

Block

7

CONTEMPORARY ISSUES AND PROBLEMS IN ENVIRONMENTAL ANTHROPOLOGY

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BLOCK 7 CONTEMPORARY ISSUES AND PROBLEMS IN ENVIRONMENTAL ANTHROPOLOGY

Introduction

The three units in this block are focused on immediate and global environmental issues. Climate change is one phenomenon that has opened the eyes of most thinking persons to the dangers of the over exploitation of natural resources and also of treating nature as an object of domination. The depletion of the ozone layer and the manner in which events in one part of the globe affect others has shown without doubt that humans live in one world and breathe one air and drink from the same sources of water. The atmosphere and the oceans cannot be divided although imaginary lines are drawn across them in terms of geo-political boundaries. But from the point of view of environment, such boundaries are artificial and nothing can stop environmental problems from travelling across the world.

Along with this comes the contestation and conflict over sharing of resources between nations and even within nations between different interest groups. When people contest that mining should be allowed in tiger reserves they are only looking at immediate gains and forgetting the long term environmental implications. The fact that the world has been subjected to one environmental disaster after another should make us realize that immediate consumerist gains should be reconsidered in terms of the impact upon the environment that may be permanent. Thus the world should rationally move from thinking about immediate and personal gains towards thinking about a common and sustainable future.

Another important factor regulating global environmental issues is the question of differential power hierarchies between nations, between communities and between different stake holders. For a long time the entities with more power had tried to shift the burden of environmental pollution and damage onto the weaker and more vulnerable sections of society and of the world in general. Beginning with the colonial period when resources of the colonies were plundered and the natives marginalized on their own lands, the power games have been going on. Even today many first world countries dump their nuclear waste and hazardous industries on to the poorer nations. Even nuclear experimental blasts have been carried on in areas with more vulnerable populations.

The tribes and indigenous people, outside of the mainstream of the nations have suffered as their lands have been taken over by the centralized state. Yet the question of environmental justice has remained as abstract concept with rare examples of successful dispensing of justice. The Bhopal gas tragedy is a case in point but even other large scale man made environmental disasters like Chernobyl and even Fukushima nuclear leak, has seen more cover up than actual relief to the sufferers.

If the world hopes to have a sustainable future, equity of resource distribution and disciplined consumption is a must. In the Units that you are going to read we shall take up some of these issues in details and help you to grasp the urgency of taking a rational and practical view of the human environment relationships.

UNIT 1 ENVIRONMENT AND GLOBAL ISSUES

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Learning Objectives



At the end of this unit, you will be able to:

- understand the global environmental issues like ecological sustainability, global warming and biodiversity;
- understand the degradation of water and land resources and pollution due to anthropogenic activities;
- understand the global picture of environmental discourse; and.
- understand the ecology of global consumer culture.

1.1 INTRODUCTION

The term environment refers to the sum total of physical, biological and cultural elements which are interlinked individually as well as collectively in myriad ways and which surrounds man at a given point in space and time. Physical elements (space, landforms, water bodies, climate, soils, rocks and minerals) determine the variable character of the human habitat, its opportunities as well as limitations. Biological elements (plants, animals, micro-organisms and man) constitute the biosphere. Cultural elements (economic, social and political) are essentially human made features, which go into the making of cultural milieu. All these elements are so intimately related with each other that changes in one affect the others. This unit is going to discuss various global environmental issues in the backdrop of the environmental problems occurring in the world today.

1.2 GLOBAL ENVIRONMENTAL ISSUES

As early as 1896, the Swedish scientist Svante Arrhenius had predicted that human activities would interfere with the way the sun interacts with the earth, resulting in global warming and climate change. His prediction has come true and climate change is now disrupting global environmental stability. The last few decades have seen many treaties, conventions, and protocols for the cause of global environmental protection. Some of the major environmental issues in global context are sustainability of world's ecology; ozone layer depletion and global warming and loss of biodiversity.

1.2.1 Ecological Sustainability

“Sustainability,” says Michael Crow, president of Arizona State University, “is at the intersection of environmental, economic, and societal stewardship.” Sustainability focuses on balancing these three areas. Ecological sustainability is defined as a capacity of ecosystems to maintain their essential functions and processes, and retain their biodiversity in full measure over the long-term. Ecologically sustainable development is the environmental component of sustainable development. Also important is the principle of intergenerational equity, namely that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations

Ecological sustainability, in simple terms means that whatsoever activity taking place on planet earth, has to continue forever. This can be achieved only if the activity does not ‘use up’ or worse still destroy any of the resources or the life forms which exist as a result of it and also does not ultimately destroy the very basis of such activity.

1.2.2 Global Warming

Global warming and climate change refer to an increase in average global temperatures. Natural events and human activities are believed to be contributing to an increase in average global temperatures. Over the last 100 years, it was found out that the earth is getting warmer and warmer, unlike previous 8000 years when temperatures have been relatively constant. The present temperature is 0.3 - 0.6 °C warmer than it was 100 years ago. This is caused primarily by increases in “greenhouse” gases (GHG) such as Carbon Dioxide (CO₂). Before the Industrial Revolution, human activities released very few gases into the atmosphere and all climate changes happened naturally. After the Industrial Revolution, through fossil fuel combustion, changing agricultural practices and deforestation, the natural composition of gases in the atmosphere is started getting affected and climate and environment began to alter significantly.

Some greenhouse gases occur naturally in the atmosphere, while others result from human activities. Naturally occurring greenhouse gases include water vapour, carbon dioxide, methane, nitrous oxide, and ozone. Certain human activities, however, add to the levels of most of these naturally occurring gases. Carbon dioxide, one of the most prevalent greenhouse gases in the atmosphere, has two major anthropogenic (human-caused) sources: the combustion of fossil fuels (oil, natural gas and coal), wood and wood products and changes in land

use. Net releases of carbon dioxide from these two sources are believed to be contributing to the rapid rise in atmospheric concentrations since Industrial Revolution. Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from the decomposition of organic wastes in municipal solid waste landfills, and the raising of livestock. Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of solid waste and fossil fuels. Very powerful greenhouse gases that are not naturally occurring include Chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆), which are generated in a variety of industrial processes.

India's Greenhouse Gas Emissions

India has experienced a dramatic growth in fossil fuel CO₂ emissions, and the data compiled by various agencies shows an increase of nearly 5.9 % since 1950. At present India is rated as the 6th largest contributor of CO₂ emissions behind China, the 2nd largest contributor. However, our per capita CO₂ of 0.93 tons per annum is well below the world average of 3.87 tons per annum. Fossil fuel emissions in India continue to result largely from coal burning. India is highly vulnerable to climate change as its economy is heavily reliant on climate sensitive sectors like agriculture and forestry. The vast low-lying and densely populated coastline is susceptible to rise in sea level. The energy sector is the largest contributor of carbon dioxide emissions in India. The national inventory of greenhouse gases indicates that 55% of the total national emissions come from energy sector. These include emissions from road transport, burning of traditional bio-mass fuels, coal mining, and fugitive emissions from oil and natural gas. Agriculture sector constitutes the next major contributor, accounting for nearly 34%. The emissions under this sector include those from enteric fermentation in domestic animals, manure management, rice cultivation, and burning of agriculture residues. Emissions from Industrial sector mainly came from cement production.

The United Nations Framework Convention on Climate Change (UNFCCC)

In June 1992, the “United Nations Framework Convention on Climate Change” (UNFCCC) was signed in Rio de Janeiro by over 150 nations. The convention’s overall objective is the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The deciding body of the climate convention is the Conference of Parties (COP). At the COP meetings, obligations made by the parties are examined and the objectives and implementation of the climate convention are further defined and developed.

1.3 DEGRADATION OF WATER AND LAND RESOURCES

The world’s land and water resources provide goods such as food crops, fish, livestock and timber and non-timber products. They also provide ecological services such as purification of air and water, maintenance of biological diversity, and decomposition and recycling of nutrients (WRI, 2000). Despite the importance of these resources, land and water ecosystems are being degraded at an alarming rate. Fresh water is a renewable resource, yet the world’s supply of clean, fresh water is under increasing demand for human activities. The world has an estimated 1.34 billion cubic kilometers of water, but 96.5 percent of it is

salty. Nearly 70% of that fresh water is frozen in the icecaps of Antarctica and Greenland. Most of the remainder is present as soil moisture or lies in deep underground aquifers as groundwater not accessible to human use. Less than 1% of the world's fresh water or 0.007% of all water on earth is accessible for direct human use. This is the water found in lakes, rivers, reservoirs and those underground sources that are shallow enough to be tapped at an affordable cost. Only this minuscule amount is regularly renewed by rain and snowfall, and is therefore available on a sustainable basis. The amount of available freshwater supply in some regions is decreasing because of (i) climate change, which has caused receding glaciers, reduced stream and river flow, and shrinking lakes; (ii) contamination of water by human and industrial wastes; and (iii) overuse of non-renewable groundwater aquifers. Many aquifers have been over-pumped and are not recharging quickly. According to one saying it is said that where water ends there life ends. In this context, the term 'Peak Water' has been put forward as a concept to help understand growing constraints on the availability, quality, and use of freshwater resources.

There is concern that the state of peak water is being approached in many areas around the world. Some areas are suffering from peak renewable water, where entire renewable flows are being consumed for human use, peak non-renewable water, where groundwater aquifers are being over pumped (or contaminated) faster than nature recharges them and peak ecological water, where ecological and environmental constraints are overwhelming the economic benefits provided by water use. If present trends continue, 1.8 billion people will be living with absolute water scarcity by 2025, and two thirds of the world population could be subject to water stress. Ultimately, peak water is not about running out of fresh water, but about reaching physical, economic, and environmental limits on meeting human demands for water and the subsequent decline of water availability and use.

Soil and land degradation can be identified and described in terms of physical, chemical and biological changes from some ideal state brought about by natural or man-made influences. Key processes for land and water degradation includes erosion and sedimentation, nutrient depletion, water pollution, de-vegetation and irregular stream flow. The foothills of the Himalayas, sloping areas in southern China and South-east Asia, the East African Highlands, sub-humid Central American hillsides and semi-arid Andean valleys are some of the degradation hotspots (Scherr and Yadav, 1996). In vast areas, all topsoil has been washed away. In others, the productive potential of the lands has been degraded significantly.

Land Degradation has been taking place extensively for as long as agriculture has been practiced (Ponting, 1991). Yet it is hard to quantify it because of the slow and very heterogeneous nature of the process. Major trends related to land degradation and agricultural productivity globally include: Loss of water for agriculture and reallocation to cities and industries; reduction in land quality in many different ways, leading to reduced food supplies, lower agricultural incomes, increased costs to farmers and consumers, and a deterioration of water catchment functions; reduction in water quality due to pollution, water-borne diseases and disease vectors; loss of farmland through conversion to non-agricultural purposes. The major long term impacts of land degradation are deforestation, desertification and loss of biodiversity.

