaluating the environmental impact of man-made disasters: Revealing the wide-reaching consequences.
- Jaswal, P. S. and Jaswal, N. (1999) *Environmental Law*. Allahabad Law Agency.
- Tripathi, S. C., (2008). *Environmental Law*. Central Law Publications
- Basu, D. D. (1997) *Introduction to the Constitution of India* (18th ed.), Prentice Hall of India pvt. Ltd., New Delhi.
- KharvelRanjith. *Sustainable Solid Waste Management in India*.
- Da Zhu, P. U. Asnani, Chris Zurbrugg, Sebastian Anapolsky, Shyamala Mani. *Improving Municipal Solid Waste Management in India (A Source book for policy makers and practitioners).*

*****

UNIT- 4

ENVIRONMENTAL HAZARDS AND SOCIAL VULNERABILITY

Unit Structure:

4.1 Introduction
4.2 Objectives
4.3 Understanding Environmental Hazards
    4.3.1 Different Types of Environmental Hazards
    4.3.2 Impact of Environmental Hazards
4.4 The Concept of Social Vulnerability
    4.4.1 Discussing the Factors Contributing to Social Vulnerability
4.5 The Intersection between Environmental Hazards and Social Vulnerability
4.6 The North-East India Context
4.7 Reducing the Adverse Effects of Environmental Hazards and Social Vulnerability
4.8 Summing Up
4.9 References and Suggested Readings

4.1 Introduction

The prevalence and intensity of environmental hazards, including natural disasters, pollution, and climate change, are on the rise. Environmental hazards, arising from a variety of natural and anthropogenic factors, have the potential to precipitate the degradation of ecosystems and the environment, as well as inflict harm upon human health, property, and livelihoods. Upon the

occurrence of environmental hazards, the immediate impact is felt by the communities in closest proximity to the event. The extent of loss and destruction can vary significantly, ranging from minimal to severe, contingent upon the nature and intensity of the threat presented. Nevertheless, it is evident that environmental hazards exert a disproportionate impact on marginalized communities, which often possess diminished financial resources, restricted access to pertinent information, and constrained social networks to depend upon in the face of or subsequent to a disaster. Populations that are vulnerable tend to possess a diminished likelihood of having robust disaster response strategies or access to recovery resources, thereby impeding their capacity to recuperate following an event.

Consequently, this unit will endeavour to elucidate the intersection between environmental hazards and social vulnerability.

4.2 Objectives

After reading this unit you will be able to:

- *understand* the intersection between environmental hazards and social vulnerability;
- *analyse* the factors that contribute to social vulnerability;
- *understand* the intersection between environmental hazards and social vulnerability in the context of North-East India;
- *think* about the policy recommendations aimed to reduce social vulnerability.

4.3 Understanding Environmental Hazards

Environmental hazards are natural or anthropogenic dangers that endanger ecosystems, human health, and infrastructure, potentially

resulting in disasters, biodiversity loss, and enduring environmental harm. These hazards may encompass natural catastrophes such as floods, droughts, earthquakes, and tsunamis, as well as other occurrences that jeopardise environmental health. Natural environmental risks such as floods, tsunamis, and earthquakes are inevitable, however certain hazards are exacerbated by human activity, including unregulated development, urbanisation, industrialisation, deforestation, and the release of greenhouse gases (GHGs). Such hazards emerge in several forms, encompassing occupational threats and extensive ecological disturbances that affect fish, animals, and entire ecosystems. Some arise from work environments, while others develop into extensive environmental catastrophes that significantly impact biodiversity and public health. These hazards are not always disasters; rather, they encompass any event or occurrence that might impact the environment, ecosystem, human health, and property.

4.3.1 Different Types of Environmental Hazards

Let’s explore the different types of environmental hazards from which you can identify them.

Natural Hazards:

Natural hazards are powerful events caused by natural processes of the Earth, often resulting in widespread damage and disruption. These hazards include geological phenomena like earthquakes and volcanic eruptions, as well as hydro meteorological events such as floods, droughts, cyclones, and landslides. Earthquakes occur due to sudden movements in the Earth's crust, leading to ground shaking, infrastructure collapse, and sometimes even tsunamis. Volcanic eruptions release molten lava, ash, and gases, affecting both local and global environments. For instance, on 28th March, 2025 a

powerful earthquake with magnitude 7.7 occurred following another earthquake of 6.7 magnitude after 12 minutes of the prior, leading to loss of more than 5000 lives and severe destruction of infrastructure. The earthquake which originated only 10 kilometers below the surface along the Sagaing Fault, triggered powerful tremors with effects felt as far as away as Bangkok, Thailand, nearly 1000 kilometers from the epicenter. Flood is another most common natural disaster, resulting from excessive rainfall or overflowing rivers, submerging large areas and causing displacement of communities. Assam experiences devastating floods every year, primarily due to heavy monsoon rains and the overflowing of the Brahmaputra River and its tributaries. These floods submerge vast areas, displacing thousands of people, damaging crops, homes, and infrastructure. In addition to the immediate destruction, they also bring long-term challenges like waterborne diseases and loss of livelihoods of the communities that suffer. On the other hand, droughts occur when there is prolonged lack of rainfall, leading to water shortages and crop failures. Coastal areas are particularly vulnerable to cyclones, which bring strong winds, heavy rainfall, and storm surges, causing extensive destruction.

Other natural hazards, such as wildfires, landslides, and tsunamis, also pose serious threats. Wildfires occur in dry regions and can spread rapidly, destroying forests and settlements. The recent wildfires in America in early 2025 and the destruction shows the dangers associated with it. Landslides, triggered by heavy rainfall or earthquakes, cause soil and rock to shift, damaging roads, homes, and livelihoods in hilly regions. Incidents of landslides are very often in the hilly areas of North-East India. One such recent landslide incident occurred in Sikkim on August 20, 2024 causing substantial damage to infrastructure and displacing residents. Tsunamis, generated by undersea disturbances, result in massive

ocean waves that flood coastal areas with little warning, leading to large-scale devastation. The horrible tsunami of Japan of 2011 caused widespread destruction where more than 15000 people were killed. While these hazards are natural occurrences, their impacts can be severe, particularly in areas with high population density and inadequate infrastructure. Effective disaster preparedness and mitigation efforts are essential to minimize the loss of life and property caused by these powerful natural events.

Anthropogenic Hazards:

Human-induced hazards are environmental threats caused by human activities, significantly impacting ecosystems, public health, and overall sustainability. One of the most severe issues is pollution, which includes air, water, and soil contamination. Air pollution, mainly caused by industrial emissions, vehicle exhaust, and crop burning, has led to hazardous air quality in cities like Delhi, where smog frequently causes respiratory illnesses. Water pollution is another critical concern, seen in the contamination of the Ganga due to industrial waste, untreated sewage, and plastic debris, affecting both drinking water sources and aquatic life. Soil pollution, often a result of pesticide overuse and improper waste disposal, depletes soil fertility and threatens food security. Climate change, primarily driven by the burning of fossil fuels, deforestation, and industrial activities, has led to rising temperatures, erratic monsoon patterns, and frequent extreme weather events such as the devastating Cyclone Amphan (2020) in eastern India, which displaced millions.

Deforestation, a major contributor to habitat loss and climate change, where forests are cleared for agriculture, mining, and urban expansion. Industrial accidents, such as the 1984 Bhopal gas tragedy, demonstrate the long-term consequences of chemical leaks,

causing severe health complications and environmental damage. Similarly, nuclear hazards, while less common, pose significant risks, with concerns over radioactive waste management. Poor waste management leads to groundwater contamination and methane emissions, worsening environmental conditions. Overexploitation of resources, such as excessive groundwater extraction for irrigation, has led to water scarcity and declining water tables. Habitat destruction due to rapid urbanization further threatens biodiversity and increases vulnerability to natural disasters. Hence, all such unsustainable development decisions leading to the degradation of the environment.

Stop to Consider:

The Bhopal Gas Tragedy:

The Bhopal Gas Tragedy, which occurred on the night of December 2–3, 1984, in Bhopal, Madhya Pradesh, is considered the world's worst industrial disaster. A deadly cloud of methyl isocyanate (MIC) gas leaked from a pesticide plant owned by Union Carbide India Limited (a subsidiary of the U.S.-based Union Carbide Corporation). The toxic gas spread rapidly over densely populated areas, killing thousands of people within hours and exposing over half a million to harmful chemicals. Immediate and long-term health effects included respiratory problems, blindness, cancer, birth defects, and chronic illnesses. The tragedy exposed grave lapses in industrial safety, poor emergency preparedness, and lack of corporate accountability, leading to global outcry and major reforms in India's environmental and industrial regulation policies.

