PERSPECTIVES TO THE STUDY OF ENVIRONMENT MARXIAN & POLITICAL ECOLOGY PERSPECTIVE

Unit Structure:

1.0: Objectives

1.1: Introduction

1.2: Origin of Political Ecology

1.3: Environmental Critique of Capitalism

1.4: Marx and the Capitalist Raubbau

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1.0: OBJECTIVES:

- ➤ To understand the concept of Political ecology
- ➤ To evaluate the contribution of Marx to Political Ecology
- ➤ To analyse Marxist notion of metabolic rift and its significance in recent times

1.1: INTRODUCTION:

Political ecology is a field within environmental studies focusing on power relations as well as the coproduction of nature and society. Theoretical inspirations are taken from different sources such as political economy, post-structuralism, and peasant studies. Contributions to this field tend to question the status of powerful actors (e.g., governments, businesses, conservation organizations) and what is taken for granted in leading discourses. The place and role of "ecology" within political ecology remains an on-going discussion. Some political ecology contributions engage actively with natural science, while other parts of this literature remain within more social science-based theoretical debates where "ecology" refers to the environment more broadly. - (Benjaminsen and Svarstad, 2019)

1.2: MEANING AND ORIGIN OF POLITICAL ECOLOGY

Political ecology is a critical research field within anthropology and related disciplines that examines how and why economic structures and power relations drive environmental change in an increasingly interconnected world

(https://www.anthroencyclopedia.com/entry/political-ecology). Political ecology emerged in the 1980s as an interdisciplinary field that analyzed environmental problems using the concepts and methods of political economy. A central premise of the field is that ecological change cannot be understood without consideration of the political and economic structures and institutions within which it is embedded. The nature–society dialectic is the fundamental focus of analysis. Marxian political economy provided the initial primary theoretical influence, while the development of post-structural social theory and non-equilibrium ecology infused new ideas and concepts in subsequent years. A range of methodological approaches characterize political ecology research, including multi-scalar analysis, political-economic analysis, historical analysis, ethnography, discourse analysis, and ecological field studies. Political ecology's approach to nature–society relations has explicitly linked capitalist development with ecological change across multiple temporal and spatial scales. The field has been an important source of critical analyses of the social and ecological effects of economic development and conservation initiatives, focusing particularly on the material and discursive aspects of property rights. Recent trends and future directions for research include an expanding urban political ecology theme, critical responses to environmental security theory, an engagement with the philosophies of ethics, and a focus on environment and identity (Neumann. 2009).

The world today is prone to a global environmental crisis jeopardizing a large number of species on the earth including humans and it goes without mentioning that these forthcoming disasters are the consequents of the prevailing capitalist economy. However the vulnerabilities that it creates are largely neglected by spreading a general perception towards projecting "natural capitalism" and "climate capitalism" as rescuer of the environment rather than enemy. The major reason for underestimating the risks is none other than the relationship with "mode of productions". Nevertheless, the whole issue of global environmental and ecological crises can be better understood from the Marks' critique of capitalist enterprise.

1.3: ENVIRONMENTAL CRITIQUE OF CAPITALISM

A common flaw of radical environmental critiques of capitalism is that they bank on nonconcrete views of the classification based on nineteenth-century conditions. Therefore, majority of the historical foundations of environmental issues associated with 20th and 21st century cannot be evaluated adequately. Even Marx's critique of ecology is confined to the historical period of his writings, viz, the viable stages of capitalism, and was therefore incapable to apprehend the crucial features of environmental devastations which were arising with domination of capitalism. It is indeed significant to analyze the ecological critique provided by Marx (and Engels) along with their later counterparts comprising of Thorstein Veblen, Paul Baran, Paul Sweezy, and Allan Schnaiberg.

1.4: MARX AND THE CAPITALIST RAUBBAU

It is rarely documented that Marx's very first political economic essay—"Debates on the Law on Theft of Wood," written in 1842 during his editorship of Rheinische Zeitung—was focused on ecological issues. A large number of peasants were imprisoned for a simple act of gathering dead wood from the forest. Though the peasants were availing their traditional right, they were prohibited due to wide spread prevalence of private property. While observing this issue Marx remarked that how the traditional rights of peasants on land was disregarded in order to protect the owning rights of property holders. Disadvantaged peasants were perceived as the "enemy of wood" because of their traditional rights to gather wood primarily as fuel for cooking and warming their homes contravened the proprietorship rights of private property owners (Marx and Engels, 1975; Franz Mehring, 1979).

Soon after this Marx initiated his systematic research into political economy. It should be than comprehend well that as early as his Economic and Philosophical Manuscriptsof 1844 he was already concentrating on the issue of primitive gathering, i.e., the progress of capitalist development led to withdrawal of the peasantry by alienating them from the land. He mentioned the "Capital" to be the precondition for capitalist's mode of production and it enduring base as the root for the advent of contemporary proletariat.[3] Capitalism originated as a system of infringement on nature and community wealth.

Marx has propagated the critique of political economy through differentiating between use value and exchange value. In his opening pages of "Capital" he has mentioned about both and makes a reference to exchange value dominating the use value in later stages. Use value was in general connected with the necessities of production and with the basic human relation to nature, i.e., fundamental human needs. Exchange value, on the other hand, was concerned with the quest of increasing the profit. This resulted in incongruity between capitalist production and natural production.

Marx explained this paradox as what was later known as Lauderdale Paradox (named after James Maitland, the eighth Earl of Lauderdale 1759–1839). Lauderdale in "An Inquiry into the Nature of Public Wealth and into the Means and Causes of its Increase" (1804) described public wealth as comprising of use value which existed in plenty with nature like air, water etc. whereas the wealth of the capitalists was the direct result of exchange values which necessitated inadequacy. Thus, the material possessions of the rich and the capitalists are a direct outcome of destruction of public wealth and assets. Therefore, monopolization and leveraging charges on water which once was generously available for fee is the measure to increase the asset of the rich at the cost of public wealth.

In the spice island Dutch colonists were known to burn all the "spiceries" which were produced further than their expectations during what they called as fertile period. They would pay the inhabitants to accumulate the

young buds and green leaves of nutmeg trees to dispose of in Europe with such a profit as they think sufficient.

The planters in Virginia by lawfulrepresentation burned a certain portion of their yields to maintain the price. Thus, it is clear that the personal interest lead person to take advantage of the situation and that nothing but the impossibility of general combination protects the public wealth against the acquisitivenessof private greed (Maitland; 1819). Marx was interested in learning the paradox between what Lauderdale described as use value and exchanged value in capitalist system. The capitalist mode of development relies on the concept of waste and destroying the natural resources (Marx; 1964). Through the process of distribution and competition the public wealth is lost at the personal gains of the private riches in the society (Marx, Capital, vol. 3, 180).

The capitalists needed to magnify and expand to maintain their share of wealth for its survival. Thus, it was mandatory for capitalist to continue accumulation of wealth through relentless revolutionization of product through displacing and alienating the labour and encouraging revenues and profits for increasing their share of profit.

Marx relying on the work of German chemist Justus von Liebig, argued that transportation of food to new industrial and urban centers with huge population robs all the nutrients from the soil. Liebig termed this as "Raubbau" or the robbery system.

Marx believed in Raubbau causing "an irreparable rift" within capitalist society in breakdown amongst human being and the soil— "a metabolism prescribed by the natural laws of life itself"—requiring its "systematic restoration as a regulative law of social production."

However, in case of industrialization the real face of capitalism is exposed which primarily relies on exploitation of workers and the natural nutrients of the soil.
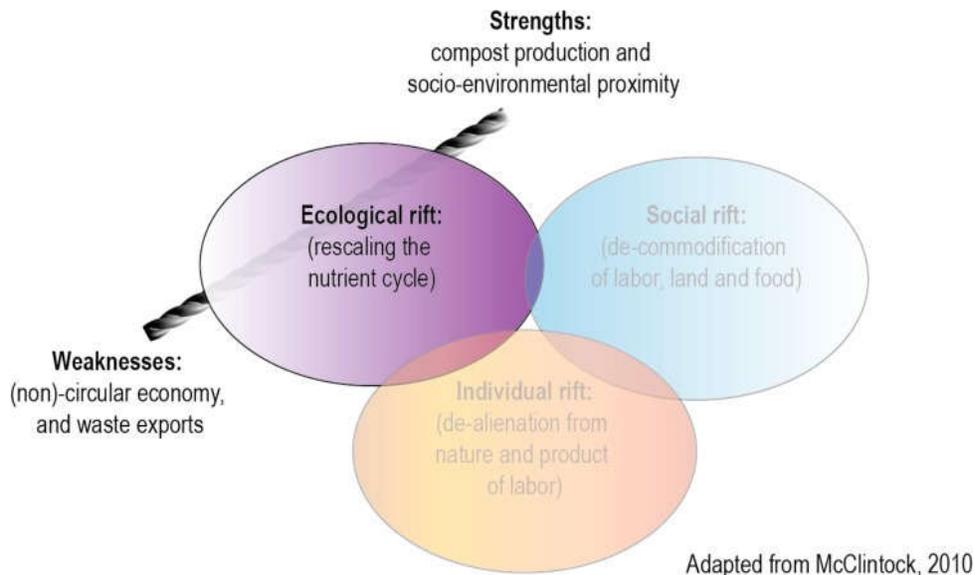
In the industrialization of agriculture, he suggested, the true nature of "capitalist production" was revealed, which "only develops…by instantaneously undermining the original sources of all wealth—the soil and the worker."

1.5: MARXIST CONTRIBUTION TO ECOLOGY AND ENVIRONMENT

The most significant contribution of Marx to ecology and environment can be perceived through Marxist theory of "Metaboloic Rift". It is a term used by Marx to describe the changing relations between human and nature on account of capitalism. (https://mronline.org/2020/04/02/what-is-the-metabolic-rift/) In his book Capitalism in the Web of Life: Ecology and the Accumulation of Capital uses Marxian (and other) he offered a broad depiction on role of capitalism in organizes nature (2). 9V)

Adapted from McClintock, 2010

https://www.sciencedirect.com/science/article/abs/pii/S0016718518303208

Moore shaped his theory of ecological transformation drawing from the Marx's concept of Metabolic Rift. Foster, J. B. 2000. Marx's Ecology: Materialism and Nature. New York: Monthly Review Press (Moore, 2015).