While the aggregate picture of land and water degradation is quite worrying, there are also many bright spots. The term ‘bright spot’ is used to describe a community (village, district or catchment) that has succeeded in stopping or reversing degradation while improving livelihoods. Examples from upper watersheds include conservation farming in the Philippines (Nilo, 2001) and Thailand, hillside conservation investment in East Africa (Rwanda, Kenya and Burundi), projects in Morocco, West Cameroon, and Fouta Djallon in Guinea. There is widespread adoption of specific technologies that have contributed to bright spot development, including conservation tillage (Mexico, Central America, Brazil, Argentina, Chile, Uruguay and Paraguay), perennial crops use (in the mountains of Himachal Pradesh, India, and on hillsides of southern Mexico and Central America), multi-storey gardens (in densely populated areas with volcanic soils in Indonesia and southern China), and perennial plantations in areas of low population density with fragile soils (Malaysia, India, southern Thailand and the Philippines) (Scherr and Yadav, 1996).

1.3.1 Loss and Conservation of Biodiversity

Biodiversity refers to the variety of life on earth, and its biological diversity. The number of species of plants, animals, micro organisms, the enormous diversity of genes in these species, the different ecosystems on the planet, such as deserts, rainforests and coral reefs are all a part of a biologically diverse earth. Biodiversity actually boosts ecosystem productivity where each species, no matter how small, all have an important role to play and that it is in this combination that enables the ecosystem to possess the ability to prevent and recover from a variety of disasters. It is now believed that human activity is changing biodiversity and causing massive extinctions. Both plant and animal species have been disappearing at 50 to 100 times the natural rate, due to such factors as the large-scale clearing and burning of forests, over-harvesting of plants and animals, indiscriminate use of pesticides, draining and filling of wetlands, destructive fishing practices, air pollution and the conversion of wild lands to agricultural and urban uses. Recent studies suggest that this high rate of extinction will accelerate even faster, taking an increasing number of living plants and animals away from us forever. This species loss and ecosystem disruption is causing a complex range of circumstances with consequences to human health. In addition, the loss of biodiversity obstructs the discovery of new medicines to treat various diseases. The United Nations Convention on Biological Diversity (UNCBD), which was adopted at UNCED in 1992 and has since been ratified by more than 175 countries, establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources.

Conservation has been defined as “maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties”. Conservationists believe that conservation can be achieved in a number of ways, but in particular, by following practices of sustainable use and by creating protected areas. Sustainable use has been defined as “the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations”.

Conservation of biodiversity includes formulation of National Park and Wild life Sanctuaries which is an area of ecological, faunal, floral, geo-morphological, or zoological importance; development of Conservation Reserve and Community Reserve for protecting landscapes, seascapes, flora and fauna and their habitat and also for protecting traditional or cultural conservation values and practices, where the community or an individual has volunteered to conserve wildlife and its habitat; development of Tiger Reserve in order to protect this fast diminishing species. Apart from this World heritage sites are areas of universal natural and cultural value, declared under an international Convention for the Protection of the World Cultural and Natural Heritage. Important bird areas are identified to give special attention to areas that are significant for bird conservation. Wetlands of significant biodiversity value can be declared Ramsar sites. These sites are declared under an inter-governmental treaty on wetlands called the Ramsar Convention which was signed by countries at Ramsar, in Iran, in 1971. Nineteen wetlands have been declared Ramsar sites in India, covering an area of almost 648,507 hectares. Medicinal plant conservation areas (MPCAs) program is a national effort initiated in 1993 by the Foundation for Revitalization of Local Health Traditions (FRLHT), Bangalore. Under this program, MPCAs are identified with the main objective of conserving medicinal plants in their natural habitat and preserving their gene pool.

Indigenous and local communities play a significant role in conserving very substantial areas of high biodiversity and cultural value. In addition to officially-designated protected areas, there are many thousand Community Conserved Areas (CCAs) across the world, including sacred forests, wetlands, and landscapes, village lakes, catchment forests, river and coastal stretches and marine areas. These are natural and/ or modified ecosystems of significant value in terms of their biodiversity, cultural significance and ecological services. They are voluntarily conserved by indigenous and local communities, through customary laws or other effective means, and are not usually included in official protected area statistics. Globally, 4 to 8 million square km (the larger estimate is an area bigger than Australia) are owned or administered by communities. In 18 developing countries with the largest forest cover, over 22% of forests are owned or preserved for communities. In some of these countries (for example Mexico and Papua New Guinea) the community forests cover 80% of the total. In fact, some studies show that levels of protection are actually higher under community or indigenous management than under government alone.

1.3.2 Intensive Farming

Intensive farming or intensive agriculture is an agricultural production system characterized by the high inputs of capital, labor, or heavy usage of technologies such as pesticides and chemical fertilizers relative to land area. It is associated with the increasing use of agricultural mechanization, which has enabled a substantial increase in production, yet has also dramatically increased environmental pollution by increasing erosion and poisoning water with agricultural chemicals. This is in contrast to many sorts of sustainable agriculture such as organic farming or extensive agriculture, which involve higher inputs of labor, and energy relative to the area of land farmed, but focus on maintaining the long-term ecological health of the farmland, also the product which is being produced is generally produced with fewer synthetic chemicals.

The use of intensive farming techniques is creating not only localized ecological disasters but in many places having impacts across wide sections of the countryside. Intensive farming designs limit the range of habitats; inputs to the system particularly those used for soil fertility and pest control determine the impact on species within the habitats. Intensive farming substitutes rather than enhances the natural biological production processes. Autumn and winter-sown cereals decrease the availability of food for wild birds at the start of the crucial breeding season and thus limiting the range of wild birds, hares and other small mammals. The large farm size further limits the size of animal populations because field boundaries are smaller, fewer and farther apart. Habitats within boundaries, especially hedgerows, are important to many wild flowers, insects, birds and mammals. Weed control is more efficient further limiting the range of species of plants and animals. Continuous cropping of autumn and winter-sown cereals promotes erosion because the soil is exposed during the wetter part of the year. Plants that are chemically fertilized may look lush, but lush growth produces watery tissues, which become more susceptible to disease; and the nutritive quality, suffer.

Agricultural production has witnessed dramatic rise in the last 3 decades or so in the countries world over. In India, Green Revolution brought about technological breakthrough, which led to the use of short duration high yielding varieties helping intensive use of land in a year, increasing area brought under irrigation and prolific use of chemicals such as fertilizers and pesticides. India, being vastly agriculture oriented, historically has had policies in various phases for the development of agriculture with the expectation that development of agriculture would lead to overall development of the nation and help eradication of poverty. It has been of late recognized that the increasing efforts to raise agricultural growth has cost us dearly in the form of land and water degradation. Large scale ecological losses were reported in crop land, grass land and forest land, such as soil erosion, soil alkalinity and salinity, micronutrient deficiency, water logging and fast depletion and contamination of ground water. These factors limit future gains from the land and water resources. Irrigation is considered as the principle means of water loss from the natural system and it leads to arid condition downstream and ground water depletion. Apart from on site costs reflected in the loss of productivity of soil, the offsite costs due to agriculture is reported to be quite significant. The offsite costs are caused by soil sediments transported in the surface water from eroded agricultural land. These include river and dam siltation, damage to roadways and sewers, siltation of harbors and channels, loss of reservoir storage, disruption of stream ecology and damage to public health. Intensive farming practices, particularly with wheat and rice in India, have virtually mined nutrients from the soil. Due to heavy use of fertilizers, excess nitrates have leached into groundwater and contamination of groundwater with nitrates has increased dramatically. According to the National Remote Sensing Agency and Forest Survey of India, 60% of the total area under cultivation is substantially degraded. Most of this damage is in the form of loss of topsoil.

1.3.3 Anthropogenic Landscapes

Anthropogenic landscapes are areas of Earth's terrestrial surface where direct human alteration of ecological patterns and processes is significant, ongoing, and directed toward servicing the needs of human populations for food, shelter and other resources and services including recreation and aesthetic needs. Nearly

all humans live in anthropogenic landscapes, especially in urban, suburban and densely populated rural village landscapes. Anthropogenic landscape transformation (land-use change) is one of the primary drivers of global changes in climate, biodiversity and biogeochemistry. Ecological processes in anthropogenic landscapes differ profoundly from those of pristine and indirectly impacted ecosystems. These processes include species introduction and domestication, population management and harvest, the tillage transport and cover of soils by impervious structures, fossil fuel combustion, irrigation and the fertilization of ecosystems with nitrogen, phosphorus and other limiting nutrients. Anthropogenic landscapes are highly fragmented fine-scale mosaics of managed and unmanaged landscape features with clearly defined boundaries such as buildings, roads, yards and agricultural plots. To measure and mediate long-term ecological changes in anthropogenic landscapes, land transformation and management must be measured at the fine spatial scales at which this generally occurs.

1.3.4 Dams Construction

Dams can be used to supply drinking water, generate hydroelectric power, increasing the water supply for irrigation, provides recreational opportunities and to improve certain aspects of the environment. However, adverse environmental and sociological impacts have also been identified during and after many reservoir constructions. Whether reservoir projects are ultimately beneficial or detrimental—to both the environment and surrounding human populations—have been debated since the 1960s and probably long before that. The damming of a river creates a reservoir upstream from the dam. The reservoir waters spill out into the surrounding environments, flooding the natural habitats that existed before the dam's construction. To date, over 400,000 km² of the earth have been flooded due to damming. The construction of large dams completely change the relationship of water and land, destroying the existing ecosystem balance which, in many cases, has taken thousands of years to create. Currently there are around 40,000 large dams which obstruct the world's rivers, completely changing their circulation systems. Throughout the past few years, the negative impacts of dams have become so well known that most countries have stopped building them altogether and are now forced to invest their money into fixing the problems created by existing dams.