Biological Hazards:

Biological hazards come from living organisms and can cause diseases and other health problems for people, animals, and plants. These hazards can spread in different ways, such as through air, water, food, or direct contact. One common type of biological hazard is germs, including bacteria, viruses, fungi, and parasites, which cause various illnesses. These diseases can spread quickly, especially in crowded places or where hygiene and sanitation are poor. For example, the Corona-Virus disease spread throughout the world. Dirty water and contaminated food are also common ways for infections to spread, leading to serious health problems.

Another biological hazard is the overgrowth of certain algae in water bodies, which can release harmful substances that affect both humans and marine life. These toxins can make water unsafe for drinking or swimming and can also harm fish and other aquatic creatures. Invasive species, which are plants or animals that enter a new place and grow quickly, can also be dangerous. They can take over natural spaces, harm local plants and animals, and upset the balance of the environment.

Thus, biological hazards can affect health, agriculture, and the environment in many ways. For instance, Corona-Virus in its peak time affected human health taking thousands of lives, and crashing the economy to its low. Biological hazards in the environment too affect the ecosystem as a whole.

4.3.2 Impacts of Environmental Hazards

Environmental hazards lead to severe degradation of natural ecosystems, affecting biodiversity, land, water, and air. For instance, in India, the rapid deforestation in states like Madhya Pradesh and Chhattisgarh due to logging and agriculture has led to the

destruction of critical habitats for species such as tigers, elephants, and other wildlife. The loss of forest cover also contributes to soil erosion and disrupts local ecosystems. Deforestation, pollution, and climate-related disasters result in habitat destruction, soil erosion, and loss of species. The polluted Yamuna River in Delhi, caused by industrial effluents, untreated sewage, and religious offerings, has severely damaged aquatic life, including fish and plant species. As the river becomes increasingly uninhabitable, local communities that rely on it for water and livelihoods suffer. Air and water pollution degrade the quality of natural resources, making them unsuitable for wildlife and plant growth.In Delhi, air pollution levels are often among the highest in the world, due to a combination of vehicle emissions, industrial pollutants, and crop-burning in neighbouring states like Punjab. This pollution impacts both human health and the environment, including the stunting of plant growth and the death of sensitive species. Soil degradation due to overuse of chemicals and deforestation weakens agricultural productivity, leading to land becoming barren over time.In Punjab, the extensive use of chemical fertilizers and pesticides, combined with water-intensive farming practices, has led to soil degradation and a decline in agricultural productivity. Many areas now face groundwater depletion and soil salinization, threatening the region's ability to sustain crops in the future. Climate change further intensifies these hazards by increasing the frequency of extreme weather events, which disrupt ecosystems and reduce their ability to regenerate. In coastal states like Kerala, rising sea levels and intensified cyclones, such as Cyclone Ockhi in 2017, have led to widespread damage to coastal ecosystems, including mangroves, which are vital for biodiversity and coastal protection. These disruptions make it harder for ecosystems to regenerate and support local communities.

The impact on human health is significant, as exposure to polluted air and water leads to respiratory diseases, infections, and long-term conditions like heart disease and cancer. In cities like Delhi, persistent air pollution, particularly in the winter months, has led to a rise in respiratory diseases such as asthma, bronchitis, and lung cancer. Studies have shown that children and the elderly are especially vulnerable to these conditions. Contaminated food and water sources contribute to the spread of illnesses, affecting large populations. Prolonged exposure to toxic chemicals in the environment has severe health consequences, including neurological disorders and weakened immune systems.In industrial regions like Vapi and Ankleshwar in Gujarat, prolonged exposure to hazardous chemicals has been linked to higher incidences of neurological disorders, cancer, and other chronic health conditions among workers and local populations. Additionally, rising temperatures and poor air quality increase the risk of heat-related illnesses and respiratory conditions, particularly in vulnerable populations.

Environmental hazards also cause substantial economic and social disruptions. Damage to infrastructure, homes, and agricultural land results in financial losses and increased costs for recovery and rebuilding. Floods, droughts, and soil degradation reduce agricultural productivity, leading to food shortages and economic instability. Communities often face displacement due to natural disasters and environmental degradation, leading to loss of livelihoods and social tensions. In the Sundarbans region of West Bengal, rising sea levels and increasing cyclone activity have led to displacement of communities living in the delta, with many losing their homes and livelihoods. This displacement has caused social tensions as communities struggle to adapt and find new sources of income. Over time, these challenges contribute to resource conflicts, migration, and a decline in overall living conditions, making it

increasingly difficult for societies to recover from environmental hazards.

Check Your Progress:

1. What do you mean by environmental hazards?
2. What are the different types of environmental hazards?
3. Write a note on the impact of environmental hazards.

4.4 The Concept of Social Vulnerability

Social vulnerability refers to the potential state of individuals, communities, or societies to get harmed by any event due to social, economic, demographic, and environmental factors. It reflects the ability of a group to anticipate, cope with, resist, and recover from adverse events such as natural disasters, economic crises, or public health emergencies.

Social vulnerability becomes evident after a disaster or hazardous event when different groups of people, despite being exposed to the same conditions, experience different levels of impact. This highlights why certain segments of the population such as children, elderly individuals, women, and marginalized communities tend to suffer more severely compared to others, even though they are affected by the same event. Various factors, which will be discussed in the following sections, can reduce a community's ability to recover quickly from the effects of a disaster, thereby worsening their already vulnerable condition.

Social vulnerability may result from the power relations that exist in the society. This power relation leads to social inequality based on gender, class, race, culture, nationality, age, and other power relations. Social class is a very important factor that leads to social

vulnerability. The factor includes employment, income, savings, and education levels, the quality of human settlements and so on. For example, if you see two family, one family having good savings with a decent paid job and one family having lesser income; the social vulnerability of the latter is higher than the other one. If suddenly an unprecedented hazard or pandemic like Corona Virus comes, then the person with higher savings will remain with higher capability of accessing better healthcare or any other services.

4.4.1 Discussing the Factors Contributing to Social Vulnerability

There may be numbers of factors contributing to the vulnerability of an individual, group or a community. As mentioned earlier, it may be age, economic condition, employment, and education, marginality so on and so forth. We can understand the factors that can contribute to social vulnerability under some heads as follows:

Socio-Economic Factors:

Social factors play a crucial role in determining how vulnerable a community is to risks and disasters. People with higher social status usually have better access to resources such as education, healthcare, and financial stability, which helps them recover quickly from hardships. On the other hand, those with lower social status often struggle with limited access to these resources, making them more susceptible to crises. For example, during natural disasters like cyclones or floods, wealthier families can afford to live in well-constructed houses, while economically weaker families may reside in poorly built homes that are more susceptible to destruction. After a disaster, financially stable individuals can quickly rebuild or relocate, whereas low-income families may face long-term struggles due to a lack of savings and insurance.

Gender also plays a critical role in social vulnerability. Women often take on additional responsibilities such as childcare and household management while contributing to family income. However, their work, especially in informal sectors like domestic labour or small-scale farming, is often undervalued and underpaid. For instance, during the COVID-19 pandemic, many women working as street vendors or domestic workers lost their jobs and struggled to find alternative sources of income, making them more vulnerable to economic hardship**.**

Moreover, the gendered norms that exist in the society which give women an inferior position intensify women's social vulnerability. Such norms hinder women's development in different field whether in education, employment or others. In many societies, health and education of women is not prioritized. As a result, millions of women face low nutrition status, and an education gap can be seen between men and women. Because of the existing education gap, millions of women remained unaware of their situation. Hence, this makes them more socially vulnerable. The existing gender gap in education, employment and society as a whole is responsible for this vulnerable position of women.

Another key factor is household dependency. Families that rely on a single or few earning members are at a greater risk of financial instability if those earners lose their jobs due to illness, layoffs, or economic downturns. For example, if a household depends solely on one working parent and that parent becomes unemployed due to an industry shutdown, the entire family may face severe financial distress. Additionally, families with members who have disabilities or chronic illnesses often require extra resources for medical care and support, further increasing their vulnerability.

On the other hand, strong social networks can help reduce vulnerability. Communities that participate in self-help groups

(SHGs) or cooperative societies often have better access to financial aid, employment opportunities, and support systems. For example, in rural India, women-led self-help groups have successfully provided microloans and skill training, helping families build financial independence and resilience in difficult times. Similarly, neighbourhood associations or local NGOs often provide relief support during disasters, ensuring that vulnerable families receive timely assistance. But lack of social network or lack of social communication also contribute to social vulnerability.

Demographic Factors:

Demographic characteristics play a crucial role in determining how vulnerable a community is to disasters and crises. Factors such as population density, family structure, and the rural-urban divide influence access to resources, mobility, and economic stability, ultimately affecting a community's ability to cope with and recover from adversities.