The metabolic rift involves the cycling of nutrients. In a traditional society the agricultural products were used locally and the surplus and the left-over waste was reprocessed into the soil. The population was considered to be a part of a larger structure. Marx extended his concept of metabolic rift to incorporate the relations amongst human beings.
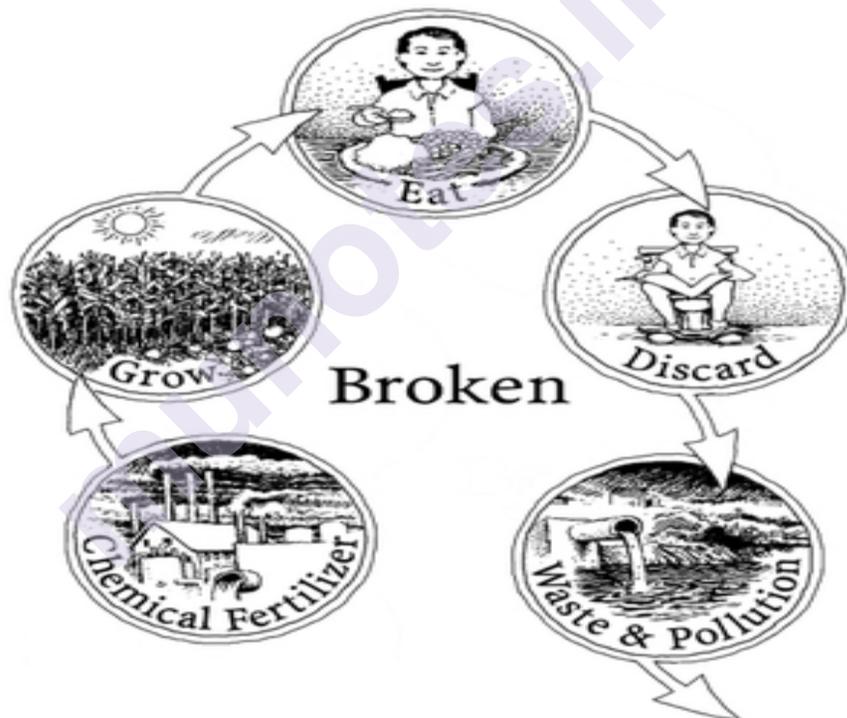

https://inhabitingtheanthropocene.com/2018/02/28/environmental-crises-and-the-metabolic-rift-in-world-historical-perspective/

According to Marx the metabolic rift occurs when consumption of a product takes place at a remote distance from the place of production, and the surplus, the left overs and the waste is not recycled into the soil there by affecting the fertility of the soil in the long run. Marx has cities specifically in mind here. In the words of Marx:

Capitalist production, by collecting the population in great centres, and causing an ever-increasing preponderance of town population, on the one hand concentrates the historical motive power of society; on the other hand, it disturbs the circulation of matter between man and the soil, i.e., prevents the return to the soil of its elements consumed by man in the form of food and clothing; it therefore violates the conditions necessary to lasting fertility of the soil. (Marx, 1976).

As a consequence, the products produced in the rural and agricultural areas are transported to urban centers and the waste is dumped into the sea which is the prime reason for degradation of the soil.

https://inhabitingtheanthropocene.com/2018/02/28/environmental-crises-and-the-metabolic-rift-in-world-historical-perspective/

Marx's critique of ecology can only be understood in the context of critique of capitalism. His concept of labour and production itself reflected the metabolic relationship between human beings and nature. Thus his ecological critique propagates a sealed metabolic cycle amongst human beings and nature rather an open crack under capitalism. This helped him to employ his concept in comprehending economy and society (Marx and Engels, 1975).
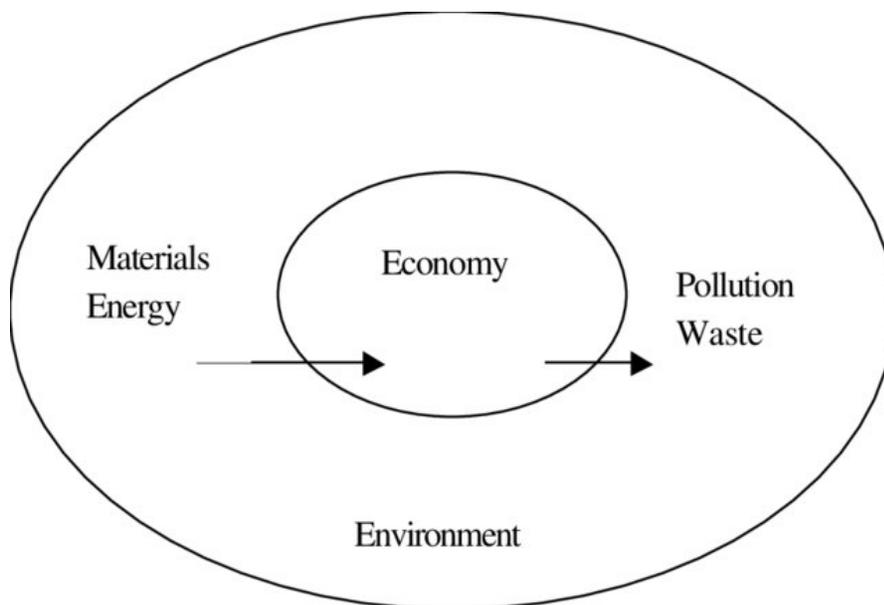
Marx's critique of ecology went beyond discussions. His examination of environment along with Engels provided an account on the important subjects like: deforestation, desertification, climatic changes reckless exploitation of fossil fuels and natural resources. (Bellamy, 2000)

It is vital to understand change in the consumption patterns and consequently alteration in the use value of the product under capitalism. Marx, Engel and their followers did believe that the beneficial use of a product under capitalist enterprise is pushed at the back will sole intentions of extracting more and more profits. Inherent in this opinion was the concept that use values could be subordinated to exchange values and the structure of consumption to the forces of production. However, Marx hasn't provided any accounts for change in process of production and consumption resulting in technological changes.

1.6 CONCLUSION

Thus, the Marx's classical ecological critique of capitalism clearly outlines the fact that we are constantly involve into a process of extracting and extinguishing more and more natural and public wealth day in and day out. Never the less it is being done to chase the rich and the elites who play a significant role in shifting the focus from consumption needs to accumulation of surplus leading to harsh and harmful effects.

The 19thC Marxist metabolic rift in context of human beings and the nature is resulting in ecological rifts and breaking the boundaries between human beings and earth. It is important to note that recently the "structure of production" rather the "scale" is accountable for the contemporary description of "Raubbau".

It is the momentous to battle the out-and-out negativity of the capitalist system of production and altering it all together to attain the concept of equality and ecological sustainability anticipated by Marx.

1.7 QUESTIONS

➢ Examine in detail the political ecological perspective in understanding the environment.

➢ Critically evaluate the Marxist contribution to political ecological perspective.

➢ Illustrate on Marxist notion of Raubbau and metabolic rift with relevant examples.

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GENDER PERSPECTIVE & GANDHIAN PERSPECTIVE

Unit Structure

2.0 OBJECTIVES

- To introduce the readers to the various perspectives on development

- To help the readers to understand the relationship between the nature and development

- To help the readers explore the impact of development on Nature and Women

- To help the readers analyse the impact of development in contemporary era

2.1 INTRODUCTION

The debate and discussion regarding Women and Development has gained momentum during the last few decades. This theme has assumed importance because two major areas of research are concerned: the status of women and economic development. Recently, development has been viewed as a cure for the problems of less developed countries. It has been advocated that once a modern infrastructure is created, the economy will develop bringing about a solution for all ills and ameliorating the lives of people. In spite of this view, it appears that in most developing countries and among all classes, development has brought little relief to the conditions of women, especially in relation to that of men. The concern

about women in relation to development has led to several research projects being undertaken, seminars and conferences being organized at national and international levels. All these have pointed towards a need for a multidimensional definition of development. This must include political, social and human aspects along with economic aspects of development. It is also seen that development has widened the gap between the incomes of men and women and has had a negative effect on the lives of women. This is largely due to a lack by development planners in recognizing women's dual roles and the continuing useof old stereotypes as a base for development plans. The concept of women and work also needs to be understood more comprehensively, especially the changing patterns of women's participation in the labour force as development takes place. In this chapter, we will look at some theories on Women and Development, the pioneering views of Ester Boserup and Maitreyi Krishna Raj on the subject, Women's relation to development and development indicators and women. Theories: Women and Development: Women secondary status in modern society and their subordination to men have been traced to the beginning of history and culture. Today, as societies are following the path of development, it is seen that the position of women has not improved obviously and significantly. The benefits of development have gone mostly to the male population in society whereas it seems that women have been adversely affected by it.

2.2 THEORIES ON GENDER AND DEVELOPMENT

The role of women in development and the impact of development on women are undergoing serious consideration. While this points to the need for new theories, methodologies and research, it is necessary to understand and analyse earlier intellectual traditions and perspectives. We shall therefore briefly outline some theories regarding development and its relationship with women. Some of these theories are:

(i)   Cultural dualism used by Simone de Beauvoir to look at the position of women?

(ii)   Social evolutionary theory which gave rise to both modernization theory and the Marxist analysis of stages in the development of capitalism;

(iii)   Developmentalism, which identified obstacles to women's participation in national development; and

(iv)   Dependency theory which examined the nature of development and underdevelopment.

(I) Cultural Dualism The theory of cultural Dualism may be attributed to Simone de Beauvoir who uses it to explain women's secondary status in society. According to her, the origin of women's subordinate status lies partly in her relationship to nature and partly in nature's relationship to culture. Human societies have a universal opposition between nature and culture. Human beings, by their very constitution, make great

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efforts at overcoming the limits of nature through culture. In the process of attempting to control nature man is more free than woman who is naturally restricted in this by her tasks of reproduction and sustaining life. At the same time, man cannot live without woman, just as he cannot do away with nature. As a result, man regards woman with contradictory and opposed feelings. He reverses her and also degrades her. He wishes to control her but also refrains from completely quashing her creativity. In some cultures, such as the Hindu culture, this ambivalence is all prevalent. In some others, women do play a dominant role in regulating nature and sexual behaviour. In evaluating such dualistic theory, it must be accepted that there are some universals in the social and cultural position of women butting across almost all known societies. However, such atheory does not throw much light on the question of women and society, as it pays little attention to differences of fundamental patterns of human existence nor is it concerned with change.

(II) Social Evolutionary Theory: The Social Evolutionary theory has viewed societies as undergoing progressive change as a result of changes in population balance and in increasing division of labour and differentiation. The question of changing status of women and their roles has also been perceived from the Point of social evolutionary theory. According to this theory, societies range from simple, where some persons perform several tasks, to complex societies where there is higher level of technology, formal institutions and greater occupational specialization. By characterizing societies on the basis of division of labour, social evolutionary theory has tried to explain inequality both among and within societies. As specialization increases, each labouring group becomes more specialized and productivity also increases. Thus, societies moving toward specialization have a higher level of productivity. And, simple societies with less specialization remain less productive and therefore poorer. Within complex societies those groups performing less specialized tasks are also less productive and 'therefore disadvantaged. This is how inequality is explained by the social evolutionary theory. Extending this argument and applying it to the sexes shows that since women are normally found to be relegated to backward sectors of the economy, they suffer inequality. The same argument has been used to explain the effect of social differentiation on political participation. With increasing differentiation between domestic tasks and those of politics and governance, woman was relegated to domestic chores and kept out of participation in public decision making. The subordination of women increased as society became more complex with the growth of a specialized state, professional armies and bureaucracies.

(III) Developmentalism: The developmental approach has perceived that modernization has affected men and women differently and seeks to locate the causes preventing women from participating in the development process. The developmental perspective basically views social change differently from the modernization theorists. This difference can be found in three basic ideas:

(i) Society is not seen as a single unit so that changes in one area will generate changes in other areas. Therefore, technologies introduced to raise productivity as part of development planning does not benefit women as it does men.

(ii) There are contradictions in the process of social change thus women's exploitation may increase if only employment is increased and not wages and working conditions. (iii) Conscious policies are necessary to move society in a particular direction. In this, external forces and national leaders play a positive role. The failure to implement a development programme has led to-developmentalists taking a modified approach to the problem of women in development. They feel that it is important to look at women as rational decision makers. They point out that by concentrating on increasing the value ofthe GNP, the full production of a society is undervalued and the question of distribution is ignored. The contribution of women in hidden sectors is not taken into account. This involves neglect in non-market work done in households, subsistence agriculture and the informal labour market, all of which is done more often in women than men. It has also led to policies which impede its productivity. Women suffer an increasing narrowing of social roles and capacity to generate income as little attention is paid to upgrading non market work. Ester Boserup and others have proposed expanding the GNP to include women's work as a strategy to include assessment of their costs in the formation of development goals.