One of the first problems with dams is the erosion of land. Dams hold back the sediment load normally found in a river flow, depriving the downstream of this. In order to make up for the sediments, the downstream water erodes its channels and banks. This lowering of the riverbed threatens vegetation and river wildlife. A major example of soil erosion problem is the Aswan Dam built on the river Nile in Egypt. Dams and the creation of reservoirs also require relocation of potentially large human populations if they are constructed close to residential areas. The record for the largest population relocation belongs to the Three Gorges dam built in China. Its reservoir submerged a large area of land, forcing over a million people to relocate. "Dam related relocation affects society in three ways: an economic disaster, human trauma, and social catastrophe", states Dr. Michael Cernea of the World Bank and Dr. Thayer Scudder, a professor at the California Institute of Technology. As fish and marine animals are an important source of food supply, more attention is being paid to the harmful effects of dams on many fish and marine mammal populations. The vast majority of large dams do not

include proper bypass systems for these animals, interfering with their lifecycles and sometimes even forcing species to extinction. Dam reservoirs in tropical areas, due to their slow-movement, are literally breeding grounds for mosquitoes, snails, and flies, the vectors that carry malaria, schistosomiasis, and river blindness. NASA geophysicist Dr. Benjamin Fong Chao found evidence that large dams cause changes to the earth's rotation, because of the shift of water weight from oceans to reservoirs. Because of the number of dams which have been built, the Earth's daily rotation has apparently sped up by eight-millionths of a second since the 1950s. Chao said it is the first time human activity has been shown to have a measurable effect on the Earth's motion.

1.3.5 Pollution

Pollution is the introduction of contaminants into a natural environment that causes instability, disorder, harm or discomfort to the ecosystem i.e. physical systems or living organisms. Pollution can take the form of chemical substances or energy, such as noise, heat or light. Pollutants, the components of pollution, can be either foreign substances/energies or naturally occurring contaminants. The major forms of pollution are air, water, noise, light, radioactive, thermal and solid waste pollutions. World Health Organization states that 2.4 million people die each year from causes directly attributable to air pollution, with 1.5 million of these deaths attributable to indoor air pollution. Worldwide more deaths per year are linked to air pollution than to automobile accidents. Direct causes of air pollution related deaths include aggravated asthma, bronchitis, emphysema, lung and heart diseases, and respiratory allergies. Cities around the world with high exposure to air pollutants has the possibility of children living within them to develop asthma, pneumonia and other lower respiratory infections as well as a low initial birth rate. Estimates suggest that nearly 1.5 billion people lack safe drinking water and that at least 5 million deaths per year can be attributed to waterborne diseases. With over 70 percent of the planet covered by oceans, people have long acted as if these very bodies of water could serve as a limitless dumping ground for wastes. Raw sewage, garbage, and oil spills have begun to overwhelm the diluting capabilities of the oceans, and most coastal waters are now polluted. Beaches around the world are closed regularly, often because of high amounts of bacteria from sewage disposal, and marine wildlife is beginning to suffer. Perhaps the biggest reason for developing a worldwide effort to monitor and restrict global pollution is the fact that most forms of pollution do not respect national boundaries. At the time of UNEP's creation in 1972, only 11 countries had environmental agencies. Ten years later that number had grown to 106, of which 70 were in developing countries. It has become increasingly clear that the sources and causes of pollution are far more diffused, complex and interrelated; and the effect of pollution more wide spread, cumulative and chronic- than hitherto believed. Pollution problems that were once local are now regional or even global in scale.

1.4 DISCOURSE ON SCIENCE AND GLOBAL ENVIRONMENT

Environmental discourse has given us the awareness of the global, all encompassing nature of some of the processes of environmental change. The "climate catastrophes", the diminishing ozone layer or the reduced forest cover

of the earth's surface are seen as problems facing "mankind" thus strongly invoking the idea that, when it comes to the ecological crisis, "we are all in a same boat".

The concept of globalization has two connotations. It primarily refers to political-economic changes and is employed to give a label to the increasing power international financial networks and the growing interdependency in the political-economic sphere. The second meaning of the concept of globalization is that not only suggest do the interdependencies occur on a larger scale than before, it also suggests that the world has become smaller. This is the idea of a "shrinking" of the globe both in a physical and a cultural sense. It refers to the diminishing importance of distance, the "annihilation of space by time", and the proliferation of Western life styles that came with it. It is the cultural icons and narratives of Coca Cola, Disney and McDonalds that represent the most prominent forces of this new globalized cultural discourse. The term Mcdonaldization, however formed by George Ritzer states the process by which the principles of the fast food restaurant are coming to dominate more and more sectors of American society as well as the rest of the world. The emphasis on a growing interdependency and the strong forces of a cultural colonization (also known as "coca-colonization") suggest that we are becoming aware that, when it comes to globalization, we are in the same boat too.

In the present era of science and technology, many of the scientific activities (industrialization, mining, modern agriculture technology, intensive farming etc), through over exploitation of natural resources are creating a wide variety of environmental problems and concerns at global level. But at the same time through advance scientific researches and developments we, the humans are able to assess the environmental impacts of these activities on our own self as well as on the other living beings of the planet earth.

There are many numbers of scientific studies conducted which demonstrates the environmental discourse on global level. To start with in 'green discourse' one of the early markers of the impact of development products on nature was Rachel Carson's *Silent Spring* (1962) in which she warned us of the unintended impacts of the over use of pesticides. Next is the Barry Commoner's *The Closing Circle* (1971) which argued that technology could not solve ecological problems. In 1972 Barbara Ward and Rene Dubos wrote '*Only One Earth: The Care and Maintenance of Small Planet*' which explored the anthropogenic impacts on global environment and nature. It served the background material for the Stockholm Conference on Human Environment. In 1982, Erik Eckholm came out with '*Down to Earth*' a review of the global efforts taken to protect the world's environment. Scientists have had a key role in defining what counts as an environmental problem. Yet it was not as if science just functioned to put issues on the agenda. Science was important as provider of the particular discourse that facilitated global consensus. Science is here seen as a practice that allows producing universally valid truth, thus opening the possibility to negotiate agreements on the remedial strategies required. Yet since science is explicitly silent on cultural matters, it cannot make differences between what some authors have called "survival emissions" and "luxury emissions". In other cases the very methods with which data were generated implied a cultural bias.

The emphasis on the global dimension of the ecological crisis stems from the early 1970s. This was the era of “saving the planet” and brought about the globalization of the terms of environmental discourse, at least in the circles of policy makers. Starting with the Stockholm Conference on Human Environment in 1972, the environmental discourse attracts the attention throughout the world but got a global face and importance after twenty years with the Earth Summit of 1992 held at Rio. Thereafter, both the developing and developed countries have framed and signed many number of environmental conventions, treaties and protocols for the conservation and protection of our mother nature from the harmful anthropogenic activities causing environmental pollution and degradation of global scale. Another way of sensitizing the issues of environmental discourse and making it global is the role visual and print media is playing in highlighting it. The heads of various States have also joined hands together to initiate the environmental crisis which has now taken a global face.

Emergence of green politics in 1970s which is a political ideology that aims for the creation of an ecologically sustainable society rooted in environmentalism, social liberalism, and grass root democracy and light outs campaign are some of the major positive consequences of globalization of environmental discourse. 90,000 migratory birds die every year from colliding with skyscrapers in New York alone. The Light Outs Campaign, started in Chicago encourages tall building to dim their lights during peak migratory seasons every fall. While it seems like the light on sky scrapers might ward off birds, it actually attracts them. The Empire State Building, the Chrysler building and the Rock feller Centre (among other New York skyscrapers) will all be dimming their lights this fall. The campaign will not only save birds; it will save energy as well. If a 2.5 million square foot building shut off all of its light after midnight this fall, it would conserve, 750,000 kilo watts and save \$120,000.

1.5 THE ECOLOGY OF GLOBAL CONSUMER CULTURE

Our consumption of goods obviously is a function of our culture. Only by producing and selling things and services does capitalism in its present form work, and the more that is produced and the more that is purchased the more we have progress and prosperity. The single most important measure of economic growth is, after all, the gross national product (GNP), the sum total of goods and services produced by a given society in a given year. It is a measure of the success of a consumer society, obviously, to consume. However, the production, processing, and consumption, of commodities requires the extraction and use of natural resources (wood, ore, fossil fuels, and water); it requires the creation of factories and factory complexes whose operation creates toxic byproducts, while the use of commodities themselves (e.g. automobiles) creates pollutants and waste. Yet of the three factors environmentalists often point to as responsible for environmental pollution — population, technology, and consumption — consumption seems to get the least attention. One reason, no doubt, is that it may be the most difficult to change; our consumption patterns are so much a part of our lives that to change them would require a massive cultural overhaul, not to mention severe economic dislocation. A drop in demand for products, as economists note, brings on economic recession or even depression, along with massive unemployment.

Is the whole world drinking Coke? Is it a new freedom or a new form of tyranny? Is the world becoming one big McDonalds, dominated by global brands, multinationals, and Hollywood media? Or is there a resurgence of nationalism and fundamentalism that is creating new kinds of local cultures founded in existing traditions? And is consumerism going to eventually destroy the planet's ecology? 'Five days work and two days spend' is something called as hyper consumerism prevalent in America. The world is in the grip of unprecedented social and cultural changes, as world trade in consumer goods begins a new phase of expansion. Global communications media and cheap air travel have reduced the costs of cross-cultural connections of all kinds, boosting television, tourism and emigration to new levels. At the same time, following the collapse of the Eastern Bloc, capitalism has become more pervasive, less nationally-limited and more powerful all over the world. Global financial integration proceeds at a furious pace, while commodity flow increase and countries become increasingly dependent on each other for food and basic commodities.

Something important is happening, and we are only beginning to understand what the effects will be on our lives and on the knots of shared identity and practice that anthropologists have always called "cultures." One important dimension of this global change is the dramatic increase in the consumption of goods manufactured, designed and/or marketed by firms based in Europe, North America and Japan. The dramatic global increase in the consumption of "northern" goods has been perceived, in many places, as the greatest threat to the continued existence of local traditions, local cultures and local economic autonomy. As per an estimate Indians are fifth in purchasing power or consumption of goods. Pollution is also related to increased consumption. That is, the consumption itself, plus the production and waste of products used in consumption. Automobiles are a clear example. Other examples include industrial waste (especially when just dumped into the rivers and oceans), waste from the tourist industry (including cruise liners, air travel, etc.), waste from industrial agriculture, consumer waste such as household waste, excessive product packaging, our "throw-away" culture, and so on.

While pollution is increasing in poorer countries as well, it is not solely due to rising populations, because, as the U.N. points out, and as mentioned earlier, 86% of the world's resources are consumed by the world's wealthiest 20%. Hence, even if pollution is occurring in poor countries, a large portion of it is to meet this consumer demand. In its September 2008 issue, the journal *Energy Policy* found that around 1/3rd of Chinese carbon dioxide emissions were due to the production of exports and that it is mostly the developed world consuming these. Another trend is to also export waste to other regions of the world. As one example, hazardous electronic waste, such as old computers, old computer monitors, etc primarily from wealthier nations, are also being exported to places like China, India and Pakistan, where they are processed in operations that are extremely harmful to human health and the environment. However, minimal or non-existent environmental and working standards and regulations, old technologies for recycling and processing, etc. is putting a lot of people and surrounding environment at risk due to the sheer amount of waste to be processed.