One major factor is population density and rapid growth. India, with its large and growing population, faces significant challenges in resource distribution. High population density in urban areas makes cities more vulnerable to hazards. For example, Mumbai, one of India's most densely populated cities, frequently experiences devastating floods during monsoons. Poor drainage systems, overcrowded slums, and inadequate urban planning contribute to severe waterlogging, disrupting daily life and exposing residents to waterborne diseases. Similarly, Delhi struggles with high levels of air pollution due to congestion, industrial emissions, and excessive vehicular traffic, impacting public health.

Family structure and dependency ratio also influence social vulnerability. Households with a high number of dependents, such

as young children and elderly members, may find it difficult to respond to emergencies effectively. For instance, during the COVID-19 pandemic, families with elderly members faced increased risks due to their higher susceptibility to the virus, while children's education was disrupted, particularly in low-income households that lacked access to digital learning. In disasters like the 2004 Indian Ocean tsunami, many children and elderly individuals in Tamil Nadu's coastal villages were unable to escape in time, leading to higher fatality rates.

Another critical factor is the rural-urban divide. Rural communities in India often experience higher vulnerability due to their dependence on agriculture and limited access to healthcare, education, and alternative income sources. For example, during severe droughts in Maharashtra and Karnataka, farmers faced massive crop failures, leading to financial distress and large-scale migration to cities in search of work. On the other hand, urban areas, while offering more opportunities, face challenges related to unplanned growth. Slum dwellers in cities like Kolkata and Chennai live in precarious conditions, with inadequate housing, poor sanitation, and limited access to emergency services, making them more susceptible to disasters such as cyclones and disease outbreaks.

Overall, demographic factors such as rapid urbanization, family dependency, and regional disparities contribute significantly to social vulnerability in India.

Environmental and Infrastructural Factors:

Environmental and infrastructure limitations significantly increase social vulnerability by exposing communities to greater risks during disasters and crises. Poor urban planning, inadequate access to basic

services, and climate-related hazards make certain populations more susceptible to harm. For instance, the state of Assam frequently experiences severe flooding, erosion, and earthquakes, while poor infrastructure and limited access to basic services further escalate risks for affected populations.

One of the most critical factors is annual flooding and riverbank erosion. Assam, located in the flood-prone Brahmaputra Valley, faces devastating floods every monsoon season, displacing thousands of people and destroying homes, crops, and livestock. Riverbank erosion by the Brahmaputra and its tributaries has led to the loss of agricultural land and forced communities to migrate, increasing their long-term vulnerability. Majuli, the world's largest river island, has been shrinking due to continuous erosion, threatening the livelihoods of its residents.

Another critical issue is inadequate access to essential services such as clean water, sanitation, and healthcare. In rural areas, states like Jharkhand and Odisha struggle with water scarcity, forcing communities to rely on unsafe water sources, leading to the spread of waterborne diseases. In urban areas, poor sanitation infrastructure contributes to frequent disease outbreaks, particularly in slums where open drains and garbage accumulation create unhygienic living conditions.

Climate change and natural disasters further increase vulnerability. Coastal states like Odisha and West Bengal are frequently struck by cyclones, such as Cyclone Amphan (2020), which destroyed homes, uprooted livelihoods, and displaced thousands. Similarly, in northern states like Uttarakhand and Himachal Pradesh, landslides and flash floods triggered by heavy rainfall have repeatedly damaged infrastructure and cut off access to basic necessities, leaving communities stranded.

These environmental and infrastructure factors collectively increase social vulnerability by exposing marginalized populations to greater risks, limiting their ability to respond to hazards, and deepening the long-term impacts of disasters.

Check Your Progress:

1. Define the concept of social vulnerability?
2. What are the key factors influencing social vulnerability?

4.5 The Intersection between Environmental Hazards and Social Vulnerability

Environmental hazards, such as climate change, pollution, and natural disasters, tend to impact vulnerable communities the most. These communities often face higher risks because of where they live, their financial situation, and other social factors. For example, low-income neighbourhoods are more likely to be located in flood-prone areas, near factories that release pollution, or in regions that experience extreme weather. Since these communities often have fewer resources, they struggle to prepare for disasters, respond effectively when they occur, and recover afterward. This deepens existing social inequalities, making it even harder for these groups to escape cycles of poverty and poor health.

Throughout history, environmental hazards have not affected all populations equally. Minority and low-income communities are often placed in areas with higher pollution levels or greater exposure to hazards due to historical policies such as redlining, industrial zoning decisions, and economic inequality. These patterns have persisted over time, making certain groups more vulnerable to environmental risks than others.

In recent years, climate change has worsened many of these issues, bringing more extreme weather events such as hurricanes, wildfires, and heatwaves. These disasters tend to hit low-income and marginalized communities the hardest. For example, the 2005 Hurricane Katrina in United States, where thousands of people in low-income areas struggled to evacuate and find safe shelter. Many residents lacked the financial means to leave in time, and after the storm, they faced major difficulties in getting aid and rebuilding their lives. This disaster showed how social and economic factors influence people's ability to cope with environmental crises. Those with fewer resources had a much harder time recovering, while wealthier neighbourhoods were able to rebuild more quickly. Another example is the impact of industrial pollution in Bhopal. The 1984 Bhopal Gas Tragedy, one of the world's worst industrial disasters, led to thousands of deaths, primarily among poor communities living near the Union Carbide pesticide plant. Decades later, many survivors still continue to suffer from health problems and a long-term impact of the disaster. These disasters highlighted how industrial activities often place marginalized groups at the greatest risk. This pattern continues with other disasters, as seen in recent hurricanes, wildfires, and even extreme heat events that disproportionately affect those without access to air conditioning or safe housing.

Another ongoing issue is industrial pollution, which continues to harm low-income communities. Studies show that areas with high levels of air pollution tend to have a larger minority population. People living in these areas face serious health risks, including higher rates of asthma, lung diseases, and heart conditions. Since healthcare access can also be limited for these communities, the long-term effects of pollution make social inequalities even worse. Many of these communities have also been fighting for stronger

regulations and protections, but economic and political factors often make progress slow. Large industries and corporations sometimes resist stricter environmental regulations, arguing that they would hurt businesses and local economies. This creates tension between economic development and public health, making it difficult to find solutions that benefit everyone.

There are different opinions on how to solve these problems. Some experts argue that major systemic changes are necessary, such as reducing poverty, addressing racism, and improving education and healthcare access. They believe that fixing the root causes of inequality will help make communities more resilient to environmental hazards. Others believe in smaller, community-based solutions, such as local disaster preparedness programs, cleaner energy initiatives, and public awareness campaigns. Involving local residents in decision-making can also be an important step in creating solutions that meet the specific needs of vulnerable populations. Many environmental justice organizations emphasize the importance of giving communities a voice in policies that affect them, rather than making top-down decisions that do not take local realities into account.

Technology also plays a growing role in addressing environmental hazards and reducing risks for vulnerable communities. Advanced mapping tools and data analysis help identify high-risk areas, allowing for better disaster response and planning. Early warning systems for extreme weather events can give people more time to prepare, andcleaner energy solutions can help reduce pollution levels. These technological advancements have the potential to makeenvironmental protection efforts more efficient and effective. However, access to these tools is not always equal, and efforts must be made to ensure that all communities can benefit from these innovations.

Looking ahead, climate change will continue to bring challenges, with more frequent and severe natural disasters. Governments and policymakers must prioritize addressing social vulnerability as part of climate adaptation efforts. This includes improving infrastructure in at-risk areas, strengthening emergency response systems, and ensuring that resources are fairly distributed. In addition, it is crucial to involve communities in decision-making processes so that their needs and concerns are considered in long-term planning.

At the global level, international efforts to combat climate change must take into account the diverse vulnerabilities faced by different populations. Equitable distribution of resources, financial support for affected regions, and stronger environmental policies are necessary to create a fairer and more sustainable future. As climate-related challenges grow, addressing the intersection between environmental hazards and social vulnerability will be essential in building a world where all populations can be protected from harm.

Self-Asking Question:

How environmental hazards are intersected with social vulnerability? (250 words)

……..
……..
……..

4.6 The North-East India Context

Northeast India is known for its rich biodiversity and unique geographical features, heterogenic cultures. However, this environmentally rich region also faces numerous environmental hazards that threaten its ecological balance and human settlements. Due to its complex geographical and geological position, including hilly terrain, numerous river systems making it susceptible to flash

floods, and being located in a seismically active zone, making it vulnerable to earthquakes, fragile ecosystem and socio-economic factors all these make the region very vulnerable to environmental hazards and climate change. One of the most significant challenges is flooding, soil erosion and landslides, particularly in states like Assam, Arunachal Pradesh, and Meghalaya. The Brahmaputra and Barak rivers and their tributaries frequently get overflowed during the monsoon season, leading to large-scale displacement and destruction. In the hilly regions of Nagaland, Mizoram, and Manipur, landslides occur due to deforestation, unplanned construction, and heavy rainfall, disrupting transportation and livelihoods.