(IV) Dependency Theory: Dependency theory developed as a result of the dissatisfaction of the developmentalists's explanation of poverty and backwardness in Third world countries. Their investigation pointed to constraints on development in these countries caused by international forces. Even after formal colonization declined, former colonial powers controlled Third World Economies in a new garb of neocolonialism, The backwardness of these countries was perpetuated through economic dependence on industrialized nations. As regards women, the dependency theory disagreed with conservative Marxists. While the latter argued that power relations between men and women cannot be understood except in the context of the mode of production, dependency theory points out that how the mode of production affects Third World women is part of an international system based on dependency. The classic Marxist explanation that women's subordination is due to women's relegation to the domestic economy and denial in the opportunity to participate in production of goods for exchange in the large society has been belied by different case studies. Dependency theory explains that if industrial capitalism places women on the edge of the economy. Third world capitalism makes their position even more difficult. Capitalism in dependent nations finds women holding a disproportionate number of jobs in sectors such as agriculture, domestic servants, street vendors and prostitutes and the like, in short, the informal labour market. The significance feature of the dependency theory regarding women is that it does not distinguish between socially productive and domestic work, All women's work is taken as one and considered uniformly. It does however

(ink the role and status of women to the economic position of the whole society which is ultimately determined by the international system.

Check Your Progress

1. Briefly explain theories on women and development

2.3 Women and Development Ester Boserup: The study of women and Development owes a great deal to Ester Boserup whose contribution in this area has been very significant. Through her pioneering work 'Women and Development' she first drew attention to how the process of development and related social change was affecting the lives of women. She states that status of women and economic development are two significant areas in which research is needed and is rightfully being conducted especially in the Third World. Studies on women in these countries has shown that the problems of women in the labour force are peculiar. Women are over burdened with work while their efforts are partly wasted because they have less training and even more primitive equipment than the male labour force in their communities. This brings about a need for more research to improve the working conditions of women in the Third World, especially women in domestic work and in rural areas and to provide them with better access to the labour market. Boserup states that there has been objection to studies on women and development as they largely stress on the Problems of labour market and productivity which is not seen as a major problem confronting women. Studies show that women in developing countries are actively involved in agriculture, crafts, trade or construction and support themselves and their families by such work. In spite of being wholly engaged in labour activities, their social status continues to remain low. Therefore, the study of women's status especially in relation to male family members is the main issue and should take priority over labour market studies. However, in Third World countries, the subordinate position of women derives from legal or customary rules which women are unable to change. As a result, economic self-support exists along with interior status. In some countries important changes have taken place in the legal status of women by giving women the right to divorce, guardianship of her children in the case of divorce or widowhood. But these have not brought about a corresponding change in the real family status of women. Economic change is also occurring in most developing countries. This change however is making it more difficult for women to support themselves. Women's work is mostly in the informal sector or in the household. If women do not have opportunities to earn money their dependence on men will increase and their social family status will -, decrease in spite of their legal dependence. Studies on women and development must be integrated with studies of the developmental process itself. In this process, some groups get a large share of development benefits while others may become victims of development because their products, activities or skills may be replaced by newer, more productive or efficient activities. Both men and women may become victims of development but it is mostly women who suffer from the adverse impact of development. This happens because women find it more difficult to adapt to new conditions because of the following reasons.

(i) They are less mobile than man due to family obligations; (ii) traditionally their choice of occupations is more narrowly limited; (iii) they usually have less education and training; and(iv) They face sexual discrimination in recruitment.

Also, in developing countries, a much larger percentage of the female labour force is involved in traditional occupations which are gradually replaced by newer enterprises in economic development. This generally points to large numbers of women in Third World countries being adversely affected by development. The speed of modernization and economic growth in the different Third World countries is at great variance. The occupational opportunities available to women are related to the differences in natural resources, the stock of human and physical capital, foreign relations, and government policies. In countries where economic growth is rapid, attitudes toward women's work outside the home are also changing swiftly and women are joining the labour market, Conversely, in countries where economic growth is slow and population growth is rapid, women from economically weaker sections are forced into already crowded occupations such as market trade and domestic service, to help support their large families. Therefore, in order to help women, improve their status in developing countries, the patterns of development to be applied must take into account the economic conditions, institutional patterns and attitudes to women's work in that specific country. It would make little sense to merely apply the development models, either 'Western 'or' alternative' to the developing country.

Check Your Progress

2. Summarise Ester Boserup's view on Development

2.4 WOMEN AND DEVELOPMENT MAITREYI KRISHNA RAJ

Yet another perspective on women and Development has been put forward by Maitreyi Krishna Raj. According to her, the process of underdevelopment and development has had much significance for women. The impact of development on women's status in society can be understood only if one accepts the fact that the oppression of women is completely linked to the exploitative world system of which development is a part. She asserts that real development means ending the exploitative system and reducing the vast gulf between the rich and poor nations. The adverse effect that development has had on women can only be altered if the nature of development itself is changed. The world Conference of the U. N. Decade for women held at Copenhagen in 1980 has defined development as follows, "Development is here interpreted to mean total development in the political, economic, social cultural and other dimensions of human life as also the development of economic and other material resources and also the physical, moral, intellectual and cultural growth of the human person. The improvementof the status of women requires a change in the attitudes and roles of both men and women.

Women's development should not only be viewed as an issue in social development but should be seen as an essential component in every dimension of development."

Development and Women's Dependency: Maitreyi Krishna Raj states that the process of development has in fact led to underdevelopment and greater dependency of women. This is especially so in the case of developing countries such as India. In pre-colonial and pre-industrial and pre-capitalist India there was advanced technology and adequate resource management to provide people with a simple way of life. There was also a great deal of technology transfer from East to West which has been completely reversed today. Today, India has a small modern and developed sector of the economy which is the organized sector while the larger sector remains scattered in small units of production called the unorganized sector. Women, due to their subordinate status and special social responsibilities are mostly drawn into the unorganized sector. Developmental processes have also destroyed the earlier balance with nature, loading to environmental degradation creating special problems for women. Due to pressures of foreign trade, women are used as cheap labour in export-oriented industries, Krishna Raj further reiterates that the political economy of women has been subjected to the continuing ideology of patriarchy. This ideology perpetuates the unequal, discriminatory and oppressive relations between the sexes. These relations derive their strength from a material base through production whereby the woman's role in labour and family leaves her in a state of dependence, The discrimination against women and their subordination is further encouraged in India through socialization, customs and practices. The model used for development has not tried to change these structures and provide a base for involving women in developmental participation. The continuing structures of male dominance has prevented women from receiving any benefit of development. Moreover, commercialization imposed on traditional values has brought tragic consequences for women. Increasing violence against women and general devaluation of women through various forms of exploitations are the expressions of these new disorders. The older anti-social practices against women such as sati, child marriage or female infanticide have been replaced by new ones such as bride burning for non-fulfillment of dowry and female feticides. Discrimination against women has been persistent despite and even because of development. This affects women, of all classes, but more so poor women who have little access to social resources essential for effective human existence; education, health and employment. They are also denied access to power and authority and thus deprived of the opportunity to speak for themselves. Changes brought about by development have increased the contradictions for women though their forms vary in different classes and cultures. Strategies for improvement in the position of women adopted until now have had little impact because they do not attempt to change the conditions that causesubordination of women but simply aim at alleviating some of the glaring negative expressions. The alleviation too have not been effective as is shown by the

increasing marginalization and pauperization of women in the country and the increasing violence against women.

Check Your Progress

3.   Explain Maitrey Krishna Raj's view on Development

2.5 WOMEN'S RELATION TO DEVELOPMENT:

Development is today accepted as meaning the creation of conditions by which the potential of all human beings can be fulfilled. This of course includes women. However, It seems that development has not only missed women but has also hurt and exploited them in the process, Women have yet to become partners in the development process. Development literature from developing countries in Asia Africa and South America point to two trends,

(i) that disparities exist in opportunities for survival and growth between men and women, (ii) that development is bringing about new forms of oppression and subordination of women, the status of women still remains secondary. She is essentially a dependent being suffering exclusion from decision making and devaluation of her personality. The emancipation of women has been hindered by patriarchy and make domination. This is seen in society's refusal to recognize women's contribution and independent identity. Women support a large part of the world economy by their services in the home and the community. Women have always worked and been part of the economy though much of their work is not included in the definition of work. Women's work, is plagued by low status, low pay and low skills. For reasons of bias and prejudice in statistical and conceptual analysis, much of the work performed by women has been officially described as non-economic activity. A glaring discrepancy is seen in the fact that though women are the main growers, providers and distributors of food, it is the men who always receive more food than women, Women, by are excluded from ownership of land and also from access to technological developments. Development has yet to draw women equally into its process. Development Indicators and Women: Women differentially affect the process of socio-economic growth and are differentially affected by the changes brought about by this development. Conventional measures and indicators have failed to adequately capture both women's contribution to development as well as the impact that development has on women. Therefore, it is necessary to have gender sensitive development indicators. In recent years the HDI (Human Development Index) has become a development indicator of choice. The HDI has threecomponents, namely, adult literacy, life expectancy and purchasing power parity. Of the three, the first two are non-economic indicators. The use of the HDI in ranking countries has shown the huge gap that exists between men and women, everywhere, particularly in education. The inequality of access at all levels of education (primary, secondary, 58 university) is only one discriminatory factor against women. As early as 1980, there was a demand that women's work should be counted and included in GNP (Gross National Product). This

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was raised at the international level in Copenhagen during the mid-term evaluation of the LIN Decade for Women. During the last twenty years, several attempts have been made to include women's work in the calculation of the GNP of various countries. However, the prerequisites of these calculations were focused "on non-economic activity" which includes seventy five percent of women's work not recognized in official statistics. The World Bank's World Development Report of 1991 defined economic development as "a sustainable increase in living standards that encompass material consumption, education, health and environment." The report also published nine indicators, including the GNP in which there was an attempt to desegregate data by sex. All other development indicators, namely, education, labour, force participation, access to health, number of seats in parliament, had data desegregated by sex over a period of twenty years for a large number of countries. By using these indicators women were included for the first time in the 'parameters of development.'

2.6 GANDHIAN PERSPECTIVE

M.K Gandhi has showned his concern for the environment even before the the international conferences like the Stockholm Conference of 1972 or the Rio Earth Summit of 1992. His words, "The Earth has enough resources for our need but not for our greed." are highly relevant today where we have been facing scarcities for almost all our basic needs just because we have ended wasting a lot more rather than conserving them for future. In the words of Pravin Sheth, he was the "World's early environmentalist in vision and practice" (Pravin Sheth, The Eco-Gandhi and Ecological movements

(http://www.mkgandhi.org/environment/environment.htm). His idea of Hind Swaraj, was a signal against the erroneous model of development that would lead to consumption of resources, something the world is highly concerned about today.

With the Industrial Revolution, everything became mechanized and human life became highly materialistic. One cannot deny the fact that it has led to a better standard of living by material pleasure, but at the same time, it has caused a massive loss to nature. 'All nations' rash and boundless pursuit of industrialisation is now posing significant issues for the very existence of not only man, but all living things' on the planet. Mankind has given rise to environmental problems like deforestation, pollution, global warming, depletion of ozone layer and natural resources by activities like generation of hazardouswaste, E-waste, rapid and over utilisation of resources, harming each and every species on the earth. Gandhi in what he called it as a prophetic tone, stated that it has become inevitable to stop causing further damage and mutilation of the planet and to reduce the over-consumption so the pressure on the environmental resources can be reduced at the global level.