Junk-food chains, including KFC and Pizza Hut, are under attack from major environmental groups in the United States and other developed countries because of their environmental impact. Intensive breeding of livestock and poultry for

such restaurants leads to deforestation, land degradation, and contamination of water sources and other natural resources. For every pound of red meat, poultry, eggs, and milk produced, farm fields lose about five pounds of irreplaceable top soil. The water necessary for meat breeding comes to about 190 gallons per animal per day, or ten times what a normal Indian family is supposed to use in one day, if it gets water at all. Overall, animal farms use nearly 40 percent of the world's total grain production. In the United States, nearly 70 percent of grain production is fed to livestock. Thus the growing consumer culture at global level is disturbing the ecological homeostatic mechanism of our planet which if not stopped will create havoc to it.

1.6 SUMMARY

The term environment refers to the sum total of physical, biological and cultural elements which are interlinked individually as well as collectively in myriad ways and which surrounds man at a given point in space and time. As early as 1896, the Swedish scientist Svante Arrhenius had predicted that human activities would interfere with the way the sun interacts with the earth, resulting in global warming and climate change.

Ecological sustainability is defined as a capacity of ecosystems to maintain their essential functions and processes, and retain their biodiversity in full measure over the long-term. Global warming and climate change refer to an increase in average global temperatures. Natural events and human activities are believed to be contributing to an increase in average global temperatures.

Number of global environmental issues threatening our mother nature and are also the topic of hot debate is ecological sustainability; global warming; degradation of Water and Land Resources; loss and conservation of biodiversity; intensive farming; Anthropogenic Landscapes; dams construction; and pollution. Science is also playing an important role in the Globalization of Environmental Discourse. While due to fast growing population a new consumer culture is emerging globally and affecting the ecology of our environment.

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Sample Questions

- 1) Define global warming and its ecological impacts.
- 2) What are the main causes of water and land degradation?
- 3) What do you mean by ‘peak water’ condition?
- 4) What are the ways and means of conservation of bio diversity?
- 5) Discuss the role of global consumer culture on the ecology of earth.

UNIT 2 ANTHROPOLOGY AND CLIMATE CHANGE

Contents

- 2.1 Introduction
- 2.2 Anthropological Research on Culture, Environment and Climate Change
 - 2.2.1 Beginnings
 - 2.2.2 Contemporary Contributions
- 2.3 Communities, Culture and Climate Change
- 2.4 Anthropological Actions on Climate Change and the Way Ahead
- 2.5 Summary
 - References
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Learning Objectives



At the end of this unit, you will be able to:

- have a good grasp of the relevance of the discipline of a Anthropology in dealing with the problem of climate change;
- have an understanding of the contribution of a Anthropology in understanding the complex inter-relationship between culture, environment and climate change; and
- appreciate the potential role of a Anthropology in future actions to deal with climate change.

2.1 INTRODUCTION

As you must have observed, climate change or global warming is a burning topic in recent times. Some of you must have followed the recent coverage in the newspapers and television channels on the progress of international negotiations on climate change.

Here, in this unit, we will be studying about the role which the discipline of a Anthropology and anthropologists can play in this pressing issue confronting people across the globe and which can be expected to increasingly grow, if urgent action is not taken.

Most climate scientists seem to have arrived at a consensus on one fact: that climate change or global warming is mainly the result of human or anthropogenic activities, particularly set in motion since the Industrial Revolution. It is perceived by them to be a problem resulting primarily from global capitalism with its emphasis on profits and ever increasing production and consumption, though natural forces also play a contributory role. And it is expected to have severe economic, social and political consequences. In the words of Foster (2005, p. 14-15), “the ecological crisis engendered by the capitalist economy...threatens

the collapse of world civilization, and irreparable damage to the entire biosphere from which human society and the planet as we know it may never recover-if current trends are not reversed. The latest scientific reports indicate that global warming is, if anything, increasing faster than we previously thought, leading to fears of unpredictable and cumulative effects and of abrupt climate change...the removal of environmental regulations as part of neoliberal economics has only served to heighten this ecological crisis”.

Climate change is expected to have serious consequences for a lot of people across the globe. However, ironically, despite having contributed the least to the factors resulting in climate change, it is expected to have the most adverse impact upon many indigenous groups, small island nations, poor people living in the developing world, forest dependent communities etc. They could end up bearing the brunt of rising temperatures, sea level rise, increase in violent weather, lowered agricultural productivity, displacement due to these factors etc. Thus, climate change is anticipated to adversely impact many of the communities which anthropologists have traditionally studied. According to Crate and Nuttall (2009), anthropologists are encountering everywhere ‘field partners’ or local and indigenous peoples who are already seeing and experiencing the effects of climate change and like them, anthropologists are confronted with the challenge of comprehending and responding to these changes.

Mitigation and adaptation are projected as the two strategies for dealing with and arresting the impacts of climate change. Mitigation involves human intervention to reduce the sources or enhance the sinks of greenhouse gases. Examples include using fossil fuels more efficiently for industrial processes or electricity generation, converting to renewable energy (solar energy or wind power), improving the insulation of buildings, and expanding forests and other sinks to remove greater amounts of carbon dioxide from the atmosphere. Adaptation has been increasingly projected to have great relevance in helping local and indigenous people cope with the effects of climate change. Adaptive capacity is defined by the Intergovernmental Panel on Climate Change (2007) as “the potential or ability of a system, region, or community to adapt by adjusting to, moderating the potential damages of, taking advantage of the opportunities created by, or coping with the effects of global climate change”. It is generally believed that indigenous people possess a relatively high capacity for adaptation to uncertainty and change because of both a generalist and time-tested knowledge of subsistence survival and a propensity for innovation in the context of environmental, socio-cultural, political, and economic change (Berkes, 1999). However, many indigenous groups are actively expressing their concern that the local effects of global climate change may exceed their adaptive capacity and threaten the survival of their communities and cultures (Crate, 2008).

In this context, it now needs to be examined how a Anthropology can contribute to dealing with climate change. According to Batterbury (2008), a Anthropology has much to offer to the study of global warming or climate change and in his view, “a Anthropology without a sense of urgency about global warming is unthinkable”. This, according to him, is due to the fact that climate variability and weather patterns are a permanent backdrop and often a central force in social life and anthropology’s long tradition in the study of local and indigenous climate and environmental knowledge and the work done in the realms of e Environmental a Anthropology and cultural studies of climate variability offer key directions for future research and advocacy.

2.2 ANTHROPOLOGICAL RESEARCH ON CULTURE, ENVIRONMENT AND CLIMATE CHANGE

Anthropological research on culture, environment and climate change has a long tradition with a Anthropology always having a strong focus on the inter-relationship between man and his environment, mediated through culture. However, for the sake of better clarity and understanding, we will be studying this in two phases- the beginnings, dealing basically with anthropological research on culture and environment (which provide a precursor and grounding for later anthropological research on climate change) and contemporary contributions of anthropologists to the debate on climate change.

2.2.1 Beginnings

According to Orlove (1980), early anthropologists were not just content with cataloguing the variety of human lives around the world, but they were equally interested in the drivers of societal and cultural variation, one of which was the environment. These earlier generations of anthropologists were influenced to a great deal by the theory of geographical or environmental determinism which had dominated pre-Enlightenment intellectual thought, beginning with Hippocrates and Aristotle and lasting well into the 20th century (Peterson and Broad, 2009). Thus, 19th century anthropologists tried to provide an explanation for cultural or physiological differences as attributable solely to climate variation which was also used to justify racism and imperialism. Following the theory of historical possibilism propounded by Darylle Forde and Herskovits (students of Franz Boas) in the early twentieth century, anthropologists rejected the idea of the environment and climate as being the sole determiners of societal and cultural tendencies and also started identifying the importance of other factors. In the mid 20th century, cultural ecologists like Julian Steward focused on how societies adapted to their environment and available technologies. We will not be going into details here, as these different theories must have already been covered in previous units and all of you must be familiar with them. These theories are, however, relevant to our discussion here as it is on the basis of these theoretical foundations and the groundwork built here that modern day anthropologists have entered into the arena of climate change. Another relevant area for our discussion is the rise of Disaster Anthropology in the 1960s, with anthropologists like Tony Oliver-Smith proposing that a Anthropology has a unique role to play in disaster research, since disasters are the outcomes of the interaction between nature and society, a central focus of the discipline (Peterson and Broad, 2009).

It would also be worthwhile to mention the contribution of archaeologists who have contributed to an understanding of the role of climate change in shaping past human societies. For example, Childe (1928) attributed the emergence of agriculture to the desiccation that followed at the end of the glacial period, which led people to settle along river courses and near oases, which had favourable conditions for the domestication of plants and animals. On the other hand, Binford (1968) concluded that a worldwide change in sea level in post-Pleistocene times led to a greater exploitation of fish and other aquatic resources, which encouraged sedentary settlements and population growth.

2.2.2 Contemporary Contributions

Now, we shall review some of the contributions of anthropologists to the issue of climate change in particular. Batterbury (2008) laments the fact that despite a Anthropology's relevance to addressing the problem of climate change, in recent decades, only a very small group of anthropologists have contributed to it, especially at the policy level. Steve Rayner, one of the most influential anthropologists of all times as far as international climate policy is concerned, accused fellow anthropologists (not involved in the problem of climate change) of 'fiddling while the globe warms' (Rayner, 1989). Rayner (2003), in a resurvey of the field five years later discerned "a resurgence of anthropological interest in weather and climate". But, as observed by Baer (2007), this has been driven by only a few individuals, conference sessions and scant publications.

Rayner (1989) pointed out that Margaret Mead and William Kellogg had organized a workshop on the issue as early as 1976, where they offered a recommendation for a 'law of the air' for emissions.

Kempton, Boster and Hartley (1995) led a study of U.S. environmental values through semi-structured interviews with 43 informants and surveys of 142 respondents to examine informants' perceptions of three major global environmental changes, namely ozone depletion, species extinctions and global warming.

Brown (1999) in a brief article in *Science* makes a reference to 'Climate and Anthropology' and the imperative for examining the impact of global warming on societies. Roncoli and Magistro (2000) have expressed the view that anthropologists should be studying global climate change as part and parcel of the study of climate variability which anthropologists have long been interested in, such as the study of droughts, hurricanes and other instances of erratic weather patterns and their impact upon human society.