Another major concern is deforestation and biodiversity loss. The practice of shifting cultivation (jhum), illegal logging, and infrastructure development have resulted in widespread deforestation, reducing forest cover and endangering several species. Wildlife habitats, especially in states like Arunachal Pradesh and Assam, are under threat, putting iconic species such as the one-horned rhinoceros and hoolock gibbons at risk. The loss of forest cover also contributes to soil erosion, particularly along the banks of the Brahmaputra, where riverbank erosion leads to the displacement of thousands of people each year. Majuli, world's largest river island is shrinking due to this.

Northeast India is also highly earthquake-prone, as it falls under Seismic Zone V, the highest risk category in India. Frequent earthquakes in Assam, Manipur, Mizoram, and Arunachal Pradesh pose a significant threat to infrastructure and human safety. In addition to seismic risks, climate change is affecting the region, with unpredictable rainfall patterns, rising temperatures, and glacial melting in the Himalayas impacting water availability and agriculture. A major sign of climate change was the glacial lake

outburst in Arunachal Pradesh in October 2020, when a sudden flood from melting glaciers caused landslides and damage to bridges and roads. Rising temperatures are also affecting tea production in Assam, as excessive heat and irregular rainfall reducing yields. In case of pollution, Guwahati city of Assam is being one of the most polluted cities now.

River pollution and water crises are emerging issues due to industrial waste, oil spills, and plastic pollution. The Brahmaputra and its tributaries have been affected by contamination. There have been incidents such as the 2020 Baghjan Oil Field disaster, where a gas leak leading to eruption of fire leading to loss of lives and property, loss of bio-diversity. The blowout lasted for over five months, displacing thousands of families, and severely polluting the Dibru-Saikhowa National Park. The fire and toxic emissions killed aquatic life in the nearby Maguri-Motapung wetland and affected the health of local residents.

As we are discussing about the intersection between environmental hazards and social vulnerability, we can understand that, in case of North-East too this intersection is severe. In Northeast India, social vulnerability is influenced by a combination of geographical and socio- economic factors that shape the region's ability to cope with disasters and long-term environmental changes. Geographical diversity in the region, ranging from the hilly terrain to river systems make certain areas more susceptible to landslides and flooding. The entire Northeast, except for the plain areas of Assam, Manipur, and Tripura, is considered vulnerable to landslides, including states like Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura. Communities living in these high-risk zones face higher exposure to environmental hazards. The risk intensifies with poverty and livelihood dependence. In Northeast India, many residents depend on agriculture and natural resources

for their livelihoods. Environmental hazards can devastate crops and disrupt livelihoods, pushing already marginalized groups further into poverty. For instance, in Assam, the communities residing by the rivers in the floods, loss their houses, crops, domestic animals even lives, along with livelihood. Basically, they are poor and socially vulnerable which makes the situation worse. Poor infrastructure, poor communication in many areas makes it more complex to cope with disaster. All these makes Northeast India and people of this region more vulnerable to environmental hazards.;

4.7 Reducing the Adverse Effects of Environmental Hazards and Social Vulnerability

Till now, we have understood environmental hazards and social vulnerability. Now, it is important to look into the steps to mitigate the environmental hazards and social vulnerability. Some environmental hazards are natural and they arise because of the natural processes of the earth and hence they are unavoidable. To face and mitigate such environmental hazards, there should be some well formulated mitigation and adaptation strategy. For example, disasters like flood and earthquake are natural and unavoidable. Hence, to face such hazards, there should be preparedness for these hazards. In case of flood, there should be resilient infrastructure like embankments along with resilient housing, and there should be weather prediction and alerting the nearby communities about the upcoming hazard. For example, in Assam, communities which are settling nearby the river and is flood affected, resilient housing like *Chang Ghar* is build or the foundation of the house is kept taller. This helps to prevent the floodwater flush into the houses until the flood situation goes worsen. Weather forecasting is a very useful strategy in such case and also in case of disasters like tsunami, earthquake, storm etc. In earthquake prone areas, there should be

resilient infrastructure including resilient housing pattern. Hence, adaptation and mitigation strategy are very important to adapt in reducing the impact of environmental hazards.

The government should take proactive action to mitigate the environmental hazards and its adverse impacts. There should be well formulated policy regarding this. Indian government has taken several steps to mitigate environmental hazards through policies, regulations, and initiatives. A very important step towards the protection of the environment against the hazards is the Environmental Protection Act, 1986 providing a framework for protecting and improving the environment. It was enacted in response to the Bhopal Gas Tragedy (1984) and aims to prevent and control environmental hazards. The act strengthens environmental governance by empowering authorities like Central Pollution Control Board and supports legal action against industries or authorities that harm the environment. Another important act is the Water (Prevention and Control of Pollution) Act (1974) which prevents and controls water pollution. National Green Tribunal (2010) is another significant step which is a body that handles environmental cases efficiently.

Government of India is taking steps like launching of the National Clean Air Programme, 2019 aiming to reduce pollution level. The government is also working on adapting renewable energy which can be seen in the proactive engagement in International Solar Alliance to promote solar energy. Mission like Green India Mission, Project Tiger and Project Elephant are some other examples which are aiming towards the protection of the environment. The government is also doing towards adopting sustainable agriculture. Disaster management and climate resilient steps are also taken by the government. There are more initiatives, that are taken but these are some important mentions. With these initiatives, India is

tackling environmental hazards while promoting sustainable development.

Several Non-Governmental Organizations (NGOs) too working towards reducing environmental hazards and their impacts. Prominent global organizations including World Wildlife Fund (WWF), The Nature Conservancy, and Greenspeace etc. are working on global level, some India-based NGOs like Wildlife Protection Society of India (WPSI), Chintan Environmental Research and Action Group are working in national level.

While tackling the environmental hazards, realizing the serious interconnection between environmental hazards and social vulnerability is very important. As discussed earlier, social vulnerability refers to the vulnerable status of an individual, group or community with higher risk of getting harmed by any hazardous event. Hence, it is important to look into the existing vulnerable individuals, group or people and the possible risk of them to environmental hazards. To do this the first step is to identify and measuring social vulnerability is important. Identification of social vulnerability can be simple as well as complex as vulnerability can be caused by combined factors like physical, social, economic, and demographic and others. It is also context dependent, for instance one marginalised group at one place may be vulnerable to environmental hazards but the same group probably not being vulnerable in another place. Here, the demographic, economic factors may influence to increase or decrease vulnerability. Suppose, women from a community who resides by the river and in a flood-prone area are more vulnerable than other women. So, while identifying and measuring social vulnerability it is important to understand that social vulnerability is very contextual.

There should be some vulnerability identification tools which may be both quantitative and qualitative. A commonly used tool may be

census which should be inclusive enough to identify the social vulnerabilities. Common indicators to measure social vulnerability are gender, health status, access to education and healthcare, poverty, age, property ownership, employment, housing pattern etc. Considering these in identifying and measuring social vulnerability is important. After that, steps should be taken at different levels, whether in government level or community level. Integrating indigenous knowledge towards the mitigation of environmental hazard is a very relevant step in this regard. With all these the risk or the impact of the environmental hazard on the vulnerable communities can be mitigated.

Check Your Progress:

1. What are the environmental hazards that North-East India face?
2. How social vulnerability in the region intensify the dangers of environmental hazards?
3. What are the steps taken by the government to mitigate environmental hazards?

Self-Asking Questions:

1. How social vulnerability can be identified and measured?

……
……
……

2. What recommendations will you give to reduce social vulnerability?

……
……
……
……

4.8 Summing Up

From the above discussions, we have understood the intersection between environmental hazards and social vulnerability. Vulnerability is the degree to which a person, group or a community is susceptible to harm due to any risky event. Social vulnerability, as discussed in the earlier sections may be influenced by different factors such as age, gender, race or ethnicity, class, economic status and so on. Environmental hazards impact the socially vulnerable people or groups disproportionately. Hence, it is very important to take measures to mitigate the environmental hazards as well as reduce social vulnerability. Sustainable development should be a primary concern. Authority should stress more on environmental governance. We should be more caring towards the environment and environmental awareness should be spread to the society. Mitigating environmental hazards and social vulnerability is only possible with a collective process, for which cooperation is needed from every single individual, community, government and in global community.

4.9 References and Suggested Readings

- Adger, W. N. (2006). Vulnerability. Global Environmental Change, 16(3), 268–281.
- Bhattacharjee, J., &Behera, M. D. (2024). How vulnerable are India's north-eastern hills to climate change? Asian-Pacific Journal of Regional Science. https://ui.adsabs.harvard.edu/abs/2024APJRS.tmp...43E/abstract
- Cutter, S. L., Boruff, B. J., & Shirley, W. L. (2003). Social vulnerability to environmental hazards. Social Science Quarterly, 84(2), 242–261.