According to Gandhi, development did not mean increased consumerism and materialism, but for him, the term development coincided with self realization, growth of non-violence and increased morality. For him,

Materialism was a hurdle for self realization as it only increased greed. Gandhi was heavily impacted by Adolph Just's book "Return to Nature," which solidified his belief that if a human wish to live a happy and fulfilled life, he must share it with all living beings, including birds, animals, plants, and the environment in general. What humans receive from nature must be repaid to her. He despised any forms of violence directed towards animals or any other life forms. Gandhi's understanding of the interconnectedness of all life was articulated in this way. "I do believe that all God's creatures have the right to live as much as we have," he wrote in Harijan in 1937.

He referred to "advaita" which means no-duality and for him, unity of humans with all the life forms was essential. He believed that violence or himsa against any living thing is violence against self and this is the biggest hurdle for self realisation.

Gandhi was unquestionably a visionary who foresaw the problems of modernity and industrialisation. He was an early critic of modern industrial civilisation's dehumanising aspect. The re-discovering of Gandhi's warning of "industrialise or perish" must be considered in the perspective of new value orientation and the fight for human existence endangered by environmental and ecological crises. For him, the modern civilisation

and industrialisation created chaos in the society. He wrote in Young India (20-12-1928, p.422), 'God forbid that India should ever take to industrialism after the manner of the West. The economic imperialism of a single tiny Kingdom (England) is today keeping the world in chains. If an entire nation of 300 million (India's population in 1928) took to similar economic exploitation, it would strip the world like locusts. He goes on to say that "to create India like England and America is to exploit other races and regions on the planet." So far, it appears that the western nations have partitioned all known races outside of Europe for exploitation, and that there is no new world to uncover; what will become of India's attempt to imitate the west?'

Gandhi was a staunch believer that India's villages are where it lives. To him, destroying its village's culture and heritage through technologies, equipment, and industrialization is a mistake. He cautioned young people to never be seduced by modern modern civilisation glamor since "its flaws are well acknowledged, but none of them are irreversible." As India is the inheritor of rural civilisation, Gandhi called for village life as the aim. He condemned the lifestyle where livelihoods and simplicity are uprooted and machinery takes over. He favoured use of Charkha, a simple machine which requireshumans to operate, it did not take away the livelihood and did not render people jobless. On the other hand, he opposed the huge machinery which replaced humans with machines, leading to less requirement of labour, rendering people jobless. According to Gandhi, Urbanisation is exploitation of resources, causing death of villages and villagers.

In his work Hind Swaraj, adopting this contemporary civilization and way of life makes one's spirituality and morality irrelevant. He was concerned that "neither morals nor religion are taken into account by modern culture." In the guise of morality, immorality is frequently taught. Civilisation strives to improve bodily comforts and fails terribly in this endeavour '. As he saw it, civilisation is the manner of behaviour that points man in the direction of duty; to observe morals in order to gain mastery over our minds and passions.

Gandhi was opposed to the idea of industrialised towns, where material luxuries and significant use of machines are prevalent. He was adamant about developing the community and instilling in the residents the value of health, hygiene, sanitation, and education in order to make a good difference in their lives. His plan for development includes eradicating poverty in communities through promoting village self-sufficiency, small-scale industry, handicrafts, and the exploitation of local resources. His model on development, depends on using renewable sources of energy which are natural, causing no pollution and harm to nature. He urged to reduce waste generation, which is done by industrialisation. According to Gandhi, Industrialisation will not create jobs for millions, but will continue to create pollution and cause damage to the entire ecosystem. Gandhi advocated for the development of thousands of cottage and village businesses to provide an outlet for the people's creative abilities and resourcefulness. This would aid in resolving unemployment issues while also providing work for the unemployed and increasing the nation's wealth. The growth of the village would also halt the enormous migration of villagers to cities in search of work, reducing the strain on urban resources. We can witness how the mass migration from rural to urban areas has not only contributed to the pollution, but also has caused a struggle for survival, where thousands stay on roads or unhygienic slums, there is struggle for basic resources.

According to Gandhi, Nature is not for exploitation, but rather it is a source of inspiration. Unrestrained development has extracted natural capital—water, land, forests, and so on—inefficiently, resulting in a series of environmental crises such as ozone layer depletion, pollution, floods, droughts and so on. As a result, man has embarked on a global environmental devastation operation that has attained catastrophic dimensions. Man has chosen violent ways to take abundantly from nature, to express it in Gandhian ideology and philosophy. Gandhi made a passionate plea to males to stop exploiting women and inflicting violence on them. All living things, including nature and natural resources, are affected. Gandhi was opposed to tampering with nature and the ecological system that ensures everyone's health and reproduction. In the "rat-race", humans have exploited nature to the extent that there is always a fear of survival.

Check Your Progress

4.   How did Gandhi view Industrialisation and Urbanisation?

2.7 SUMMARY

Both the Gender Perspectives and Gandhian Perspectives on development focus on how the process of development has led to the oppression and exploitation of nature. Women, being close to nature, are affected significantly due to its exploitation. Only if development helps and contributes to the wellbeing of all the genders, it canbe seen as beneficial.

Urbanisation and Modernisation has killed village life, led to mass migration, making the urban areas congested and leading to pollution, thus harming nature. Gandhi opposes Industrialisation where machines rule over mankind, rendering millions jobless and create a struggle for survival by harming nature. This is highly relevant in today's world where we have forgotten the importance of nature and by ourselves have contributed to the disasters that are threatening the entire ecosystem.

2.8 QUESTIONS

1. Elaborate on the theories of Gender and Development.

2. Explain the views of Maitreyi Krishna Raj / Ester Boserup on development

3. Elaborate on the Gandhian philosophy on Development. Do you agree with his philosophy and how it relates to our modern world?

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3

RECENT TRENDS – RISK SOCIETY PERSPECTIVE OTHERS

Unit Structure

3.0 OBJECTIVES

1.   To understand Risk society
2.   To learn about Risk society multiple applications in different fields specifically Environment.

3.1 INTRODUCTION

In this chapter we will learn about the meaning of Risk society and its various dimensions. The topic is very important because it is contemporary, relevant and it can very much applied in our day to day lives and society at large. This topic would be useful for environmental studies, to understand the theories at large, to understand the impact of technology on globe at large and individuals too. Environment has been one of the most neglected area, in this chapter we will also look into how Environment is at Risk.

There are various kinds of risks in a society like natural risks, technological risks, real and socially constructed risks, invisible, visible and virtual risks, actual and perceived risks, borderless risks etc[i]. In fact, we have entered into an age where risk is innumerable – there exists uncertainty in terms of ecological balance, financial, threats from terrorists etc[ii].

Every day in our lives we take certain risk in terms of career choices, relationship choices, little decisions while buying new food or even major decisions like moving to another city for tourism or for permanent settlement. Though every one may not be taking the same risk but some degree of risk every individual take in their lives. In terms of females they get married and go to a new household specially if it's an arranged marriage then it's a risk too as she may or may not be knowing anyone in the new family. We take risk of trusting over friendships, businesses, jobs etc. Politicans also take big decisions and which can put a country at risk at large. With Information Technology the risk has widened to a large extent. Starting from the simple society of hunting and gathering to that of Information Technology era, digitalization the amount of risk human beings is taking at present has widened and grown ten-fold. Some countries have reached at times, where we are even trying to find another alternative for settlement than earth like Mars. This chapter is more of theoretical in nature, but the theory of Risk Society is very useful and one can apply it in one's daily observations of life too.

3.2 MEANING OF RISK

Risk is a generic concept that denotes fear or the threat of something bad happening. According to James Neill, "risk" generally relates to the possibility of losing a "valuable resource." M meaning of risk, may also refer to a chance or possibility ("risk of exposure"), a result or impact ("the risk of smoking"), or a dangerous condition ("a hazardous waste facility generates a risk"). On the basis of involuntary or voluntary events, linguistic interpretations of the term "risk" have evolved. For example, "danger" is frequently used to represent an unintentional incident, but "peril" might be used to indicate an intentional one. Despite its broad usage, no single definition on risk and it can claim to be universal, and there is little chance of a common understanding arising without some deliberate effort to reach an agreement.

3.3 UNDERSTANDING RISK SOCIETY

One of the most ambitious, broad, and contested social theories of risk is the risk society, established by two sociologists Ulrich Beck and Anthony Giddens. This theory of risk society has been referred in two books by Ulrich Beck that is – Risk Society – Towards a new modernity (1992) and World Risk Society (1999). While Giddens writes about Risk society in the book – The Consequences of Modernity, Modernity and self identity – Self and society in the late modern age (1991).

A risk society is one in which we are increasingly living on the edge of a high technological frontier that no one fully comprehends and which produces a wide range of possible futures. Risk society has its roots in two key shifts that are still impacting our lives today. The first transition is the end of nature, while the second can be characterised as the end of tradition. The end of nature does not imply that the natural environment would vanish. It implies that few, if any, components of the physical universe remain unaffected by human influence.

Nature's end is a recent phenomenon. Of course, it's impossible to pinpoint the exact date, but we can approximate when the end of the world will occur. It occurred as people's anxiety about nature shifted to a different set of concerns. People have worried about what nature could do to humanity for hundreds of years — earthquakes, floods, epidemics, poor crops, and so on. We stopped caring so much about what nature could do to us and started worrying more about what we have done to nature at some point in the last fifty years or so. In a risk society, the transition is a crucial point of entrance.

We no longer live our lives according to fate; a phenomenon Ulrich Beck refers to as individualisation. A civilization based on nature and tradition is fundamentally different from earlier forms of industrial society, which served as the foundation for the creation of core intellectual traditions.

A risk society is not inherently more un safe or harmful than other social structures. It is useful to trace the origins of the term 'risk' in this context. Life in the Middle Ages was dangerous, but there was no concept of risk, and no concept of risk appears to exist in any traditional society today[iii].

 Risk society is a grand theory of society, concerned with the transition from contemporary industrial civilization to a new period marked by technological dangers. Ulrich Beck's phrase of risk society is seen as developing from that of World War II. Beck is especially concerned with new forms of risk that have emerged—or may emerge in the future—as a result of human behavior.

According to Beck, 'the nature of the dangers we face now, has changed—they have been 'de-bounded' in terms of spatial, temporal, and social elements. Risks are no longer bound by regional or even national borders, but are frequently global in scope; risks may also have long latency periods, implying that the actual cause of particular threats may lie in the distant past or, as in the case of nuclear material, may remain with us for thousands of years; and, as a result of these spatial and temporal uncontrolled, assigning responsibility in a legally relevant manner has become difficult.[iv] As pollution, contamination, and other by-products of manufacturing are caused by civilization, rather than "natural" risks that have historically been examined by hazards specialists.

Risk to one's health from the environment is regarded as a social construct.

The social structures/systems through which choices are made have grown increasingly significant as we become more conscious of science's limitations. As a result, our foundational sense of safety in the world has been broken, raising questions about society's long-term ability to protect us (e.g., the welfare state, individual insurance).[v]

Beck's applications of the concepts in Risk Society (1992) in the disciplines of work and political economy have affected scholarly debates on unstable labour and globalisation. In the Brave New World of Work, Beck outlines the ramifications of a transition away from class-based social relationships toward a society organised around a risk society

(2000a). He locates the historical class-based struggle between production factors inside the bounds of nation-states, noting that multinational corporations are increasingly operating without the constraints of organised labour, or becoming 'deinstitutionalized...'