McIntosh, Tainter and McIntosh (2000) argue that economists and policy makers need to comprehend how social memory works as it is pertinent to small-scale subsistence producers who are the most vulnerable to the effects of climate change and whose voice, unfortunately finds no place in policy decisions. Indigenous social memory, in their opinion, is a great repository of human experience and hence, a very important resource for resilience and adaptation.

Ray (2002) in a book chapter titled "Cultural paradigms: an anthropological perspective on climate change" is vociferous in her assertion that policies about global warming must employ cross-cultural knowledge of benign environmental practices while maintaining consciousness of traditional family and community structures, labour division and localized subsistence strategies.

Anthropologists have also been working on the perceived differences between local knowledge of climate change and scientific information, looking at how local knowledge can add value to scientific observations and also how it can be valued and included in the coproduction of both mitigation and adaptive strategies. Krupnik and Jolly (2002), for instance, talk about many examples of partnerships forged between local people and the scientific community and the integration of different sources of knowledge through the use of innovative techniques. Anthropologists are also studying the underlying tension in forecast dissemination

between scientific forecasts and local climate prediction practices as well as the factors which influence the acceptance of such information by communities (Peterson and Broad, 2009). Anthropologists like Brown (1999) and Roncoli (2006) have also been engaged in efforts to provide climate forecasts to rural households more effectively. With new weather patterns rendering traditional climate knowledge inadequate at times, scientific forecasting could assist farmers, but understanding how it is interpreted and understood is an ethnographic task. Orlove, Roncoli, Kabugo and Majugu's study (2008) demonstrates that farmers in Uganda are capable of participating as agents as well as consumers in the broad social system of forecast development and use, also emphasizing that farmers' indigenous knowledge constitutes a resource of great potential value to agencies that develop and disseminate forecasts.

Strauss and Orlove (2003) mainly investigate two key aspects of weather and climate: how human beings experience weather and climate in differing time frames and how they employ language in response to them, to stress how human perceptions and reactions to these phenomena are ultimately molded by culture. They stress that "unlike other animals, humans have unusually varied and elaborate forms of social life and communication that are made possible by language and by culture. Our complex forms of collective life influence the way we are affected by weather and climate, creating both forms of vulnerability and capacities to reduce impacts. Our highly developed cognitive capacities allow us to recall the past and anticipate the future"(p.3).

In *Darkening Peaks: Glacier Retreat, Science and Society* (2008), Orlove, Wiegandt and Luckman highlight the manner in which human responses to glacier retreat are influenced as much by cultural attachment as by economic matters, offering the argument that ultimately, the main motivating factor for action on climate change will be the cultural and iconic power for glaciers for human being who both inhabit their presence and who live afar. On the same theme of glaciers, Cruikshank (2005) points out how glaciers, previously considered eternally frozen, inert and distant, acquire new meaning in the context of contemporary climate change concern. With the help of examples, she demonstrates how glaciers undergoing rapid environmental change are interpreted differently and lead to adoption of diverse local strategies. For instance, she mentions how in the Andes, a traditional ritual which involved pilgrims carrying away pieces of glacier has been discontinued to prevent it further retreating. On the other hand, in Asia, local men are 'planting' ice in opposite-gender fields in order to grow the glacier and prevent drought.

Crate (2008), on the basis of her extensive and prolonged fieldwork among the Viliui Sakha of Siberia, who are grappling with the effects of climate change, stresses on the point that this encounter with climate change is mediated through culture and community perceptions and that it is indispensable for research projects on climate change to focus on the cognitive/ perceptual orientations of communities.

Crate and Nuttall's (edited) book entitled *Anthropology and Climate Change: From Encounters to Actions* (2009) is in fact one of the first books to expansively assess anthropology's engagement with climate change, mapping out exciting trajectories for research and also issues a call to action. As they opine, the book seeks to "explore anthropology's role(s) in climate change issues and with the

objective of locating theoretical frames, research approaches, and applied practices that can move us from impartial witnesses of our field collaborators' experiences of unprecedented environmental change into the realm of action-oriented researchers and effective academics and practitioners" (p.21).

2.3 COMMUNITIES, CULTURE AND CLIMATE CHANGE

It may be stressed here that communities grapple with the problem of climate change through the tool of culture, which while shaping their responses, also lead to changes in the culture. Anthropologists, however, caution against treating this complex inter-relationship between culture and climate using simplistic notions of determinism and indeterminacy. Hassan (2009), using an archaeological perspective and examples from the past, emphasizes the active role of human agency in negotiating this relationship. According to him, "different groups guided by the decisions of all or key figures in the community seem to pursue different strategies in coping with a climatic crisis in their region. However, it seems that the choice is limited to a few options at any one time..." (p.41). People, in adopting a particular choice, base their decision on subjective probabilities, biased information derived from anecdotal evidence, and prejudicial positions based on their values and worldviews. Thus, as Hasan (*ibid.*, p. 40) points out, while climate has played a major role in the origins of agriculture, the emergence of state societies etc., yet the impact of any climate event depends on "the local ecological setting and the organizational complexity, scale, ideology, technology, and social values of the local population". Similarly, archaeologist Rosen (2007) points out that during Terminal Pleistocene through Late Holocene communities responded, to historical climate change with the help of several factors like social organization, technology and the perception of environmental change, which are shaped by culture.

Coming to the present context and the problem of global climate change, it may be contended that it is intimately linked to communities and cultures. The Western consumer culture, spreading across the globe has had a profound impact upon subsistence cultures pushing them towards excessive consumption from earlier frugal habits. The only manner in which this spread can be arrested is by a cultural transformation from degenerative to sustainable lifestyles that is only possible through a change in cultural values (Crate, 2008). Local and indigenous communities and their cultures are facing unprecedented threats from climate change, which could undermine traditional coping mechanisms. Ecosystem changes could be expected to have profound impact upon the use, protection and management of wildlife, fisheries and forests, also adversely affecting customary uses of culturally and economically important species and resources. The Arctic Climate Impact Assessment Report authored by Hassol (2004) forecasts that with winters getting warmer, indigenous Arctic people like the Inuit will have to cope with loss of sea ice for hunting and fishing, changed migration routes of animals, coastal erosion due to wave action on ice-free coasts, loss of permafrost, and changes in abundance of traditional food sources. On the other hand, Jennaway (2006) predicts that global warming could lead to many serious consequences for East Timor, including shift in the coastline and a loss of estuarine breeding grounds for fish and bird populations, decrease in rainfall with impacts upon crop production and forest ecologies, coupled with an increase in the number

of El Nino events, with more frequent and longer droughts. The author apprehends that all these would have adverse repercussions on East Timor's traditional ways of life and the lives of majority of its people living in rural areas and engaged in intensive modes of agricultural production. In the Indian context, Ravindranath et. al, (2006) points out that climate change will adversely impact Indian forests and forest dependent communities in India, whose livelihoods are already bearing the brunt of forest degradation and loss, are going to find themselves very vulnerable.

According to Crate and Nuttall (2009), climate change could lead to relocations of human, animal, and plant populations, which entail a loss of intimate human-environment relationships that not only ground and substantiate indigenous worldviews, but also work to maintain and steward local landscapes. The cultural implications of such change could be vast- entailing loss of traditional wisdom, of cosmologies and worldviews as well as the human-environment relationship that make up a culture's core.

Much has been written about the adaptive capacity and resilience of traditional cultures to cope with climate change. However, there is considerable apprehension that projected climate changes will exceed any previously experienced changes and coping mechanisms embedded in traditional cultures may, therefore, not be sufficient in themselves to deal with impacts of climate change (Salick and Byg, 2007). Moreover, it will have to be taken into consideration that local and indigenous communities in recent times are not self-reliant closed systems. Participation in a global network and subsequent changes could make traditional mechanisms less effective, while also increasing the possibilities for knowledge transfer and collaboration to tackle problems in the wake of climate change. Also, climate change is expected to aggravate already existing problems like poverty, gender bias, political and economic marginalization, land and resource encroachments, human rights violations and contribute to the growth of more displaced local and indigenous communities.

2.4 ANTHROPOLOGICAL ACTIONS ON CLIMATE CHANGE AND THE WAY AHEAD

In the context of the above intimate relationship between culture, communities and climate change, it now remains to be seen what anthropological actions are needed in the near future to deal with climate change. In the opinion of Crate (2008), the problem of climate change puts anthropologists in a state of emergency as field researchers and their tasks lie in translating, advocating, educating and mediating between the anthropologists' research communities and the larger global community. She opines that anthropologists are strategically well-placed to interpret it, communicate information about it, and act in response to it both in the field and at home.

According to Milton, an 'a Anthropology of climate change' may consist of three key elements: contributions to big-picture debates, analysis of discourses of climate change and of realities lived on the ground by local and indigenous people having to deal with problems in the wake of climate change. In MacRae's view (2010), while a Anthropology is equipped for all the three tasks, it is the third one which is least likely to be addressed by the approaches of other disciplines

and for which anthropology is especially equipped. He further emphasizes that such analysis of 'realities on the ground' and an attempt to position it within the 'global discourse' could be one of the most important contributions which anthropologists could and should be making to climate change research. According to Reuter (2010), anthropologists have a lot to contribute in assisting in the fight against climate change producing human behaviour by telling the real-life story of the first victims of climate change. In his view, telling such stories in an adept and interesting manner can raise the awareness of the public in other parts of the world. But such stories should not merely be fear invoking but should also highlight how people in a wide range of situations and local cultures manage to adapt and cope by taking up new ways of living already available in their tool-kit or developing entirely new strategies. Crate (2008) also opines that western anthropologists could play an important role in translating their local level field experiences of climate change into compelling messages and projects to persuade home audiences to move towards a carbon-free, sustainable society.

Anthropologists could also directly intervene to help people evolve new strategies to cope with climate change by facilitating inter-cultural knowledge transfer and help communities become part of international networks and processes. Crate (2008) points out that research on the local effects of climate change make it apparent that indigenous peoples' recognized capacity for adaptation to change may, on its own be inadequate to cope with these effects. This, she feels, calls for the development of an action-oriented approach to anthropological climate change research that begins by developing cultural models of the local effects of global climate change, goes on to fill in the gaps with Western scientific knowledge, and ends with the dissemination of that knowledge and its use for the development of adaptive strategies, policy recommendations and advocacy. It is also expected that apart from a research agenda, anthropologists will increasingly have to play the role of advocates, in helping local and indigenous communities project their problems and have a proactive role in policy decisions. As Kirsch (2002, p.175) opines, in the context of anthropologists' responsibility to the communities in which they work- "neutrality is not an option". Baer (2007) expresses the hope that anthropologists would be able to contribute to a larger effort not only to mitigate the impact of global warming on humanity but also to thinking about an alternative global system, one committed to meeting people's basic needs, social equity and justice, democracy and environmental sustainability.