- Das, S., &Sarmah, S. (2022). Seismic risk assessment for the North Eastern Region of India. Georisk: Assessment and Management of Risk for Engineered Systems and Geohazards, 16(1), 22–36. https://doi.org/10.1080/23789689.2022.2133764
- Eakin, H., &Luers, A. L. (2006). Taking social vulnerability seriously in research on climate change impacts: Some implications from research on drought, floods, and coastal hazards. Global Environmental Change, 16(2), 129–139.
- Fothergill, A. (2009). Race, class, and Hurricane Katrina: Social differences in human responses to disaster. Routledge.
- Goswami, D. C., & Das, P. J. (2016). Natural hazards in the North-East region of India. Journal of the Geological Society of India, 88(6), 705–714. https://doi.org/10.1007/s12594-016-0497-1
- IPCC. (2022). Climate change 2022: Impacts, adaptation, and vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.
- Morss, R. E., Wilhelmi, O. V., Downton, M. W., &Gruntfest, E. (2005). Flood risk, uncertainty, and scientific information for decision making: Lessons from an interdisciplinary project. Bulletin of the American Meteorological Society, 86(11), 1593–1601.
- Morrow, B. H. (1999). Identifying and mapping community vulnerability. Disasters, 23(1), 1–18.
- Sharma, U., &Patwardhan, A. (2008). An empirical approach to assessing climate change vulnerability: The case of North-East India. Current Science, 94(4), 506–515.

- Tiwari, P. C., & Joshi, B. (2012). Natural and socio-economic factors affecting the 2010 floods in the Alaknanda Basin, Uttarakhand Himalaya, India. Journal of Mountain Science, 9(3), 343–349. https://doi.org/10.1007/s11629-012-2220-y
- Wisner, B., Blaikie, P., Cannon, T., & Davis, I. (2004). At risk: Natural hazards, people's vulnerability and disasters. Routledge.

---×---

UNIT-5

INDIGENOUS COMMUNITIES AND CPR

Unit Structure:

5.1 Introduction
5.2 Objectives
5.3 Indigenous Communities and CPR
5.3.1 Overview of Common Property Resources
5.3.2 Indigenous Governance Systems and CPRs
5.4 Challenges Faced by Indigenous Communities with CPRs
5.5 Sustainable Practices and Solutions
5.6 The Context of North-East India
5.7 Summing Up
5.8 References and Suggested Readings

5.1 Introduction

Common Property Resources (CPRs) are those resources which are collectively owned, managed, or used by a community rather than individuals or the state. These resources include forests, grazing lands, rivers and so on. Any property needs governance, and these CPRs too, needs governance, which is different from the governance of private property as it comes under private ownership and governance. Governance of CPRs requires common governance of the communities, and these are usually expected to be governed by shared rules and customs to ensure sustainable and equitable access. So, indigenous communities have a great role in the governance of CPRs with their traditional knowledge to prevent these resources from degradation and exploitation. However, many times, it is seen that these resources face challenges such as population pressure, commercialization, government intervention, and exploitation of

CPRs for personal gain, leading to depletion. Hence, effective governance of CPRs needs to be achieved with the active participation of indigenous communities and collaborative management. Protecting Common Property Resources is essential for promoting environmental sustainability, social equity and economic stability, particularly for the marginalised communities that depend on the CPRs for their livelihood. In this unit, we will discuss different aspects of CPRs and the role of indigenous communities in the governance of CPRs along with discussing the issues and challenges related to it.

5.2 Objectives

After going through the unit, you will be able to-

- *understand* what a Common Property Resource is;
- *understand* the role of indigenous communities in governing the CPRs;
- *identify* the issues faced by the CPRs;
- *analyse* the challenges in front of the indigenous communities in accessing and governing the CPRs;
- *understand*the significance of CPRs for the indigenous communities in North East India.

5.3 Indigenous Communities and CPRs

Common Property Resources (CPRs), as mentioned earlier, are those common resources which are owned by a village or a community. Common Property Resources (CPRs) are natural resources such as forests, fisheries, and grazing lands, water bodies that are collectively owned, managed, and utilized by a community

rather than individuals. These resources play a crucial role in the livelihoods, culture, and sustenance of many communities' worldwide, particularly indigenous groups. Indigenous communities have historically relied on CPRs for their survival, practicing sustainable and communal management systems based on traditional knowledge, customs, and collective responsibility. Their relationship with CPRs is deeply rooted in their cultural identity, spiritual beliefs, and ecological understanding, often ensuring the long-term conservation and equitable distribution of these resources. However, external pressures such as land privatization, state interventions, resource extraction, and climate change threaten both indigenous rights and the sustainability of CPRs. In the following sections, we will try to understand CPRs and their importance in the livelihood of the indigenous community.

5.3.1 Overview of Common Property Resources

According to Jodha (1986) CPRs are natural resources owned, utilized, and managed collectively by a community rather than by individuals or the state (Jodha, 1986). This definition highlights the communal nature of these resources, emphasizing that they are neither entirely private nor fully. Instead, they are shared among community members who depend on them for their livelihoods and sustenance. Other scholars like, Elinor Ostrom (1990) described CPRs as the resources that are neither purely private nor purely public but are shared by a group of individuals where exclusion is difficult, and use by one individual reduces availability to others. Similarly, according to Bromley (1991) CPRs are resources for which exclusion is costly and where one person's use reduces the availability for others. This definition emphasizes the difficulty in restricting access to these resources and the potential for depletion if not managed properly. Garrett Hardin (1968) introduced the idea of

the "tragedy of the commons," arguing that individuals, acting in their self-interest, tend to exploit shared resources, leading to their destruction. CPRs thus involve shared access, common rights, and require collective governance to prevent overuse and degradation.

Stop to Consider:

Tragedy of the Commons:

The "Tragedy of the Commons," a concept popularized by ecologist Garrett Hardin in his 1968 essay, describes how individuals, acting in their own self-interest, can collectively overexploit and degrade shared natural resources. Using the example of a common pasture open to all herders, Hardin argued that each herder would add more animals to maximize personal gain, ignoring the fact that the pasture's capacity is limited. Eventually, this leads to overgrazing, resource depletion, and long-term loss for the entire community. Hardin's theory highlights the need for regulation, collective responsibility, or property rights to manage common resources like air, water, fisheries, and forests sustainably and avoid environmental collapse.

Now let us discuss about the different types of CPRs around us. Broadly, they can be categorised as follows:

Land-Based Common Property Resources:

These resources include forests, pastures, grazing lands, and wastelands that communities use collectively. Many rural communities depend on forests for fuelwood, timber, fodder, medicinal plants, and non-timber forest products. Forest CPRs are significant in countries with a high dependence on biomass energy and traditional medicine. Pastures and Grazing Lands are lands

which are commonly shared by pastoralists and farmers for grazing livestock. Proper management of these resources is necessary to prevent overgrazing and land degradation. Another example of land-based Common Property Resources is wastelands. These include degraded lands that are sometimes reclaimed for agriculture, afforestation, or other community uses.

Water-Based Common Property Resources:

Water resources are essential CPRs for domestic requirements, drinking, irrigation, and fishing. Examples of water-based CPRs include lakes, rivers, and streams. Shared water bodies are essential for everyday consumption, fishing, and irrigation in many rural and urban populations. Another crucial CPR is groundwater. In many areas, boreholes and wells are used to extract groundwater jointly. CPRs include coastal resources and fisheries, which sustain millions of livelihoods globally.

Air and Atmospheric Resources:

Although not always classified under CPRs, air and the atmosphere are shared resources. Pollution control, carbon trading, and climate change mitigation efforts focus on maintaining the quality of atmospheric resources.

Wildlife and Biodiversity as CPRs:

Wildlife and biodiversity conservation areas are often managed as CPRs, especially in regions where local communities depend on eco-tourism, and traditional practices. National parks, wildlife reserves, and community-managed conservation areas fall under this category. However, due to overuse and exploitation, state intervention and regulation have been increased on these CPRs.

Irrigation Systems and Infrastructure as CPRs:

Traditional irrigation systems such as tanks, canals, and wells are managed collectively in many parts of the world. These systems require cooperative efforts for maintenance and equitable water distribution. These are some types of CPRs which are owned by the community as a whole and not by any individual on their own. Ownership, control and managing Common Property Resources (CPRs) is not very simple. There are many issues related to it. The issue with the access and management of CPRs can be understood by the Garet Hardin's concept of "the tragedy of the commons".