The Brave New World of Work (2000a) fundamental's premise is that the emergence of dangerous work is due to a global risk society, in which labour is being replaced by conditional and flexible working biographies built by individuals in constant stages of transition and self-reinvention. Beck suggests that a "global citizen" civic society be developed to organise labour and human actions around transnational vested interests rather than nationality[vi].

Check your Progress

1. What is your view on Risk society?
2. Explain – Risk and Culture in few lines

Let us now look into Risk from different view points

3.4 REFLEXIVE MODERNIZATION

Beck claims that modernity takes place through unplanned and unforeseen phase that is pushing it to confront its own model's foundations and boundaries. In his words, modernization has become "reflexive." Beck's concept of reflexive modernization (Beck, Giddens, and Lash 1994) proposes a "radicalization" of modernity in which individualization, globalisation, gender revolution, underemployment, and global risks undermine the foundations of classical industrial modernity and render old concepts obsolete. Modernity's internal dynamic pits it against the hitherto unknown threat of global self-destruction as a result of the threats posed by specific technologies.

As a result, Beck portrays the risk society as entwined with reflexive modernity. In the same way that "simple modernity" created commodities and services that posed distribution issues, reflexive modernity is creating dangers that must be dispersed fairly.

The Reflexive Modernization has to be viewed from two stages namely –

1. Reflex stage – In this stage, it is seen that risks are viewed as created by modernization.

2. Reflection stage- In this stage, risk is seen as growing and there also exists critical reflection.

In other words, people are viewed as dealing with constantly insecurity and Uncertainty in their lives. Risk also becomes political and modern.

3.5 MARY DOUGLAS VIEWPOINT

Mary Douglas, an anthropologist, and numerous of her colleagues have looked at the link between danger and culture. Douglas claimed that

cultural interpretations of natural qualities reveal as much about the reflected character of society as they do about the underlying elements of nature itself, building on Durkheim's famous idea that religious cosmologies mirror social structures. Cultures that are carefree, independent, and dynamic tend to see nature as robust and capable of taking care of itself, whereas cultures that are unstable or concerned about defending their borders tend to see nature as fragile and in need of protection.

Douglas even discussed a method for assessing risk in mature industrial cultures. According to her risk worries in a community, is related to the society's cultural 'insecurities' (Douglas and Wildavsky 1982). Douglas' "culture theory" has been difficult to verify and it presents a number of theoretical issues, including the unit of cultural analysis and the origins of cultural change. Her method, on the other hand, serves to highlight the extent to which a culture's risk awareness may be ascribed to the form more general cultural worries.

Human manipulations in nature do not cause all current hazards. Though medical and environmental dangers have become more prominent since the mid-1970s, the networked and industrialised world has also been marked by concerns about crime, immigration, internet security, financial markets, and global social dislocation. Risk apprehensions can thus be attributed not just to nature and the human body, but also to contemporary civilizations' self-perception[vii].

3.6 RISK AND CULTURE

In its broadest version, Beck's theory states that the most modern are hazardous (specially 'late' or 'high' modern societies (Giddens 1991)) They are also reflexive in the sense that they are self-inflicted. Risks in the early modern period are external to social actors' and self-conscious control. As though under the power of external, natural forces, diseases spread, terrible weather ruined harvests, and flames consumed cities. Even if human activities increased some of these hazards, the current assumption was that they were uncontrolled. Risks such as the possibility of catastrophic nuclear reactor accidents, on the other hand, are clearly the result of human activity in high-modernity. (Beck 1986).

In this perspective, Victorian and early-twentieth-century optimism about the gradual reduction of risk marks, ironically, the shift from seemingly external to socially-induced danger. Because modern dangers are typically the result of science and technology ventures (nuclear power, ozone-depleting chemicals in the earth's atmosphere), scientific and technological developments are caught up in this reflexive pattern. Science and technology are involved in the cause, diagnosis, and, with luck, eventual rectification of the problem.

3.7 GLOBAL WARMING AND ASSOCIATED RISK

Beck is particularly concerned about environmental and health hazards, particularly those posed by genetic technologies. According to Beck, modern society functions as a "laboratory" in which no one is held responsible for the negative consequences of technological advancement. He gives the examples of Chernobyl reactor explosion which harmed the people and environment. Let us now look into how global warming is risky in todays time.

The global warming today, is a problem for not one country but it is a problem which whole world is going to face. The worldwide yearly temperature has risen by a little more than 1 degree Celsius, or roughly 2 degrees Fahrenheit, during the Industrial Revolution. It increased by 0.07 degrees Celsius (0.13 degrees Fahrenheit) per ten years between 1880 and 1980, when good recordkeeping began. Since 1981, however, the pace of growth has more than doubled: the global annual temperature has risen by 0.18 degrees Celsius (0.32 degrees Fahrenheit) every decade for the previous 40 years.

What's the end result? The world has never been hotter. After 1880, nine of the ten hottest years have happened since 2005, with the five warmest years on record all occurring since 2015. Climate change doubters say that rising global temperatures have come to a "halt" or "slowdown," however several studies, including one published in the journal Environmental Research Letters in 2018, have refuted this assertion. People all across the world are already suffering as a result of global warming's effects.

Climate scientists have now noted that we must control global warming to 1.5 degrees Celsius by 2040 if we are to prevent a future in which the worst, most devastating effects of climate change: severe droughts, wildfires, floods, tropical storms, and other disasters which we collectively refer to as climate change, will be part of everyday life around the world. These impacts affect everyone in some way, but they are felt most intensely by the poor, economically marginalised, and people of colour, for whom climate change is frequently a primary cause of poverty, relocation, hunger, and social unrest.[viiiix]

Risk in terms of Health

3.8 CRITICISM

Many social scientists have praised Beck's overall analytical assertion, and the phrase "risk society" has now become common word. The specifics of his analysis, on the other hand, have not been welcomed with the same enthusiasm. For starters, it's uncertain how 'modern' many current threats are. The low-tech industry of making cattle feed from animal protein, notably in the context of energy-saving, low-temperature process advances, is considered to have caused the outbreak of 'mad-cow disease,' which was subsequently reportedly passed to humans. More importantly,

Beck's favourite examples—such as the dangers of Chernobyl nuclear fallout—have a primitively 'democratic' feel to them.

On the surface, the consequences might affect both the rich and the poor. In that sense, the 'risk society' is an issue that affects everyone (Beck 1986). However, as the environmental justice movement has demonstrated, environmental 'bads' are still being allocated unequally along racial, gender, and class lines, notably in the United States (Bullard 1994). It's possible that the dangers of the risk society aren't distributed as evenly as Beck claims. Finally, Beck says little about the causes underlying cultural disparities in the importance of various types of risk, despite the fact that it is obvious that risk framing and policy responses vary substantially even within socially and economically equivalent places like Europe and North America. (Jasanoff 1986).

3.9 SUMMARY

by two sociologists Ulrich Beck and Anthony Giddens. This theory of risk society has been referred in two books by Ulrich Beck that is – Risk Society – Towards a new modernity (1992) and World Risk Society (1999). While Giddens writes about Risk society in the book – The Consequences of Modernity, Modernity and self identity – Self and society in the late modern age (1991).

A risk society is one in which we are increasingly living on the edge of a high technological frontier that no one fully comprehends and which produces a wide range of possible future. by two sociologists Ulrich Beck and Anthony Giddens. This theory of risk society has been referred in two books by Ulrich Beck that is – Risk Society – Towards a new modernity (1992) and World Risk Society (1999). While Giddens writes about Risk society in the book – The Consequences of Modernity, Modernity and self identity – Self and society in the late modern age (1991). A risk society is one in which we are increasingly living on the edge of a high technological frontier that no one fully comprehends and which produces a wide range of possible future. Beck's conceptualization has sparked new study on the social and environmental ramifications of science and technology, as well as helped in growing use of risk analysis in debates of public policy using science and technology that raise ethical concerns[x].

3.10 QUESTIONS

1. Discuss Mary Douglas on Risk

2. Explain Risk Society

3. Discuss Environmental Risk with reference to Global Warming

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GOLDEN AGE APPROACH - PRE COLONIAL PERIOD

Unit Structure

4.0 Objectives

4.1 Introduction

4.2 Golden Age Approach

4.3 Pre colonial period

4.4 Questions

4.5 Reference

4.0 OBJECTIVES

1.   To understand the Golden Age
2.   To learn about Pre colonial environmental conditions
3.   To learn about the prominent environmental movement of Pre colonial India – Bishnois movement.

4.1 INTRODUCTION

In this chapter we are going to study about the topic Pre-Colonial- Golden era in terms of Environment. Every decision we make about what to buy, wear, and consume has a direct and strong influence on climate change, child malnutrition, and the health and balance of Mother Earth's water, air, and land[1]. This chapter is very important to understand the present and future. This chapter would be useful if you are planning to pursue career with environmental sciences as specialization, work with Non-Governmental Organizations, which work on these areas. If you are planning to work with fieldwork in rural areas, understanding about the historical events in Environment would be helpful. The discipline of Environment is going to be more in demand, with rising global warming, hence studying these topics which are contemporary is very important. There are several organizations like Center for Enviornmental Studies where one can specialize and work if interested in future. There are Hindi songs like Where the golden bird resides that is the nation of mine India. Jahan dal dal par sonne ki chidiya karthi hai basera, woh bharat desh hai mera, who bharat desh hai mera. This song explains the beauty of India and its greatness. Like this song, India had golden years prior to Colonization especially in terms of natural resources and environment.

4.2 GOLDEN AGE APPROACH

The Golden Age of India said to be with the Gupta Empire's prosperity, which was distinguished by numerous innovations and discoveries in science, technology, engineering, art, dialectic, literature, logic, mathematics, astronomy, religion, and philosophy.

His court comprised the Navartna, or the Nine Jewels, a group of nine academics who created improvements in various academic subjects, Chandragupta II, encouraged the confluence of science, art, philosophy, and religion[ii].

4.3 PRE-COLONIAL PERIOD

South East Asia – Pre colonial

Human contact with the Southeast Asian rainforest was predominantly one of dependency until around fifteen centuries ago. Trees were cut for food and aromatic woods, as well as to burn in dryer zones as part of a shifting agricultural process, but population pressures were low enough to allow for regular regrowth. Before the modern era of plantation agriculture and mechanised logging, two major changes had already profoundly influenced the environment: (1) the development of permanently irrigated rice fields in upland valleys, gradually creating substantial areas of permanent agricultural land and allowing for greater concentrations of population, both agricultural and urban; and (2) the rapid growth of commercial agriculture beginning in the fifteenth century.[iii]

Pre colonial India

The Pre colonial India is a vast topic. There were several groups (kingdoms) which existed in the pre colonial era like 16 mahajanapadas. However, the impact of the Britishers was massive. In terms of India, the pre colonial era, is generally can be seen as the period from before the beginning of the British rule, i.e. 1757. Hence, we will focus on this section itself.

Nature in India

Indian traditions has very close relationship with that of forest, trees, plants. Nature worship is still practiced all over the country in different forms among different religious groups. People consider several trees as sacred even today like Neem, Tulsi (Basil plants) etc. During any ritual it is plants or trees are included let it be as mango leaves, banana stem and leafs or as paddy. Even in mythological stories like Ramayan, there is reference of forest being lifted, residing in forest for years. Forest produce like honey, medicines still carry lot of importance even today. Given these details let us look into the geography of India and its details.