Batterbury (2008) is of the opinion that if a Anthropology is to have a continued relevance to the issue of climate change, then a Anthropology will have to be more comfortable operating in a multi-disciplinary framework. According to Malone and Rayner (2001), the nature of the climate change issue is such that it cannot be adequately addressed by one approach but mandates complementarity between the approach of the 'hard' natural/ physical sciences and that of the 'soft' social sciences and reconciliation between the interpretive and descriptive approaches within the social sciences. Crate (2008) also emphasizes on the need for anthropologists to develop collaborative research projects with other social and natural scientists, adopting a multiple-stressors perspective (to include socioeconomic, political and other environmental challenges), integrating notions of adaptive learning, generating policy-relevant insights and linking findings to the larger question of community sustainability. According to Jerstad (2010), there are a number of reasons why anthropologists tend to shirk away from the

issue of climate change such as a reluctance to engage politically, which climate change may require; the need for academic anthropology to engage with the 'hard' sciences and 'development' which could prove to be problematic etc. Despite the reluctance, Jerstad observes that anthropology of climate is emerging and anthropologists must reflect on and orient themselves in relation to this. Anthropology's engagement can be expected to give academic credibility to the problems confronted by people which can be assumed to be due to climate change such as droughts, floods, storms and more subtle meteorological changes, which will in turn enable governments, corporations and other bodies to act and change policy in favour of the common man (whose voice has carried little weight in climate change policy till now).

2.5 SUMMARY

Anthropologists are encountering everywhere 'field partners' or local and indigenous peoples who are already seeing and experiencing the effects of climate change, which mandates a call to action for the discipline. Anthropological research on culture, environment and climate change has a long tradition with anthropology always having a strong focus on the inter-relationship between man and his environment, mediated through culture. While local and indigenous communities have considerable adaptive capacity, there is apprehension that projected climate changes will exceed any previously experienced changes and coping mechanisms embedded in traditional cultures may, therefore, not be sufficient in themselves to deal with impacts of climate change. Considering the magnitude of the problem, anthropologists will have to play a more proactive role in the future, with actions ranging from academic research, education and awareness, advocacy to a more effective presence in international policy making.

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Suggested Reading

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Sample Questions

- 1) How is the discipline of a Anthropology suited to study and deal with the problem of climate change?
- 2) What is the relationship between culture and climate change? Are traditional coping mechanisms adequate to adapt to climate change?
- 3) What are the different problems which local and indigenous communities face in the wake of climate change?
- 4) Critically examine the contributions of a Anthropology to understanding the problem of climate change.
- 5) In the face of unpredicted climate change, what are the diverse roles which anthropologists will need to play in the near future in dealing with the problem?

UNIT 3 ENVIRONMENTAL JUSTICE

Contents

- 3.1 Introduction
- 3.2 What is Environmental Justice?
- 3.3 Principles of Environmental Justice
 - 3.3.1 Concepts in Political Ecology (Class, Race and Gender)
 - 3.3.2 Politics of Nature Conservation
- 3.4 Indigenous Peoples and Environmental Justice
 - 3.4.1 Environmental Justice Related to Consumption, Sustainability
 - 3.4.2 Environmental Justice and Human Rights Issues
 - 3.4.3 Environmental Justice and Human Actions
- 3.5 Resistance and Political Action
 - 3.5.1 Policy and Advocacy
- 3.5 Summary
- 3.6 References
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- Sample Questions

Learning Objectives



At the end of this unit, you will be able to:

- gain understanding of the history, theory, and practice of environmental justice and related movements in the world;
- get a better understanding of human right issues and the challenges posed with respect to rights to health and safe livelihood;
- know the debates over “sustainable development” and “resilience theory,” and the related grassroots movements that offer “alternative” strategies to achieve environmental justice; and
- learn how environmental justice principles are integrated into the laws, regulations, policies, and practices of environmental management and planning.

3.1 INTRODUCTION

The Bhopal gas tragedy is a well known phenomenon that happened at mid night on 3rd Dec 1984 in Bhopal. It was a manmade tragedy that caused suffering to the poor living around the industry and about 3000 person including children died due to leakage of gas called MIC (Methane Isocyanides).

Did the victims of Bhopal got justice in court of law and at international level? Not to the level that damage was done as law was only looking into scientific factors, not the social and economic ones which were more critical as the population that suffered the most was poor, vulnerable and minority in characteristics. Although people were compensated monetarily, the loss they

suffered in health, family and livelihood could not be compensated. Therefore, it is imperative to know what is environmental justice and how to help people to safe guard themselves from environmental damages which have non-tangible factors associated with it.

Over the past two decades, environmental justice movement has drawn attention to the disproportionate location of hazardous waste facilities in the neighbourhood of poor and under privileged sections of society along with other instances of discrimination where vulnerable populations have been exposed to environmental hazards. Out of small and seemingly isolated environmental struggles emerged potent grass root community driven movements that addressed some of these questions. Many of the environmental struggles of 1980s and 90s have become a unifying theme across race, class, gender, age and geographic lines. Accordingly, the concept of “environmental justice” has emerged as a prominent part of the international dialogue over citizen empowerment and the environment.

A number of environmental justice networks exist today and the previous decade has seen some positive change in the way groups relate to each other. Presently, increasing number of community based groups, conservation groups, legal groups, academic institutions and health related organizations that differentially impact poor people have been set up. Environmental racism and environmental justice panels have become important at national conferences and forums. In a short time environmental justice advocates have made substantial impact on public policy, industry practices, national conferences, research and curriculum development. Therefore the need to know about environmental justice has become important for the new generation of students and researcher.

3.2 WHAT IS ENVIRONMENTAL JUSTICE?

The concept of environmental justice as a mobilizing force emerged in the US in the last forty years, in opposition to practices that were classified as environmental racism. This is defined as ‘any policy, practice or directive that differentially affects or disadvantages (whether intentionally or unintentionally) individuals, groups or communities based on race or color’. As defined by (Bullard RD. 1996), environmental justice is the principle that “all people and communities are entitled to equal protection of environmental and public health laws and regulations.” In the words of Bunyan Bryant, “Environmental justice is served when people can realize their highest potential”.

Environmental justice (EJ) is defined by Miller (2003) as the fair treatment and meaningful involvement of all people regardless of race, color, sex, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies. Fair treatment means that no population, due to policy or economic disempowerment, is forced to bear a disproportionate share of the negative human health or environmental impacts of pollution or environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local and tribal programs and policies.

Environmental justice can be distinguished from environmental inequality (or environmental injustice), which refers to a situation in which a specific social group is disproportionately affected by environmental hazards (Capek SM. 1993;

Dobson A. 1998; Pellow DN. 2000). A specific form of environmental inequality is the phenomenon of environmental racism. Chavis (Bullard RD. 1990/2000) first defined the term environmental racism in the following manner: “Environmental racism is racial discrimination in environmental policymaking, the enforcement of regulations and laws, the deliberate targeting of communities of color for toxic waste facilities, the official sanctioning of the life-threatening presence of poisons and pollutants in our communities, and the history of excluding people of color from leadership of the ecology movements” (p. 278). Thus environmental racism “refers to any policy, practice, or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race or color” (Bullard RD, 1996).

Studies on environmental justice began in the early 1970s, a substantial body of literature was developed that documents the existence of environmental inequalities in the United States (Burch WR. 1976; Freeman MA. 1972; Lave LB, Seskin EP. 1970). These early findings were later amplified by a series of studies focusing on the location of hazardous waste sites, beginning with a study conducted by the U.S. General Accounting Office in 1983. This study documented that African American communities in the southern United States were playing host to a disproportionately high number of waste sites.

In 1990, Bryant and Mohai organized the Conference on Race and the Incidence of Environmental Hazards at the University of Michigan. The Michigan conference brought together researchers from around the nation who were studying racial and socioeconomic disparities in the distribution of environmental contaminants to discuss their findings and implications. Since 1990, scholars have produced an extensive and sophisticated literature on the dimensions of differential environmental risks based on race and socioeconomic class position (Bryant B. 1995; Mohai P. 1996). Bryant & Mohai (1992) were the first to perform a systematic meta-analysis of empirical studies shedding light on race and class disparities in the distribution of environmental hazards. All these studies found environmental disparities based on either race or income or both.

In a more recent review of the literature regarding differential exposures to environmental pollution, Evans & Kantrowitz (2002) found that significant relationships exist between the ethnic and class characteristics of a community and levels of exposure to environmental risk. Across a wide variety of environmental components, including proximity to hazardous waste sites, exposures to air and water pollution, high levels of ambient noise, residential crowding, quality of housing, quality of local schools, and the work environment, communities composed of people of lower SES and people of color were consistently exposed to higher levels of environmental risk.

The key points considered in the environmental justice are that it opposes the destructive operations of multi-national corporations. It demands the cessation of the production of all toxins, hazardous wastes, and radioactive materials, and that all past and current producers should be held strictly accountable to the people for detoxification and containment at the point of production. Environmental justice mandates the right to ethical, balanced and responsible uses of land and renewable resources in the interest of a sustainable planet for humans and other living things.

Environmental justice calls for universal protection from nuclear testing, extraction, production and disposal of toxic or hazardous wastes and poisons that threaten the fundamental right to clean air, land, water, and food. It affirms the fundamental right to political, economic, cultural and environmental self-determination of all peoples. It also advocates to protect the right of victims so that one gets full compensation and reparations for damages as well as quality health care. Environmental justice affirms the right of all workers to a safe and healthy work environment, without being forced to choose between an unsafe livelihood and unemployment. It also affirms the right of those who work at home to be free from environmental hazards.

Environmental justice demands that public policy be based on mutual respect and justice for all peoples, free from any form of discrimination or bias. It requires that we, as individuals, make personal and consumer choices to consume minimum Earth's resources and to produce as little waste as possible; and make the conscious decision to challenge and re-priorities our lifestyles to insure the health of the natural world for present and future generations. Environmental justice affirms the sacredness of earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction.

3.3 PRINCIPLES OF ENVIRONMENTAL JUSTICE

The principles of Environment Justice are that the people who faces social and ecological discrimination on the basis of colour, caste, religion and creed should build a national and international movement against the destruction taking place in their lands and communities, and re-establish the spiritual interdependence to the sacredness of Earth; to respect and celebrate each other's cultures, languages and beliefs about the natural world and its roles in healing; to insure environmental justice; to promote economic alternatives which would contribute to the development of environmentally safe livelihoods; and, to secure political, economic and cultural liberation that has been denied for over 500 years of colonization and oppression, resulting in the poisoning of communities and land and the genocide of peoples, do affirm and adopt these Principles of Environmental Justice (Home, 1991).