Garett Hardin in his influential essay "The Tragedy of the Commons, 1968", discussed the deterioration of shared grazing land in England, arguing that individuals acting in their own self-interest tend to overexploit common resources. He wrote:

> *As a rational being, each herdsman seeks to maximize his gain….. [Thus each] herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another, and another…… But this is the conclusion reached by each and every rational herdsman sharing a commons. Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit—in a world that is limited….. Freedom in a commons brings ruin to all. (Hardin, 1968, p.162).*

He asserted that without external regulation, such as government-imposed restrictions, the unsustainable use of common property resources would inevitably result in their collapse.

Elinor Ostrom refuted Hardin's notion of the "tragedy of the commons" by illustrating that communities using shared resources such as forests, fisheries, oil fields, and grazing lands, can effectively manage them without sole reliance on government

intervention or privatization. Her research, which earned her the Nobel Memorial Prize in Economic Sciences, demonstrated that many societies have historically maintained sustainable resource management through institutional arrangements based on social norms and customs rather than formal laws. She outlined several essential factors for successful local governance, including the direct involvement of resource users in formulating management rules, accountable monitoring systems, accessible and cost-effective dispute resolution mechanisms, context-specific regulations, and a system of proportional penalties for rule violations. While Ostrom emphasized the efficiency of community-led management, she acknowledged that government support could still play a role. She proposed a "nested" governance model for large-scale resources, integrating multiple levels of authority. For example, while a government may be responsible for enforcing an Individual Transferable Quota (ITQ) system, local fishing communities could participate in designing the rules and addressing conflicts (Ostrom, 1990).

Thus, there is a debate concerning the access, use and control of Common Property Resources (CPRs). The debate revolves around issues of sustainability, equity, and governance. Scholars like Garrett Hardin argue that shared resources are prone to overuse and degradation unless externally regulated, advocating for government intervention or privatization to prevent resource depletion. In contrast, Elinor Ostrom's research challenges this view, demonstrating that communities can successfully manage common property resources through locally developed rules, social norms, and collective action. The debate also extends to questions of power dynamics, as marginalized communities, including indigenous groups, often struggle to retain control over their traditional resources in the face of state policies, commercial exploitation, and

land privatization. Governments and international organizations have attempted to address these challenges through policies such as co-management strategies, where local users collaborate with authorities in resource governance. However, conflicts persist over land rights, environmental conservation, and economic interests, making the sustainable management of common property resources a complex and ongoing global issue.

Check Your Progress:

1. What are the Common Property Resources (CPRs)?
2. Explore the debate around CPRs.

5.3.2 Indigenous Governance Systems and CPRs

Indigenous communities globally have historically depended on common property resources (CPRs) such as forests, pastures, and water bodies for their livelihoods, cultural practices, and social structures. These resources are typically non-exclusive, with usage rights shared among community members. In India for instance, CPRs such as forests, pastures, wetlands, coastal waters so on play a vital role in supporting rural livelihoods. CPRs are widespread across the country- forests in central India, North-East India, sacred groves in the Western Ghats, wetlands in Assam and Bihar so on. Indigenous communities are dependent on these resources to a great extent. Forst-dwelling tribes such as the Gonds, Baigas, and Adis use forests for fuel, food and minor produce; fishing communities like the Kolis and Mukkuvars depend on coastal commons. Especially, the marginalized groups are reliant on CPRs for daily needs like fuelwood, fodder and water. Hence, the CPRs are managed traditionally with indigenous knowledge.

Over the years, Common Property Resources (CPRs) have undergone significant changes, with a noticeable trend of depletion and degradation. Population growth, agricultural expansion, unregulated development has led to the deterioration of the CPRs. Hence, there needs collaborative efforts both from authority and community to go hand-in-hand in the protection of the CPRs.

Indigenous governance refers to the systems and practices through which Indigenous communities manage their affairs, often rooted in traditional knowledge, customs, and relationships with their lands and resources. Common property resources (CPRs) are natural or man-made resources where multiple individuals hold rights, making their management complex. The intersection of Indigenous governance and CPRs is crucial for sustainable resource management and the preservation of cultural identities.

Indigenous communities have developed governance systems over centuries, tailored to their specific ecological and social contexts. These systems typically involve communal decision-making processes and a profound understanding of local ecosystems, leading to sustainable resource use. For example, in the Menz region of Ethiopia, the Guassa area demonstrates a resilient common property resource management system. The local community, under the indigenous Qero system, collectively managed the Guassa grasslands, ensuring sustainable use and conservation of the ecosystem. Despite political changes and external pressures, the community adapted their governance structures to maintain control over these resources, highlighting the resilience of Indigenous governance systems.

The indigenous governance systems are often based on customary laws that dictate access, usage, and conservation practices. For instance, the Van Panchayats in the Uttarakhand region of India represent a long-standing experiment in collective forest

management. Established in the 1920s, these village bodies manage forest resources based on customary laws, balancing the needs of the community with conservation goals. The success of Van Panchayats is attributed to factors such as effective leadership, equitable distribution of benefits, and adaptive rule-making mechanisms. However, in recent times with some amendments, Van Panchayat's authority has been declined to a large extent.

One prominent example of indigenous governance of CPR is the Amazonian Indigenous Reserves in Brazil, where native communities like the Yanomami and Kayapo manage large tracts of rainforest through customary rules. These communities enforce strict access regulations to prevent illegal logging and mining, ensuring long-term conservation. The legal recognition of indigenous land rights in Brazil has strengthened these governance mechanisms, allowing native groups to safeguard biodiversity and their way of life.

Similarly, in India, the Sacred Groves of Meghalaya, managed by the Khasi and Jaintia tribes, serve as another effective model of forest conservation. These groves are patches of pristine forest that are strictly protected due to religious and cultural beliefs. Community-imposed rules prohibit hunting, logging, and resource extraction, ensuring the preservation of rare species of flora and fauna.

Water resources, including rivers, lakes, and community ponds, are vital CPRs that indigenous and local communities have traditionally managed across the world. A notable example from Africa is the Water User Associations in Kenya, where indigenous Maasai communities regulate access to water sources in semi-arid regions through traditional conflict resolution mechanisms and rotational water use. These customary laws have proven effective in preventing overuse and ensuring equitable water distribution,

particularly in drought-prone areas. In India, the Johad system of Rajasthan represents a similar indigenous water management practice. Johads are small earthen check dams constructed to capture and store rainwater, replenishing groundwater levels and ensuring water availability during dry periods. These structures are built and maintained through collective efforts, and village elders regulate water usage through community consensus.

Pastoral communities across the globe rely on common grazing lands for their livestock-based livelihoods. These commons are traditionally governed through indigenous rules that regulate grazing intensity, seasonal movement of herds, and conflict resolution among users. One significant example is the Masaai pastoral system of East Africa, which operates under a communal land tenure system. The Maasai practice rotational grazing, where different rangelands are used seasonally to prevent overgrazing and land degradation. This system has historically ensured sustainability, although increasing land privatization poses a major threat.

Similarly, the Changpas of Ladakh, a nomadic pastoral community, manage high-altitude grazing lands through customary laws and collective decision-making. The community follows a traditional system called Goba, where an elected leader oversees grazing practices, dispute resolution, and migration patterns. However, developmental pressures and climate change are increasingly threatening these traditional governance systems.

Thus, there is an intricate relationship between the Common Property Resources (CPRs) and the livelihood of the indigenous people. Indigenous communities play a crucial role in protecting and conserving the CPRs through their indigenous knowledge. Government should give space to the indigenous communities in the decision-making, management and controlling the CPRs for ensuring the sustainability of these resources.

Self-Asking Questions:

Explain the intricate relationship between indigenous livelihood and CPRs.

……

……

……

……

5.4 Challenges Faced by Indigenous Communities with CPRs

Indigenous communities around the world face significant challenges related to common property resources. Among them, land tenure insecurity is one. Many indigenous territories are governed by customary ownership rather than formal legal recognition. This lack of legal status leaves these lands vulnerable to land grabs, government expropriation, and large-scale development projects. Without secure land rights, indigenous communities struggle to maintain control over their territories, leading to displacement and conflicts over natural resources.

Climate change has also disproportionately impacted indigenous groups, threatening their livelihoods and ecosystems. Many indigenous communities rely on traditional farming, fishing, and hunting practices, which are increasingly disrupted by rising temperatures, unpredictable weather patterns, and environmental degradation. Coastal and low-lying areas are particularly vulnerable to sea level rise, while desertification and extreme weather events threaten indigenous ways of life in arid and mountainous regions.

In many cases, indigenous peoples are excluded from decision-making processes regarding their lands and resources. Governments and corporations frequently implement development projects

without obtaining free, prior, and informed consent from indigenous communities. This exclusion results in a lack of representation in political and economic policies, leaving indigenous voices unheard in matters that directly affect their well-being. Large-scale infrastructure projects, logging, and extractive industries often proceed without adequate consultation, leading to displacement and loss of traditional livelihoods.