The location and extent of India's landforms have had a significant impact on her previous history. The study of physical elements in connection to man and his needs is critical since connected features such as climate,

land-use, modes of transportation, population sharing, and so on are directly related to history. The following four major physiographic divisions may be found in India:

The Himalayas in the north and the Eastern Highlands in the east form a high mountain barrier; the Ganga-Yamuna Doab; the Plains of Northern India, also known as the Ganga-Yamuna Doab; the Plains of Peninsular India, south of the North Indian plains, also known as the Indian Plateau; and the Coastal Lowlands fringing the Plateau of Peninsular India[iv].

Characteristics of Pre colonial India

1. Agriculture

Subsistence farmers grouped in tiny local groups carried out agriculture activities in India. Villlage was essentially self-sufficient economically, with its only commercial dealings with the outside world being the payment of land income (usually in kind) and the purchase of a few necessities from the surrounding town. The farmer grew only the food he required for his personal consumption and shared the rest with the local craftsman, who provided him with modest manufacturing for his own use. Communication was limited to basic methods.

As a result, agricultural produce commerce was restricted. The farmer generally grew enough food to support himself and the village's non-agricultural residents. Due to favourable meteorological circumstances, if his crop yielded more than the consumption demands, he saved the remainder for use in lean years. Food grain storage was a popular technique among pre-colonial agriculturists, and it was the only way to avoid famines in these conditions. Throughout the Middle Ages, this agricultural system persisted. Eventually, towards the end of the 18th century, village communities began to disintegrate under the influence of new forces that gave the Indian rural economy vitality.

This was mostly due to two things. The emergence of a thriving agricultural export trade in India. Both of these developments were brought about through interaction with the West through the foundation of British administration.

2. Trade - Despite the fact that Indian communities were mostly self-sufficient and communication was poor, India enjoyed substantial trade inside the nation as well as with other Asian and European countries. Imports and exports were maintained in balance. Pearls, wool, dates, dried fruits, and rosewater from the Persian Gulf; coffee, gold, medicines, and honey from Arabia; tea, sugar, and silk from China; gold, musk, and woollen cloth from Europe; metals like copper, iron, and lead; and paper from Europe were among the things transported into India. Cotton textiles were the principal exports from India. Apart from cotton textiles, India also supplied raw silk, indigo, opium, rice, wheat, sugar, pepper, and other spices, as well as valuable stones and drugs.

In pre-colonial periods, the main characteristics of Indian commerce were I a favourable trade balance and (ii) a foreign trade that was most appropriate for India's degree of manufacturing. A favourable trade balance resulted in a surplus of exports over imports, implying that India exported more than it needed to import. Because India's economy was mostly self-sufficient in handicrafts and agricultural items, it did not require large-scale international imports and maintained a healthy Wade. Second, India's overseas trade met the country's needs well. In other words, India benefited from the commodity pattern, which is critical to every country's global commerce. India specialised in exporting some commodities and importing others. The commodity pattern of India's international commerce changed dramatically from pre-colonial to colonial periods.

Despite the fact that India's export surplus remained, the country's international trade pattern shifted. For example, India was turned from a cotton textile exporter to a cotton textile importer, destroying India's rich traditional handicrafts.

3. Handicraft Industries

Industries of Handicraft As previously said, India was a manufacturing powerhouse. Indian artists were well-known around the world for their abilities. In truth, India's favourable international trade was due to its superior domestic output. India produced cotton and silk textiles, sugar, jute, dyestuffs, mineral and metallic items such as weapons, metalwares, and oil on a massive scale. Dacca and Mmhidabad in Bengal, Patna in Bihar, Surat and Ahmedabad in Gujarat, Jaunpur, Varanasi, Lucknow, and Agra in Uttar Pradesh, Multan and Lahore in Punjab, Masulipatnam and Visakhapatnam in Andhra Pradesh, Bangalore in Kerala, and Coimbatore and Madurai in Madras were thriving textile centres. Kashmir was known for its woollen mills. Shipbuilding was a major industry in Maharashtra, Andhra Pradesh, and Bengal. Many European businesses purchased India's ships towards the end of the 18th century. Without a doubt, one of the most important centres of global trade and industry[v].

The intricacies of relationships between many components of the environment have not been explored in pre-colonial Indian historical narratives. The availability of water for irrigation is a crucial factor for every agrarian civilization, particularly in dry and semi-arid locations with irregular annual rainfall distribution and low water tables, salty water is frequently used even for drinkable reasons.

Check Your Progress

1.   Discuss South East Asia in terms of Environment.

2. List out three Characteristics of Pre colonial India.

Environmental conditions in the Pre colonial India

In pre-colonial India, the cultivated land produced a wide variety of crop while the noncultivated particularly, forest area produced a wide variety of crop. A wide range of plant and animal product with the purpose of meeting the sustenance needs of the people in the area This happened during the colonial period. The term, period has to be replaced with cultivated territories devoted to the development of a select few Cotton, jute, indigo, and tea are examples of such crops uncultivated areas with a few options Teak, for example, is a kind of wood (Tectona grandis), largely for export to the United Kingdom. (Gadgil, 1991)[vi].

To understand the precolonial environmental conditions, we have to look into different associated factors like role of state, industrialization, infrastructure etc. Let us look into details of it -

Role of State

Different water management systems produced and maintained by local/individual efforts as well as those designed and managed on a bigger scale by the state for irrigation and drinkable reasons. The pre-colonial rulers in Rajasthan were said to have to assure the continuation of habitation by granting concessions and support in order to safeguard their income source. In a society whose political and social orders were intertwined into a single complicated web; it was a challenging act of balance. The state was provided with an all-pervasive administrative machinery via the same complicated web.

Its casts doubt on the mainstream assumptions centered on the state's relative indifference to agricultural output and the resulting impunity enjoyed by local socio-political power brokers and even growers.[vii] Many states had sovereign kingdoms who looked after their own land.

Industrialization

Due to lack of industrialization in the country, many of the issues which we face today as a result of industrialization didn't exist. For eg- Air pollution, Water pollution, Drainage issues, massive population located in one area- cities hence over use of the land available. Industrialization effect in today's time can be seen from the case of New Delhi, where the quality of air has changed over years. Consumerism was less and hence the demand, supply, wastage created was less – as a result, toxic products like plastic was not used. Hence, water bottles, toothpaste, milk packets, comb, polyster clothes, chappals all the things which has plastic and used in every day lives consumption was not in such massive scale. Due to lack of mechanization production was many a times hand made and it was slow in nature. This in turn did not create the use and throw culture unlike today.

The infrastructure facilities were very poor and hence as a result, deforestation was not as rampant as in the present times. There were no construction of large dams, hospitals, cities, real estates as visible today.

As a result, people were neither displaced on the name of infrastructure nor the environment was harmed as visible today. With no car, vehicle the energy crisis did not exist and petroleum products were not consumed at heavy quantity like today and this helped in the preservation of environment.

The Britishers brought about Industrialization, Railways, transportation for their own benefits to export the products of India, Mining, Steel, Minerals extracts, Coals was made massively. These things were not so popular back then hence, the nature and resources, were lying as it is was hence, there existed balance in the nature. The species dependent of nature did not get effected neither that of human beings.

Natural Disasters

There were periodic natural disasters like flooding- it harmed people, settlements. However, from environmental view point it brought about fertile soil at surface. Resulting in developing nutrition among crops.

Science –

Genetically modified products were not available back in those days as research in terms of modifying crops, food was not evolved back then, this protected both the environment and that of the people.

Urbanization did not grow such rapidly as majority of population was living in villages. There was barter system practiced whereby people exchange goods and services many a times. Leaving the family was looked down upon, it was seen as unhealthy as joint family was the norm of the societies.

Lack of enough transportation like Railways, buses made the travel time also difficult. Very few people owned personal vehicles. Hence, the same belief exists even today whereby an individual having a car is seen as rich. The transportation mode was very elementary like travelling through bullock carts, walking, using boats to commute etc. Being natural methods, the population was far limited through that of transportation. As a result, the amount of carbon dioxide released in the atmosphere was limited.

Death due to diseases

During natural calamities like earthquake, floods, lack of medical facilities, transportation the number of deaths i.e. mortality was high. People could not live such a long-life span as they continue to live in today's time as a result parents even produced few more childrens so that one would survive. There were problems like lack of food, diseases, famines, tribal wars which reduced the population naturally. Hence, the pressure on the environment, use of resources was very much limited.

The Tribes

The tribes had greater control over the land. They lived in isolation away from villagers. As a result, of this the nature was preserved. There was also greater amount of belief patterns and respect with nature. Even today, one can witness there are several rice varieties, plants information, medicial plants details its known by tribes. As tribes were directly dependent on that nature hence, they preserved it more than the urban city dweller of today's time. The conditions of people at times was affected by war however, the environment remain unaffected many a times.

Check your Progress

1.Discuss the Golden Age

2. Discuss the role of tribes in preserving environment.

Case Study of Bishnois movement –

The Bishnois are regarded to be among India's first environmentalists. They were born to be naturalists. For centuries, they have combined eco-conservation with their faith, making it one of the most environmentally conscious orders in the world today. Due to " their respect for nature and all forms of life, they are truly a 'BISHNOI.'

Saint Guru Jambheshwar is said to have founded Bishnoism in the Thar Desert , Rajasthan, India, in 1485 AD. Even before the rest of the civilized world was aware of the environmental difficulties, the Bishnois were aware of man's connection to nature and the importance of maintaining its delicate balance. It's remarkable to think that Bishnoi visionaries were thinking about these issues half a century ago. No other religious institution has put such a strong emphasis on environmental preservation, protection, and care as the Catholic Church. Tree huggers and tree-hugging have their beginnings in Bishnoi history, which few people are aware of.

The famous 'Chipko Movement' was triggered by a true story of a brave lady named Amrita Devi Bishnoi who refused to let the kingsmen cut down the trees. Her hair had been chopped off and her head had been slashed off. After witnessing their mother lay down her life for them, her daughters clung to the woods. Their heads had been amputated as well. The adjacent village residents, upset by the happenings, clung to the trees as the massacre continued. More than 300 people were killed because they refused to kneel down and tried to defend the trees. When the monarch realised what he had done, he felt disgraced. He apologised to the Bishnoi community, put a halt to tree chopping and wild animal hunting in Bishnoi regions, and threatened individuals who disobeyed his directives. Sunder Lal Bahuguna's "Chipko Andoloan" was inspired by this sacrifice, as was the Government of India's "Amrita Devi Bishnoi Smrithi Paryavaran Award" for contributions to environmental protection.[viii]

The Bishnois were among the first to unite around environmental preservation, wildlife protection, and green living. The Bishnois and Bishnoism are particularly relevant to our changing society since their values are based on 29 religiou's precepts. Bishnois respect all life things and do not chop down green trees. The Bishnoi communities are constructed using locally collected materials and environmentally sustainable methods. They don't cut down trees. Only dead wood is collected by them. Even a carpenter waits for the tree to fall calmly. Deers, Black Bucks, Peacocks, Blue Bulls, and Chinkaras are just a few of the species that wander the towns. Many creatures have lasted thus long because to the Bishnois and their devotion to environmental conservation. Nowhere else could one find such a harmonious blend of vegetation and animals. To overcome the severe drought and water shortage, the Bishnois built water storage tanks that can catch and store rain water even before the Rain Harvesting idea became popular. This water is beneficial to both people and animals. The cremation of the deceased is frowned upon by the Bishnois. They bury the deceased to prevent wasting fuel.