Environmental justice affirms the need for urban and rural ecological policies to clean up and rebuild our cities and rural areas in balance with nature, honoring the cultural integrity of all of our communities, and providing fair access for all to the full range of resources. It calls for the strict enforcement of principles of informed consent, and control on the health related experimental reproductive and medical procedures. It opposes the destructive operations of multinational corporation (Home, 1991).

3.3.1 Concepts in Political Ecology (Class, Race and Gender)

Wolf first used the term Political Ecology in the year 1972. The roots of political ecology lie in ecological and social science. Political ecology emerged from the work of Cultural ecology of Julian Steward, which linked human strategies of ecological success to cultural adaptation, with community ecology, cybernetics and systems theory. Political ecology was also influenced by hazards school (Burton, *et al.*, 1978) with its focus on perception adjustment and management of environmental hazards. Earlier works of political ecology focused on unequal

power relations, conflict and cultural modernization under a global capitalist political economy as a key force is reshaping and destabilizing human interaction with the physical environment. Later on Blaikie and Brookfield (1987) defined “Political Ecology” as combination of ecology and a broadly defined political economy. Together this encompasses the constantly shifting dialectic between society and land-based resources, and also within classes and groups within society dependent on different natural resources based livelihoods itself.

Blaikie and Brookfield identified key analytical approaches in political ecology. They include focus on the environmental actions that are shaped by economic, ecological and political marginalization, flawed environmental data and policies that can be understood through multiple lines of explanation. Second approach resulted from the increased integration of third-world agriculturalist into global markets under unequal relations of power and it was viewed as undermining the agriculturalist traditional localized environmental knowledge and long histories of successful adaptation to sometimes harsh and unpredictable environments (Watts, 1983). Such political-economic approaches in the 1980s and early 1990s largely defined as ‘structuralist’ phase of political ecology.

The second movement in political ecology was due to an increased awareness of the limits of ecological notions of stability and equilibrium that underlie many popular narratives of environmental change and crisis. Policies that restrict livelihood activities such as smallholder agriculture have often been justified using equilibrium, or ‘nature in balance’ arguments. Zimmerer (2000) discussed concept of non-equilibrium ecology to show that it is very difficult to make confident statements about long-term ecological responsiveness based on limited temporal and spatial data, and when the evaluations and measurements of ecology are influenced by humans in culturally and gender specific ways.

3.3.2 Politics of Nature Conservation

The politics of nature conservation is an interesting case for many reasons. First, it has a relatively long history in the international policy field and is thus particularly suited for the analysis of change. Bilateral treaties on nature conservation were signed in the 1902 between Serbia and Romania and between Serbia and Hungary (1903). Multilateral treaties followed a few decades thereafter with the Convention relative to the Preservation of Fauna and Flora in their Natural State (1933) and the Convention on Nature Protection and Wild Life Preservation in the Western Hemisphere (1940). Secondly, the international politics of nature conservation have frequently led the way in the development of innovative norms and instruments of international environmental politics (Dingwerth, 2008).

Generally, the field is seen as representative of the broader field of environmental politics. Further, conservation politics is characterized by the co-existence of some areas of decision-making that are less directly influenced by economic and societal globalization for example the conservation of the Siberian crane. Likewise other areas in which economic and societal globalization exert considerable direct effects namely the conservation of the world’s forests and biological diversity. It is therefore said that world politics in general has gone from international politics to global governance. According to Dingwerth (2008) the politics of nature conservation can be disaggregated into four major claims, namely a)

Internationalisation, b) Diffusion of authority, c) Changing norms of governance and Distribution of governance resources.

Internationalisation deals with growth of conservation politics at international level. The number of multilateral environmental agreements has increased to over 900 in the 21st century (Mitchell 2008). The subject areas like wildlife species and ecosystems and forests gained prominence compared to other conservation related legislative activities from 1976 to 2005. Similarly, the number of multilateral agreements increased rather slowly compared to the number of national laws on conservation issues.

Secondly, diffusion of authority deals with decision-making bodies that can issue binding regulations independently of the consent of each individual state party. Here, the number of agreements with supra-national elements with provisions for majority voting or for compulsory arbitration tribunals increased minimally. The experience from the politics of forest conservation showed that major international processes remain firmly intergovernmental. For example, dealing with issues of judgment on the compatibility between certain provisions of the Convention on Biological Diversity and the Agreement on Trade Related Aspects of Intellectual Property Rights as to the Protection of Traditional Knowledge (2003), the International Court of Environmental Arbitration and Conciliation examines whether there existed inherent contradictions between the obligations of the Convention on Biological Diversity (CBD) and the Agreement on Trade-Related Aspects of Intellectual Property (TRIPS).

Similarly the activities of International Union of Conservation Network (IUCN) have made the transnational pillar of global conservation governance relevant for at least a few decades. It was founded in 1948 and works as non-governmental advocacy organization and a functional international organization, the IUCN has defined the field of nature conservation politics more than any other organization.

Another issue of politics of nature conservation is that the old norm which exclusively recognised states as legitimate rule-makers has given space for the new norm and acknowledges that non-state actors may also create or partake in the creation of legitimate rules. Moreover, compliance with procedural norms of transparency, accountability and deliberativeness is said to have become more central to legitimate rules to their target audiences (Dingwerth, 2007b). It also indicates that participatory norm building has been going on in this phase of politics.

Fourth and finally, shifts in the demand and supply of governance resources are most difficult to determine with precision. The general impression however is that the demand for cognitive and financial resources has indeed increased as transboundary conservation regulation has moved from general conventions to cooperation on more narrowly defined issues. Moreover, knowledge and funds for conservation governance appear to be more evenly distributed among a range of actors as a result of the increasing specialisation of non-governmental organisations and the decrease in the relative shares of government funding for conservation-related projects.

3.4 INDIGENOUS PEOPLES AND ENVIRONMENTAL JUSTICE

The study of indigenous movements and violence, indigenous resource rights and knowledge, and the deployment of indigenous status and identity all raise questions about the politics and ethics of research. That the above topics of anthropological interest have become the tools by which indigenous peoples articulate their identities, stake claims to local resources, and fight for their rights in regional, national, and international arenas poses moral and ethical challenges to anthropologists.

When we speak of Environmental Justices, the issues of Indigenous people and concerns of their human right automatically become very significant. The legal issues concerning them lack consistency in domestic and international environmental policies AND are further compounded by issues of justice and equity. For at least two decades, the term “environmental justice” has been used to highlight the distributional impacts of the dominant society’s environmental decision-making process on disadvantaged communities, including the poor and racial minorities. At the global level, such disparities are extended to the inequities between the North and the South, between developed and developing countries. Within these divides, complex issues of economics, environmental integrity, and human rights get reflected in terms such as “environmental racism,” “radioactive genocide,” and “ecocide” (Greinde and Johansen, 1995).

The question is how do indigenous peoples fit within the debate on environmental justice? In general, an indigenous claim for environmental justice is categorized into two sections. The first category consists of Native claims for regulatory control over reservation lands. These claims constituted the focal point of the first generation of environmental justice claims within the domestic arena. The second category involves claims by indigenous peoples that they have unique interests and need to be represented as “rights-holders” in national or international decision-making that impacts their communities. These claims for “environmental self determination” rest upon the unique cultural and political status of indigenous peoples throughout the world and evoke a human rights-based set of norms, rather than a domestic sovereignty model. The second generation of indigenous environmental justice claims fits into this category (Tsosie, 1995).

The discussion on environmental justice in the 1990s focused on domestic efforts to protect North America and Canada tribal autonomy over the environment. Indigenous communities whose members predominantly practice traditional life ways are particularly vulnerable to developmental change. However, because development change is often thought to be the inevitable due to industrialization and intentional policy of national governments generally take place and are not in control of Indian Tribal peoples, the discussion in this area must go beyond tribal sovereignty and evaluate the rights of indigenous peoples as unique cultural and political groups.

Therefore, it is argued that right to environmental self determination for indigenous peoples, which would allow them to maintain their unique cultural and political status as the peoples of traditional lands before the establishment of current national boundaries.

3.4.1 Environmental Justice Related to Consumption, Sustainability

Environmental justice (EJ) has focused on inequalities in exposure to environmental burdens and hazards, such as levels of pollution and the siting of hazardous facilities, and to a lesser extent on unequal access to environmental amenities and assets. More recently, social justice issues related to the environment have gained increasing interest in politics and philosophy (Shrader-Frechette, 2005). Research on sustainable consumption (SC) is more recent and perhaps more multi-faceted, encompassing topics from sustainable social innovations in local communities to technical determinations of global ecological footprints of consumption (Southerton et al., 2004).

3.4.2 Environmental Justice and Human Rights Issues

Human rights as a philosophical concept refers to the reasonable demands for personal security and basic well-being that all individuals can make on the rest of humanity by virtue of their being members of the species *Homo sapiens* (Shue H, 1980). Building on a foundation of natural law, political principles, national and international legal instruments, and humanitarian agreements, the UN concept of human rights acknowledges that in all times and places, reasonable people, regardless of political affiliation demand certain minimum standards of behavior by governments towards their own citizens (Laurd E, 1967). Collective and indigenous rights are now part of the human rights framework; the challenge is to make individual and collective rights mutually reinforcing (Steavenhagen R, 1989). Indigenous rights have been the special legacy of Anthropology and cultural relativism, as well as a target of anthropological concern in criticizing modernization trends and development practices (Bodley J.H, 1988).

The right to health, a decent existence, work and all occupational safety and health, the right to an adequate standard of living, freedom from hunger, an adequate and wholesome diet, and decent housing, the right to education, culture, equality and nondiscrimination, dignity, and harmonious development of personality, the right to security of a person, and of the family, the right to peace, and the right to development are all rights established by existing United Nations Conventions (United Nations, 1991). These rights represent the ideals that government strives to provide to its citizens i.e. basic life requirements that all human are entitled to. Environmental degradation in itself is not a new for human survival. The rise and fall of many past societies can be explained in part by the ability to modify the immediate environment and subsequent inability to prevent escalating environmental degradation.