The expansion of industrial development has further encroached upon indigenous territories. The growing demand for natural resources has driven mining, agriculture, and energy projects into indigenous lands, often without proper environmental assessments or respect for indigenous rights. These activities degrade ecosystems, reduce biodiversity, and disrupt cultural and spiritual ties to ancestral lands. The destruction of forests and waterways not only threatens indigenous communities but also contributes to global environmental challenges such as deforestation and climate change.

Managing common-property resources (CPRs) presents several challenges, particularly in fostering cooperation among diverse users. One major issue arises when resource users are heterogeneous in terms of wealth, landholding, or social status. When users have different levels of dependence on the resource, their incentives for sustainable management vary. Studies indicate that greater heterogeneity often leads to inefficiencies in CPR governance, as wealthier or more influential users may attempt to exert greater control over resource allocation. In India, irrigation systems provide a clear example, where larger landowners often secure more water access, leading to inequities in distribution and reduced cooperation among farmers.

Self-Asking Questions:

Write an essay on indigenous governance of common property resources. (250 words)

……

……

……

Another challenge emerges when CPR users have access to external markets. The ability to sell resources such as timber, fish, or groundwater externally can encourage over-extraction, as individual users prioritize short-term profits over long-term sustainability. This dynamic is evident in India's groundwater crisis, where farmers with access to private tube wells and market incentives tend to overdraw water, depleting common aquifers.

Personalized punishment and enforcement mechanisms also play a critical role in sustaining CPR cooperation. Social sanctions, reputation-based penalties, and local governance structures can deter individuals from overusing shared resources. In India, successful examples of community-led resource management include joint forest management (JFM) programs in states like Madhya Pradesh, where local communities and government agencies collaborate to protect and regenerate forests. However, enforcement remains a challenge in areas where local institutions are weak or where external political and economic pressures undermine collective action.

Overall, the governance of CPRs is shaped by a complex interplay of user heterogeneity, market access, and enforcement mechanisms. While traditional systems have developed effective community-based rules, modern economic pressures and social inequalities continue to pose significant challenges to sustainable resource

management. Addressing these issues requires policies that promote equitable resource-sharing, strengthen local governance institutions, and balance economic development with ecological sustainability.

5.5 Sustainable Practices and Solutions

From the above discussions, we can understand that there arise many challenges in Common Property Resource use, control and management. To reduce the complexities around it, it is very important to adopt sustainable practices and to look forward to solutions to the problems that arise around CPRs. The sustainable management of these resources is crucial for maintaining ecological balance and supporting the livelihoods of communities that depend on them.

As we discussed earlier, Elinor Ostrom's research demonstrated that local communities could effectively manage common resources through self-organization and collective action, hence community governance can be helpful. Ostrom identified eight design principles present in sustainable CPR institutions, including clearly defined boundaries, congruence between appropriation and provision rules and local conditions, collective-choice, monitoring, graduated sanctions, conflict-resolution mechanisms, minimal recognition of rights to organize, and nested enterprises. Hence, community participation integrating traditional knowledge is a sustainable practice towards CPRs. For instance, in Rajasthan in India, community designed rules and decentralized decision-making at the hamlet level led to improved resource management and cooperation. Another example of integrating traditional practices can be seen in Taiwan, where the Tayal community incorporating traditional "Gaga" (ancestral advice) into their resource management strategies.

This integration extends to specific practices, such as preserving tress to prevent soil erosion and using grass as natural pesticides.

Including the community in decision-making processes is very important step towards sustainability of the CPRs as mentioned earlier too. Some voluntary organizations can effectively manage common property resources through collective action and negotiation among participants. Excluding the indigenous community in decision-making processes leads to adverse impacts on the intricate relationship between indigenous communities and the CPRs. Implementing community-based natural resource management devolves authority to the local users. Thus, government even if imposes restrictions it should be limited and should be sensitive enough in imposing such restrictions. Government should implement well-thought policies regarding this which do not hinder the indigenous communities to take part in the decision-making regarding common property resources.

In this regard, India has implemented various sustainable initiatives to manage and conserve common property resources (CPRs). Such initiatives stress on community participation, legal recognition of traditional rights, and sustainable resource management practices. Recognizing groundwater as a shared resource vital for agriculture and drinking water, India emphasizes community participation in its management. This approach involves local stakeholders in monitoring and conserving groundwater, aiming to prevent overexploitation and ensure long-term sustainability. Joint Forest Management (JFM) is another significant step regarding this. Initiated in 1988, JFM fosters partnerships between state forest departments and local communities. Communities assist in protecting forests from threats like fires and illegal harvesting, and in return, they receive non-timber forest products and a share of

timber revenue. This collaborative model enhances forest conservation and supports local livelihoods.

Another significant initiative in India towards sustainable use of CPRs is Collaborative River Basin Management. In 2024, the Ministry of Jal Shakti partnered with 12 technical institutions to enhance research and monitoring of six major river basins: Mahanadi, Narmada, Godavari, Krishna, Cauvery, and Periyar. This initiative aims to develop comprehensive management strategies, ensuring the health and sustainability of these vital water resources. Regarding the protection of water resources there are many legal and policy initiatives in India like Water (Prevention and Control of Pollution) Act, 1974, National Water Jal Shakti Abhiyan, Atal Bhujal Yojana, Jal Jeevan Mission etc. All these shows India's commitment towards attaining sustainability of common property resources. After all, it can be said that a collaborative approach whether from the end of the indigenous community or from the end of the government is essential for a better future of the CPRs.

5.6 The Context of North-East India

Northeast India, comprising eight states (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, and Sikkim), is home to diverse ethnic and tribal communities. The region is characterized by hilly terrains, vast forest lands, and a predominantly agrarian economy, making CPRs an essential component of the rural livelihood. In Northeast India, CPRs play a crucial role in sustaining local economies, biodiversity conservation, and cultural heritage. The indigenous communities of the region have long relied on CPRs for their livelihood, including forests, grazing lands, rivers, and water bodies. However, these resources

face increasing threats due to modernization, state intervention, and environmental degradation.

Forests constitute the most significant CPRs in the region. In states like Meghalaya and Nagaland, large portions of forest land are controlled by village councils or clan-based organizations. These forests provide timber, medicinal plants, and non-timber forest products (NTFPs) that sustain local economies. Sacred groves, particularly in Meghalaya, hold religious and ecological importance, with prohibitions on deforestation ensuring their protection. Common grazing lands are another vital CPR, supporting livestock-dependent communities. Tribes such as the Bodos of Assam and the Khasis of Meghalaya rely on communal pastures for their cattle and other animals. The degradation of these lands due to overgrazing and encroachments has raised concerns about their long-term sustainability. Water bodies, including rivers, lakes, and community ponds, also fall under CPRs. Many indigenous communities, such as the Apatani tribe of Arunachal Pradesh, have developed sophisticated water management systems, integrating paddy cultivation with fish farming. Such systems reflect the deep understanding of ecological balance among these tribes.

Traditional governance systems play a crucial role in the management of CPRs in the North-East India. Most tribal societies in Northeast India follow customary laws that dictate access, usage, and conservation of shared resources. Village councils or chieftains oversee the allocation of land and regulate forest use, ensuring equitable distribution among members. For instance, the Konyak tribe of Nagaland has a well-defined system where the village council monitors logging activities and prevents excessive deforestation. Similarly, in Arunachal Pradesh, communities have set aside protected areas where hunting and tree felling are strictly regulated. These traditional management practices have historically

maintained the sustainability of CPRs while providing economic benefits to local populations.

Jhum or shifting cultivation, practiced by many tribal communities, also represents an indigenous approach to managing land as a CPR. Although it involves periodic forest clearing, traditional Jhum cultivation follows a rotational system where plots are left fallow for years to allow soil regeneration. However, increased population pressure has reduced fallow periods, leading to soil degradation and deforestation.

CPRs contribute significantly to the economic, social, and cultural life of indigenous communities in Northeast India. They provide essential resources such as firewood, building materials, medicinal plants, and grazing land, reducing dependency on external markets. Many families supplement their income by collecting and selling forest products like bamboo, honey, and resin. Beyond economic benefits, CPRs hold profound ecological significance. They serve as natural carbon sinks, regulate water cycles, and preserve biodiversity. Community-managed forests, such as those in Nagaland and Arunachal Pradesh, have helped conserve endangered species. Culturally, CPRs strengthen community bonds and reinforce traditional knowledge systems. Sacred groves, for example, are not just ecological reserves but also spiritual spaces where rituals and community gatherings take place. The social cohesion fostered by communal resource management plays a vital role in maintaining indigenous identity and heritage.