Though they are a religious sect, the Bishnois do not believe in superfluous ceremonies, idol worship, caste systems, or other such things, and instead place a strong focus on compassion, love, and peace, solidifying their love for Mother Nature. Cow dung cakes are used as cooking fuel to reduce the need of green forests."Amar Rakhave That" is one of their main beliefs, which means "to offer sanctuary for abandoned animals so that they can be rehabilitated."

Check Your Progress

1. What is your understanding of Genetically modified food.

2. Name the Women who is associated with the Bishnoi movement who laid down her life.

4.4 QUESTIONS

1. Discuss the case study of Bishnois as a environmental movement
2. Discuss the characteristics of pre colonial India

4.5 REFERENCE

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5

REGIONAL DIVERSITIES : COLONIAL PERIOD

Unit Structure

5.0 OBJECTIVES

1.   To understand the regional diversities of India.
2.   To understand the impact of regional diversities upon culture of India.

5.1 INTRODUCTION

In this chapter we are going to look into the regional diversities within India. India has witnessed several rulers, migration from different countries. Diversity is one of the uniqueness of India. It is said that in every five kilometers one would hear, taste different sound, food, customs many a times. In a cosmopolitan city like Mumbai there are people from different locations of India and even abroad. This chapter will be helpful for adding to the existing knowledge base of our country, to get some unknown information, to develop perspective on India. Region meaning a particular area or part of the world, or any of the large official areas into

which a country is divided[i]:Let us look into the regional diversity in terms of different aspects of our society.

5.2 NATION BUILDING

Geography is regarded to be a process of social construction, and how the lands and oceans, mountains and rivers, take political significance is largely determined by how geography is viewed and produced over time[ii].In today's time geo politics is one of the most widely researched discussed topics. Nation is set by a boundary. However, building it takes time.

Nation building is a lengthy process and it undergoes through several wars, migration, presence of variety of leaders and their influence, events through which a nation gets constructed. Nation as Bendict Anderson said, is a imagined community built and existing for the people. It has a defined territory recognized by other countries.

Existing literature reveals that from 2600 to 2000 BCE, India had a highly developed urbanised society known as the Indus civilisation which existed in the northern section of the subcontinent, according to archaeological evidence. India became was practically self-contained political and cultural landscape during that time[iii].

According to S.M. Michael, cultural inputs and influences of India, came from ancient Indian tribes, the urbanised Indus valley, and several other groups like - Aryans, Greeks, Scythians, Parthians, Shakas, and Huns - who arrived before the seventh century. Between the seventh and twelfth centuries, many groups including as Arabs, Persians, Turks, Afghans, and Mongols also entered, adding to the country's cultural influences[iv].

India is also surrounded by different borders. There are six nations border which surrounds India's border, and it also near one-third of its coastline. Like Pakistan borders on the northwest, Nepal, China, and Bhutan, and Myanmar on the east (Burma). Bangladesh is bordered on the east by India on the north, east, and West. Sri Lanka is a small island country which exists 40 miles (65 kilometres) off the southeast coast of India, separated by the Palk Strait and the Gulf of Mannar.

There also exists Arabian Sea to the West and the Bay of Bengal to the east which encircle much of India's territory. There is also Cape Comorin, the southernmost point of the Indian landmass, representing the dividing line between those two bodies of water. India also has Lakshadweep, the Arabian Sea, and the Andaman and Nicobar Islands, between the Bay of Bengal and the Andaman Sea, are India's only union territory made up completely of islands.

5.3 INDEPENDENCE STRUGGLE

The British established direct administration in the Indian subcontinent in the year around 1858, and it resulted in a political and economic unity

of the region. When British authority ended in 1947, the subcontinent was divided into two countries namely, India and Pakistan (iii).

The anti-colonial struggle and modern India's artistic renaissance were both reflections of the people's yearning for a national identity. People were intimately immersed in the social issues of the day. Anti-colonial resistance took the shape of a cultural movement, which blossomed into an anti-colonial mobilization in the sphere of consciousness[v].Independence movement was a movement in which large scale participation of females also existed.

5.4 CASTE

Caste system is an unjust practice. Yet it is followed rigorously in several parts of India and families too. There are issues like honour killing which can be seen as outcome of discrimination due to caste system. Caste is also an ascribed status. In the village context, there is not just caste but sub castes too which we have to try to understand. The complexity of the problem is that there exist few villages even today where all the residents belong to one caste. The Britishers role was very clear whereby they did not interfere or try to disturb the existing caste structure.

5.5 TRIBES

The tribal population are said to be the original inhabitants of the world. Even today, it is only the tribes who have the traditional knowledge of different flora and fauna in the forests. They also have unique cultural practices which is of the period of earliest human kind.

The Britishers had their own role to play in worsening the conditions of tribals. The tribes in the colonial period were labeled as Criminal Tribes through 1871 Act.This resulted in creating stereotypes, stigma etc. Though these tribals helped in the independence movement and they help in the preservation of the nature, culture, they are the ones who suffered the most. Today the Tribal identity articulation has been a process led from within the tribal community, it is also lead by a growing middle class. In recent times, the tribal ways of life faces challenges by other dominating groups like industrialists, real estates, politicians and demands imposed by development. This articulation has taken the shape of demands for political autonomy, as well as attempts to assure the preservation and development of tribal language, customs, and culture[vi]. Tribal culture is unique and it gives highimportance to nature and even females. For example – Kaziranga (Assam) is a wild life sanctuary and the place is named after a female. It believed that a female had brought few baby rhinoceros with her and hence the place flourished and hence as a tribute to her, the village is named after her. There exists also exists a statue on her name in the village. The seven sisters of our country (North East) also have several tribes residing in them. Some of the tribes still have practices of matriarchy where females are valued highly.

5.6 RELIGION

Religion is a important institution in India which impacts every day lives and decisions of individuals. The impact of religion can be seen from the number of followers, cults, spiritual gurus developing everyday. In India different religion/ belief system, exists and it has a huge important role to play. According to the Census of India, 2011 the religion data of the country can be described as below[vii].

All Religion	100.00 %	121 Crores (Population Practicing it)
Hindu	79.80 %	96.62 Crores
Muslim	14.23 %	17.22 Crores
Christian	2.30 %	2.78 Crores
Sikh	1.72 %	2.08 Crores
Buddhist	0.70 %	84.43 Lakhs
Jain	0.37 %	44.52 Lakhs
Other Religion	0.66 %	79.38 Lakhs
Not Stated	0.24 %	28.67 Lakhs

Check your Progress

1. According to you, how can we eradicate the caste system or take some steps towards reducing the discrimination associated with it.
2. The Criminal Tribes Act was laid on which year and what was its impact?

5.7 REGION AND RELIGION

Religion/ Belief system can be also viewed from that of region specific, let us try to understand this from that of village setting. In several villages of India, there exists village gods and goddess which is located at the entrance of the village. They are viewed as the Guardians of the villages – the structure could be a heap of sand, or it could be a mound, or even a

large erected stone or a statue with a weapon too. At times, the deity is also believed to be residing on a tree – it could be banyan tree, palm tree, neem tree etc. The belief is that the guardian gods protect the locality and region. There are terms like 'Sthalapurana' – Sthala – meaning –puranas – old /sacred writings which contains stories/ myths about the origin of the gods and goddess. These stories is often verbal in form, narrated from one generation to another. The point to note here is that such belief system is identified with a location and are part of the folk culture, and every village would have one such folk gods and goddess.

There are several missionaries who came prior to colonialization and during Colonization who have documented about these folk forms in several texts. One such is Village Gods in India, written by Henry Whitehead published in the early 1920s. In Maharashtra, we have several such deities like Khandoba, Ekvira, JivDani goddess, Mari Ai to name a few. The beauty of the folk cultural practices is that within India, the name of the goddess, attire, also changes depending on location. For example – Maari Ai – Ai means mother in Marathi, the same goddess is called as MaariAmma – Amma – here means mother in Tamil. There is also notion of protection of one's religion- idea of being a guardian (people) to the guardian (god). Again, believed to be in different villages, specially located at the entrance of village.

The goal of Religion/ Belief system is to provide a sense of community as Durkheim said, it's not religion or cults we are worshipping but what is being worshipped is the society at large. With time, religion is used as a tool to gain power by some groups. Several groups are using it for their own purpose to divide and rule – what Britishers did to get into power. The purpose of religion was to provide some sense of security, help individual develop qualities of helping others, developing fellowship, qualities like being good, patience, honest, kind etc. However, these factors are being sidelined with time. The essence of India unity is diversity should be practiced. The emphasis should be on development, global warming, education, creation of jobs, reducing employment at macro level and at individual level – upgrading one's skill sets – learning – reading – making use of the gig economy, internet boom for productive purpose.

5.7 LANGUAGE

The uniqueness about India is that we have a rich culture, this can be viewed from the large number of languages we have. There are 121 languages and 270 mother tongues in total. Part A contains the 22 languages listed in the Constitution of India's Eighth Schedule, whereas Part B contains languages not included in the Eighth Schedule (numbering 99)[viii]. In our country, large section of people are multi lingual, bi lingual. One of the direct impacts of colonization has been upon the language – English is widely written, spoken in India. It has both positive and negative effects too. There exists the invisible domination of English, which can be seen from how English sidelines the local Indian languages through education, market, mass media – Television, Print, Digital

medium. The positive side includes as English is taught in schools, colleges and even separate courses being offered with specialized a wide variety of jobs accessibility exists. Youngsters have benefitted from English language learning in India and today Indians are able to travel a wide range of countries and even work in other countries. With remote jobs – they are even able to stay in India and work for other country.

5.8 FOOD

Indian food has a great deal of geographical variation. Two or three meals are usually consumed, depending on income. Almost all meals consist mostly of regional staple like rice is eaten in much of the East and South India, flat wheat bread (chapati) / Roti in the north and northwest, and pearl millet bread (bajra) in Maharashtra. This is frequently accompanied by a puree of a bean (called dal), a few vegetables, and a tiny dish of yoghurt for those who can afford it. Chilies and other spices give this basic dish a kick. There are also veg/ non-vegetarian foods some of which is gained popularity all over the world through globalization like Butter Chicken, Paneer Tika masala, Chicken 65 through Indian restaurants. The uniqueness about Indian food is that several spices which have medicinal properties are being included in it. For example – Let us take the example of Rasam from South India – the pepper, jeera, garlic all have healing properties to cure Cold. There are states which use Banana leaves instead of plates. The Banana leaves has several curing properties, according to Ayurveda. Polyphenols, commonly known as epigallocatechingallate or EGCG, are the chemicals that coat banana leaves which isalso present in green tea. There are also natural antioxidants that are found in these leaves. Eating in banana leaf helps reduces free radicals and helps to avoid sickness. Eating on banana leaves, or having hot food cooked on them helps to consume the nutrients they contain. The leaf also has Antibacterial qualities which eliminate microorganisms in the food, and even lowers the risk of being unwell. Even the Maharastrian Thali consists of a balanced diet of both chapatti, rice, salad, curd etc. Coconut is also widely used in the food, which has several healing properties like curing thyroid.

There are several food storing traditional patterns in India like making pickle, making jams/ moramba like that of Avla (goosebeery), mango, pineapples etc. There also practice of dugging a hole and keeping root vegetables in places like Ladakh to use it for long time. Even drying the left-over rice and making fries out it, or even pappad etc. A proper Indian Thali has the different flavors like sour, sweet, spicy, salty and other flavours which a body requires. In addition, there are several items which is consumed even after food like butter milk (thaak), baddisaunf etc. which helps in better digestion. The Indian culture is so rich that food is not just consumed but it is also offered to Gods and Goddess as offering (neivaidy) and methods like water is sprinkled across it while offering – reminding water as a symbol of life.