Tribal and indigenous society is struggling to survive in the face increasing desertification, deforestation, declining fisheries, poisoned food, polluted water and air, and climatic extremes weather events that continue to intensify: floods, droughts, hurricanes. Most of present environmental crisis is difficult to define them, to understand their origins, and to understand their consequences. These crises are rarely confined region or resources, but they are mostly outcome of development action of mega polcieis of development without considering the right and needs of local tribal population

Generally, human environmental rights abuse occurs because people happen to be living in area rich in natural or strategic mineral resources. The tribal areas

are open spaces far from densely populated regions, and therefore become the logical place for military exercises, weapons testing, the storage or disposal of hazardous wastes for example military exercise zone in Hoshangabad district of Madhya Pradesh, where tribal living around this area faces many problems. These isolations also attract those who are seeking economic, political, and environmental alternatives for example the rich coal areas inhabited by tribal population in India. For these reasons, like Narmada dam resident peoples become displaced, alienated from their traditional holdings, and experience increasing difficulty in maintaining individual, household, and community health (Burger, 1990).

Human environmental rights abuse also occurs because people are believed to be in the way of progress and national needs, which supersede individual and community concerns. Thus, people are forcibly relocated while governments and industry build dams, expand export-oriented intensive agriculture, develop international tourist facilities, and set aside wilderness to save the bio-commons and attract foreign eco-tourist dollars (The Ecologist, 1993; Johnston, 1994).

Collective and individual human rights are also part of human rights framework and it is important to provide justice in this regard. Abuse of these rights takes place under the demand for land, property, large water projects, ecotourism, etc. Recent Forest Right Act 2006 of government of India takes care to protect these two dimensions relating to environmental justice in India.

3.4.3 Environmental Justice and Human Actions

The abuse of human environmental rights generally occurs within a cultural, as well as political economic and biophysical context. Human environmental rights violations often occur as a result of efforts to gain control of land, labour, and resources of politically land/or geographically peripheral peoples. The cultural context involves a process of social construction, where marginal peoples are seen to be biologically, culturally, and socially inferior, providing the justification for state domination.

The discourse of dominance takes several forms in state efforts to justify taking land, labour, and resources. The poverty label is constructed by ignoring or claiming as nonexistent the existing subsistence-based economies and provides the rationale for economic development efforts. Ignoring the importance of subsistence or barter-based economies also allows the inference that surrounding lands are unoccupied or are wilderness areas that can be claimed and used by the state. Legally, state control over peripheral population territory and resources is supported by Western notions of property rights: the contention that resources held in common do not in fact constitute “actual property rights” (Berge, 1994; The Ecologist, 1993).

Institutional employment of the physical, conceptual, and cultural distancing mechanisms mentioned above contributes significantly to the inability to governments to protect basic human rights. Thus, dysfunctional governance is tied to the culture and structure of power as much as it is affected by the constraints resulting from economic actions. The resulting crises are incredibly complex. Human environmental crises are rooted in histories and political economic relationships, and characterized by a synergistic and cumulative nature.

3.5 RESISTANCE AND POLITICAL ACTION

Meanwhile distributional inequity (relates to inequitable distribution of wealth and power across the human class) is crucial to the definition of justice in the environmental justice movement, recognition as an element of justice is also a central concern. The main point is that environmental justice activists mostly see themselves as outside the cultural mainstream; as such, their identities are devalued. This recognition of group demanding environmental justices both at the personal level and at the level of community are mostly not given by the elites in any condition. Therefore, the construction of inclusive, participatory decision-making institutions is at the centre of environmental justice demands. Environmental justice activists call for policy-making procedures that encourage active community participation, institutionalize public participation, recognize community knowledge, and utilize cross-cultural formats and exchanges to enable the participation of as much diversity as exists in a community.

The demand for this type of authentic, community-based participation comes out of the experience of disenfranchisement. To challenge a range of cultural, political, and structural obstacles constructed by cultural degradation, political oppression, and lack of political access, communities are coming to demand a voice and authentic participation.

Rather than attempt an analysis of the thousands of non-governmental organizations (NGOs) and grassroots organizations doing some sort of work identified as environmental justice. I want to focus on some of the potent issues of the moment and describe how justice is addressed in different scenario. The recent actions against the institutions of the new global economy like the World Trade Organization (WTO), the International Monetary Fund (IMF), and the World Bank, encompass themes of environmental justice. Related to this, movements for food autonomy and security are also articulated to the language of justice for both people and nature. Finally, numerous movements for indigenous rights in both the North and South are imbued with these issues of justice. These movements encompass notions of environmental justice because in each of the individual focuses, part of what is to be distributed are environmental good and bad, part of what is to be recognized are cultural ways of living with nature, and one aspect of participatory demands relate to environmental decision-making.

Particularly, at the centre of the recent protests against global financial and trade institutions, against the globalisation of the food system, and for indigenous rights, is the issue of equity; economic or distributive injustice is a key and constant rallying concern. The most basic critique is that the industrialization and western model of development increases and exacerbates inequity, both between the North and the South and between elites and the impoverished in southern nations, not just in economic goods, but in environmental good and bad as well. The concern regarding who benefits and at whose expense, as well as a demand for the accounting of the full costs of trade to communities, workers, and Nature, are key.

3.5.1 Policy and Advocacy

Anthropology as a field has contributed, and continues to contribute, to social policy research, practice, and advocacy in a number of different ways; it has

taken on increasing relevance as the world is rapidly being transformed by the process of globalization. The subfield of Environmental Anthropology exhibits a growing engagement with both domestic and international environmental policy. This engagement is evident in works like Patricia Townsend's 2000 book entitled *Environmental Anthropology: From Pigs to Policies* and the summer 2007 issue of *Human Organization* with its special section on "Anthropology and Environmental Policy." There are good reasons for anthropologists to be concerned with environmental policy: it not only affects the land and resources that people depend on for their livelihoods but also have major implications for social justice and human health (Susan Charnley and William H. Durham, 2010).

Realizing the need for a structured research and advocacy to assert case studies and anthropological perspectives on the human rights and environment justice, a committee named Human Rights and Environment (HRE) Committee, which had grown to include some 150 people: mostly anthropologists, and a few sociologists, geographers, and ecologists was formed and they responded with case-study contributions. Johnsten (2010) served as the HRE chair and worked with the committee to draft, compile, and review case submissions that formed the core for annual reports to the UN Special Rapporteur, supporting in small part the broader effort to shape a Draft Declaration of Principles on Human Rights and the Environment.

Through such forums collectively, anthropologists advocated that cultural groups as well as individuals had rights; these rights were being abused by broad processes, such as militarism and development; people have no recourse due to the lack of a viable judiciary and the inability to bring some actors (state governments, transnational corporations, international financial institutions) to a regional or international court where claims can be filed and some measure of remedy provided.

Anthropologists called for national and international governance that recognized the relationship between human rights and environment and that worked towards environmental justice. These demands were articulated in project reports, SfAA (Society for Applied Anthropology) and AAA (Applied Anthropologists Association) newsletter articles, and edited collections in books and journals (Johnston 1992). The Nathan Cummings Foundation grant allowed them to publish and send 450 free copies of a human rights and environment booklet to a global network of environmental organizations, human rights groups, and the foundations that sponsor their work (Johnston 1993).

James Anderson (1973), in review essay called for an Anthropology that is in its embrace of a holistic, systemic dynamic, ecology produces transformative insights and improves the biocultural reality of life on this planet. He called for an Anthropology that has significant influence in how we think about the human environmental relationship, and how we attempt to address the serious problems that threaten survival.

Presently Environmental Anthropology, documents, assesses, and interprets local conditions, and through these efforts seeks to understand and improve the human condition. Through research work and its findings anthropologist influence broad publics and specific audiences with the goal of shaping policy agendas in ways that might forestall or prevent future crises (Hale 2008). For example,

anthropological insight and voices shaping the public understanding of the social context of recent “natural disasters” (Katrina, Sri Lanka, Haiti), drawing public attention to water, public health, and vulnerability in the making of disaster and in the response to disaster (Johnston 2008; and Schuller 2010). Similarly, place-based and comparative anthropological research has led to a widespread engagement in global advocacy and negotiations over environmental justice.

Obviously, environmental anthropologists rarely work at as big and complex scale. But the problems of deforestation, displacement, disease, rights violations, and the rest are often found on smaller scales as well. Given environmental anthropology’s ongoing engagement with environmental problems at multiple scales, and given the rise in policy focus documented here, we urge environmental anthropologists to bring quantitative and environmental data back into their work, whatever its focus. Doing so, we believe, will make us more effective in contributing both to policy and to the solution of environmental problems (Susan Charnley and William H. Durham 2010).

3.5 SUMMARY

Human rights as a philosophical concept refers to the reasonable demands for personal security and basic well-being that all individuals can make on the rest of humanity by virtue of their being members of the species *Homo sapiens* (Shue H, 1980). Indigenous rights have been the special legacy of anthropology and cultural relativism, as well as a target of Anthropological concern in criticizing modernization trends and development practices (Bodley J.H, 1988).

Anthropology as a field has contributed, and continues to contribute, to social policy research, practice, and advocacy in a number of different ways; it has taken on increasing relevance as the world is rapidly being transformed by the process of globalization. The subfield of Environmental Anthropology exhibits a growing engagement with both domestic and international environmental policy.

The concept of environmental justice as a mobilizing force emerged in the US in the last forty years, in opposition to practices that were classified as environmental racism. This is defined as ‘any policy, practice or directive that differentially affects or disadvantages (whether intentionally or unintentionally) individuals, groups or communities based on race or color’. As defined by (Bullard RD. 1996), environmental justice is the principle that “all people and communities are entitled to equal protection of environmental and public health laws and regulations.”

Studies on environmental justice began in the early 1970s, a substantial body of literature was developed that documents the existence of environmental inequalities in the United States (Burch WR. 1976; Freeman MA. 1972; Lave LB and Seskin EP. 1970). These early findings were later amplified by a series of studies focusing on the location of hazardous waste sites, beginning with a study conducted by the U.S. General Accounting Office in 1983.

Environment Justice has travelled a long distance from the time it gained importance. It has gained significance starting with issues of solving problems of residents around the industrial areas to human right and indigenous communities’ right. The legal development of discipline has also travelled a

long distance and we have number of international treaties, International court of justice and international NGO to deal with environmental justice. The subject has gained importance in academic domain also. Anthropology was of the main subject which directly and indirectly contributed to environmental issues from the time gained importance.

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Sample Questions

- 1) Define Environmental Justice? Discuss the evolution of environmental justice as a matter of discourse and the contributions of anthropologists to the debates.
- 2) What are areas that interface with environmental justice? Explain how the human right issues are connected with EJ?
- 3) What are the international laws that protect the right of Indigenous communities? Discuss IPR and TRIP with respect tribes of India?
- 4) List the environmental movements that have taken place in India. Discuss the success/ failure of these movements giving examples. What kind of justice did they get in the process?
- 5) Applied anthropology has a role in dispensing /defining environmental justice, discuss.