Despite their importance, CPRs in Northeast India are under threat from various factors, including encroachments, state intervention, over-extraction, and environmental changes. The expansion of state-controlled forests has restricted traditional access to CPRs, causing conflicts between indigenous communities and government authorities. Commercial exploitation of natural resources has also

contributed to the depletion of CPRs. Increased logging, mining, and agricultural expansion have led to deforestation and loss of biodiversity. While traditional governance systems once prevented overuse, modern economic pressures often override these practices.

Jhum cultivation, which was once a sustainable practice, has become a concern due to reduced fallow periods and increasing land fragmentation. With shorter regeneration cycles, soil fertility declines, leading to lower agricultural productivity and forest loss. This has prompted many communities to seek alternative livelihoods, further reducing the importance of CPRs in rural economies. Large-scale infrastructure projects, such as hydroelectric dams and highways, pose another significant challenge. In Assam alone, over one million acres of community land have been lost to development projects. Such projects not only displace communities but also disrupt traditional management practices, making it harder to sustain CPRs.

Climate change adds another layer of complexity. Rising temperatures, erratic rainfall patterns, and deforestation have affected water availability and forest regeneration. Communities that depend on CPRs for drinking water and irrigation face increasing difficulties as natural sources dry up or become polluted. Climate change has multi-faceted impacts on the CPRs depleting them in different ways.

Hence, at this critical juncture of time, it is very important to stress on the strategies for sustainable management of CPRs. Ensuring the sustainability of CPRs in North-East India requires a combination of traditional wisdom and modern conservation strategies. Strengthening customary laws and recognizing the rights of indigenous communities over their resources is a crucial step. The implementation of the Forest Rights Act (FRA) 2006 has been slow in Northeast India, and efforts must be made to accelerate the

recognition of community forest rights. Participatory resource management is another essential approach. Establishing Community Forest Reserves, as seen in Nagaland's Khonoma Green Village, can help promote sustainable practices while preserving biodiversity.

Alternative livelihood programs can reduce the pressure on CPRs. Promoting agroforestry, eco-tourism, and sustainable harvesting of non-timber forest products can provide economic incentives for conservation. Training programs on sustainable farming techniques and resource management can also empower communities to use CPRs more efficiently. Adaptation strategies to combat climate change should be integrated into CPR management. Watershed conservation, afforestation programs, and improved irrigation techniques can mitigate the effects of environmental degradation. Recognizing and supporting indigenous climate adaptation methods, such as traditional water conservation practices, can further enhance sustainability. Legal and policy reforms must also be prioritized. The ambiguity surrounding land tenure rights often leads to conflicts and mismanagement. Clearly defining the boundaries of CPRs and ensuring legal protection against encroachment can help preserve these resources. Stronger enforcement of environmental laws, coupled with community participation, can prevent illegal deforestation and land grabbing.

Thus, the indigenous communities of Northeast India have long maintained a deep connection with CPRs, which are integral to their livelihoods, culture, and ecological well-being. However, these resources are increasingly under threat due to state intervention, commercial exploitation, population pressure, and climate change. Addressing these challenges requires a community-centered approach that combines traditional governance with modern conservation efforts. By strengthening local management systems, promoting sustainable economic alternatives, and implementing

legal protections, CPRs can be preserved for future generations. The success of initiatives like the Khonoma Green Village and the protection of the Bugun Liocichla bird in Arunachal Pradesh demonstrate that community-led conservation is not only possible but also highly effective.

Ultimately, the future of CPRs in Northeast India depends on empowering indigenous communities to manage their resources sustainably. A collaborative approach, involving local communities, policymakers, and conservation organizations, can ensure that these vital resources continue to support both people and the environment, maintaining a balance between development and sustainability.

Check Your Progress:

1. Write an essay on the sustainable practices of CPRs.
2. Discuss the CPRs in the context of North-East India.
3. What are the challenges that arise in managing CPRs? Explain.

Self-Asking Questions:

Write an essay discussing the issues and challenges facing by the indigenous communities regarding CPRs and recommend some steps to solve these issues.

……

……

……

5.7 Summing Up

After reading this unit you have learnt that indigenous communities have historically played a crucial role in governing Common

Property Resources (CPRs) through traditional systems that emphasize collective ownership, sustainability, and conservation. Their customary rules and practices ensure the equitable use of resources such as forests, grazing lands, and water bodies while maintaining ecological balance. These governance models are often based on oral traditions, participatory decision-making, and deep environmental knowledge. However, indigenous governance of CPRs faces increasing challenges due to legal ambiguities, resource exploitation, environmental degradation, and weakening of traditional knowledge systems. Government policies often prioritize state control or private ownership, leading to conflicts over land and resource rights. Additionally, commercial pressures, deforestation, and climate change disrupt traditional management systems, threatening both community livelihoods and ecological stability.

Despite these challenges, indigenous governance offers valuable lessons in sustainable resource management. Recognizing and legally protecting customary rights, promoting community-based conservation, and integrating indigenous knowledge with modern environmental policies can strengthen CPR governance. Additionally, ensuring economic alternatives that align with conservation goals can help sustain traditional practices while providing livelihood security.

Moving forward, a balanced approach is needed- one that respects indigenous traditions while addressing contemporary socio-economic and environmental challenges. By empowering indigenous communities as key stakeholders in CPR management, we can work toward sustainable, equitable, and resilient resource governance that benefits both people and the environment.

5.8References and Suggested Readings

- Antoniadou, E., Koulovatianos, C., & Mirman, L. J. (2013). Strategic exploitation of a common-property resource under uncertainty. *Journal of Environmental Economics and Management, 65*(1), 28–39.
- Beck, T. (1994). Common property resource access by the poor and class conflict in West Bengal. *Economic and Political Weekly, 29*(4), 187-189, 191-197
- Berkes, F. (1987). The common property resource problem and the fisheries of Barbados and Jamaica. *Environmental Management, 11*, 225-235
- Bromley, D. W. (Ed.). (1991). *Environment and economy: Property rights and public policy*. Blackwell.
- Bromley, D. W. (Ed.). (1992). *Making the commons work: Theory, practice, and policy*. ICS Press.
- Bruce, J. W. (1999). *Legal basis for the management of forest resources as common property*. Food and Agriculture Organization of the United Nations.
- Chaithanya, E. P. (2012). The ownership over common property resources: State versus community rights. *International Journal of Political Science, Law & International Relations, 2*, 1-17.
- Dessalegn, M. (2016). Threatened common property resource system and factors for resilience: Lessons from Serege commons in Muhur, Ethiopia. *Ecology and Society, 21*(4), Article 22. https://doi.org/10.5751/ES-08757-210422
- Financial Express. (2019). Aarey forest protest: Maharashtra government to withdraw cases against environmental activists. *Financial Express*.
- Gaur, M. K., Goyal, R., Kalappurakkal, S., & Pandey, C. (2018). Common property resources in dry lands of India.

International Journal of Sustainable Development and World Ecology, 25(6), 491-499.

- Ghosh, S. (2018). Two conservation communities from Northeast India win biodiversity awards. *Mongabay India*
- Gurung, O. (2006). *Concepts and methods of common property resources management*.
- Hanley, N., Shogren, J. F., & White, B. (1999). *Environmental economics*. MacMillan India Ltd.
- Hardin, G. (1968). The tragedy of the commons. *Science, 162*(3859), 1243-1248. https://doi.org/10.1126/science.162.3859.1243
- Iwari, B. (2010). Forest management practices of the tribal people of Meghalaya, Northeast India. *Journal of Tropical Forest Science, 22*(3), 329-342.
- Jodha, N. S. (1986). Common property resources and rural poor in dry regions of India. *Economic and Political Weekly, 21*(27), 1169-1181.
- Menon, A., &Vadivelu, G. A. (2006). Common property resources in different agro-climatic landscapes in India. *Conservation & Society, 4*(1), 132-154.
- Murty, M. N. (1994). Management of common property resources: Limits to voluntary collective action. *Environmental and Resource Economics, 4*, 581-594.
- National Sample Survey Organisation (NSSO). (1999). *NSSO report*. Sarvekshana, New Delhi.
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.
- Pandey, A. (2018). Common property resources and sustainable development. *Natural Resources Management and Sustainable Development*. IGNOU.

- Saha, S. B. (2021). Common property resources (CPRs) and sustainability in Northeast India. *ResearchGate*.
- Singh, S. (2004). Common property resource management in transitional villages. *Tenth Biennial Conference of the International Association for the Study of Common Property, Oaxaca, Mexico*, 9-13 August 2004.
- Tarui, N. (2007). Inequality and outside options in common-property resource use. *Journal of Development Economics, 83*(2), 214-239.
- Topal, Y. P. (2015). Sustainable management of common property resources in Uttarakhand: Factors at work. *International Journal of Advanced Research in Management and Social Sciences, 4*(7), 301-316.
- Wade, R. (1987). The management of common property resources: Finding a cooperative solution. *World Bank Research Observer, 2*(2), 219-234.

---×---