5.9 REGION AND IDENTITY

Region and community and identity is often linked together. For example-If an individual is staying in Maharashtra the person would be called as Maharashtrian, if from Gujarat then Gujurati. However, if the individual is from Kerala but residing in Maharashtra here the locational, identity would change. Further, if the individual moves another country, he/she would be called as Indian and further Asian. So, the identity associated with the region, language, location can be said as fluid in nature. However, there exists several groups who try to take benefit of this and create issues too. Hence, we can say that there is shifting boundaries both in the physical space as well as a mental construct in the society.[ix]

5.10 GENETIC VARIATION IN INDIA

There exist different groups, races in India. Some studies point out that there are nearly 4500 anthropologically well-defined communities, and it is regarded as a treasure by geneticists and evolutionary biologists (castes, tribes and religious groups). Endogamy, language, culture, physical characteristics, geographic and climatic location, and genetic architecture are all unique to each community. These circumstances lead to India-specific genetic variants. As a result, deciphering Indian population origins and affinities, as well as health and illness situations, necessitates comprehensive and advanced genetic study. The genomes of Indian residents provide evidence of ancient human dispersals and settlements, which has been widely studied in both conventional and genomic analysis.[x]

5.11 CONFLICT/HYPOTHESIS

The Indian history of diversity demonstrates that the "conflict hypothesis/theory," which asserts that physical closeness between distinct groups causes friction and discontent, fails to account for the many way's diversity displays itself. On the contrary, it illustrates the "contact theory," which states that spending more time with individuals from different backgrounds leads to increased understanding and harmony among groups, and that rising variety is not only unavoidable but also beneficial and useful[xi].This has been seen with the Indian culture.

Check your Progress

1. According to you, how can be improve the harmony among different religious groups in India.

2. How many languages are there in India according to Census 2011?

The above image shows the different sweets available in different parts of India. Every sweet has its own history, culture associated with it[xii].

Street food[xiii]

Summer Drink[xiv]

5.12 SUMMARY

We began this chapter by trying to understand the nation building process, where we looked how historically India had visitors, migrants from different parts of world, and that is what makes India, distinct. The uniqueness about India stands its diversity. We looked about language, food, religion, region, tribes of the country. According to Joshi, further improvement in India, could take place if there is collaboration between science and culture and unity in diversity is nourished and celebrated.

5.13 QUESTIONS

1. Discuss regional diversity in India with reference to Tribes and Language
2. Explain Nation Building and link between region and religion in India.
3. Write a note on the food diversity in India.

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NEHRUVIAN MODERNITY

Unit Structure

6.0 OBJECTIVES

- To understand the contribution of Nehru towards nation building

- To delineate key elements of Nehru's vision of a modern Indian State

6.1 INTRODUCTION

The idea of Nehruvian modernity needs to be understood from the political and historical context. Nehru was given the responsibility of the newly formed independent nation that was trying to reconcile with the trauma of partition. The nation was also striving for a unitary principle that encouraged coexistence of multiple faiths. Its aim was to generate the infrastructure needed for removing poverty and illiteracy. All these challenges led the first Prime Minister of the country to pursue his project of modernity. Nehru provided leadership on matters to which the rest of the world had not yet given a serious thought. His exposure to western education and livelihood exposed him to the ideas of modernity.

The early years of India's independence have often been associated with Nehru and his vision for a modern India. It was under his leadership that within the first one and a half decade after independence. India had built most of the institutions. These institutions were critical to democracy such as the Indian Constitution, a functioning parliamentary democracy and an independent judiciary that helped shaped India into a modern state. Nehru also left a lasting impact on India's economy by introducing the process of planned economic development. The first two or three five-year plans promised optimism related to Indian policy measures. These plans tried to

work around the challenges imposed by a tradition bound society and economy without any radical changes in the existing structure.

6.1.1 Understanding the concept of Nation

How is it that a country so diverse in terms of its languages, religions, and castes and deeply traditional in its ethics, mores and values survive into modernity, despite a non-traditional institution of formal democratic representation and statehood? Scholars like Sunil Khilnani attempt to answer this question thus: The idea of India is apparently the idea of a nation which is at once diverse and modern in these ways in the face of several challenges of the past, present and the future.

There is a certain ambiguity in the understanding of the term 'nation', whether it is a site and a basis for a movement or a claim to gain control of that site. *Qua* site, the definition of a nation is not only on the basis of territory (boundaries are inarguably important), but also on the basis of principles and institutions of a State. *Qua* basis for a movement, a national is defined upon a people with a common history and shared natural and social attribute. This definition is debatable, and rarely agreeable between political theorists and people themselves.

The problem with India is unique, because it was a site initially as a result of the imposition of a colonial state by the British over a region with intense historical and geographical disparity, scattered centres of power associated with structures of caste, local rule and then by the efforts of native populations which were successful in overthrowing the British colonial power. The native populations lack the shared unifying attributes which define a nation.

6.1.2 Nehruvian Worldview

It is important to understand Nehru's worldview. Nehru was in many ways modern and was influenced by the major transformations that post-Enlightenment Europe was passing through. Nehru's modernity was indigenous and rooted in the Indian ethos, thus it was distinct from the European idea of modernity. While his modern ideas were not absolutely novel, they were incorporated in the framework of an independent nation solely on the basis of his patience and persistence.

Nehru acknowledged that India was ancient, but at the same time aligned it to the modern world and the future he envisioned for all of mankind. In order to achieve this, he used the State as a medium to modernize the country. Nehru based his strategy on two things – heavy industry and higher education. He recognized that India has limited resources, but would give priority to the above two sectors.

Nehru recognized the importance of scientific and technical expertise and funded the creation of various institutes of excellence in the field of basic and fundamental research. This saw the setting up of IITs, Universities and also increased the technical manpower in absolute terms. It was Nehru who built the scientific, technological and engineering base for a young

nation. He began building institutions, including institutions which are today referred to as the "Navratnas", such as, Bharat Heavy Electricals Ltd (1964), Oil and Natural Gas Corporation (1956), Steel Authority of India (1954), Hindustan Aeronautics Ltd (1964), Indian Oil Corporation (1959), ISRO (1962), Department of Atomic Energy (1954). Besides these, Nehru also established the Indian Institutes of Technology (1951), Indian Institutes of Management (1961), the National Institute of Design (1961), and the Sahitya Akademi (1954).

Eminent scholar Avijit Pathak discusses Nehruvian modernity as is reflected in the 21st century. How does one understand the project of modernity Nehru visualized for redefining the identity and aspirations of a new India? This question needs to be understood in the context of two aspects. Firstly, does the discourse of Nehruvian modernity look old fashioned or irrelevant, especially in the context of market-driven technocratic rationality coupled with militant cultural nationalism? Secondly, how can one revisit Nehruvian ideas in the context of the larger socio-philosophical debates which are enriched by critical theorists and environmentalists, especially when there is clear evidence of discontent relating to modernity which is reflected in several incidences of ecological disasters and all forms of cultural/psychic violence around us.

Prior to independence, Nehru wrote a series of works in which his alignment to India as a civilizational entity was very clear. He traced the origins of the modern nation to the Indus Valley Civilization. He recognized its long and curved history, it social and cultural matrix, its epics, religious traditions and spiritual debates, its darkness and prejudices, and its possibilities and contradictions. Nehru evolved his philosophy of modernity by attempting to understand the core values of the old civilization by recognizing the 'dead weight of the past'. Nehru was impressed by the technological and scientific developments in the West and also by the practices and philosophies of socio-political liberation. Thus, it would be apt to say that Nehru formulated the blueprint of the project of modernity for India on the basis of historical and cultural sensitivity and even metaphysical influences.

Sociologist Avijit Pathak delineates the three central pillars of the modernity project which are as follows:

1.   It gave emphasis to 'scientific temper' as a way of thinking, seeing, acting and associating with society. Nehru recognized that India with its traditional, hierarchical structure and mindset had to bear the burden of priestcraft, fatalism, fear and superstitions which posed as obstacles to development. He believed that the only way to overcome these challenges was to engage with science with its emphasis on logic and reason, empiricism, objectivity and argumentative culture and usher a new era.

2.   He cherished the idea of 'progress' which he understood as a state of material prosperity through massive industrialization and scientific development. Nehru celebrated science as it comprised of the spirit of

wonder and generated an urge to sharpen critical consciousness and the faculty of reason and logic.

3.   His vision for the modern state was driven by some form of secular/welfarism ethos. He wanted the modern state to play an active role in modernizing the society and create a new intellectual force which would play the role of 'legislators' of modernity. To achieve this goal, he established new centres of learning and research. This would help consolidate the foundations of Indian nationalism based on the idea of cultural pluralism, a broad pan-Indian consciousness, and some form of federal structure which would ensure balance between the Centre and the States.

6.1.3   Nehru's commitment to Ecological Sustainability

Major works on environmental issues and sustainable development will have references from the Brundtland Commission Report of 1987, the Limits to Growth Report of the Club of Role of 1972 or some other UN document of the 1980s. Our bias towards western scholarship is reflected in the belief that the best definitions and concepts related to understanding environment and sustainable development flow from the West. Here, it is interesting to note Nehru's thought and reflections on the environment, despite the fact that he pursued the goal of nation-building by constructing several big industrial and river valley projects and dams which he referred to as 'Temples of Modern India'. Nehru is often criticized for this standpoint. But it is often overlooked that he changed his approach towards gigantism in the later years. Environment expert Chandra Bhushan has observed that unlike Nehru, today's leaders lacked the capacity to change their opinion on environmental issues in the face of new evidences. In 1952 the issue of environmental degradation and the necessity to protect nature was raised by Nehru. In his letters to the Chief Ministers he devoted one page outlining the subtle balance of nature and raising questions regarding the adverse effects of numerous river valley and industrial projects on the environment. He also emphasized on environment assessment of projects and took a stand in favour of sustainability as early as the 1950s.

6.1.4   Nehru on Socialism

One of the ideas associated with Nehruvian thought is Socialism. However, he refused to shape the socialism on patterns of Soviet Union and he felt that democracy should be imbibed in socialism and consensus among groups should prevail. The public sector became the focus of planning during the Nehruvian era. The democratic approach of Nehru was seen in the workings of the Planning Commission which despite having unlimited power functioned with responsibility and consensus. Labour intensive industries like small scale industries were promoted; self-reliance was emphasized by adopting the import substitution policy, community development programmes. He was persistent for the peasants of India and was aware of how the zamindari system exploited the farmers. The aim of socialism was to empower the exploited farmers and

lead them towards self-sustenance. Agriculture cooperatives were created for addressing the problem of the farmers and the unemployed. Post-independence, the 'license-permit-quota Raj' was introduced as policy measures to promote socialism and simultaneously at sustaining the nation. The permit Raj had its own limitations and consequences. This strategy failed in the long term but it also created a host of beneficiaries amongst politicians, bureaucrats and business leaders who opposed the dismantling of this apparatus. Nehruvian socialism was the need of the hour to keep united as a community and imbibe the ideals of democracy and a feeling of nationhood and a feeling of a Republic.

6.2 CONCLUSION

Nehru was influenced by the promise that the grand Enlightenment project of modernity held. Nehru showed modernity and enlightenment as constructs that can wane and wear out and blossom in emphasizing humanity. Scholar Welles Hangen in his book "After Nehru, who?" determines the impact of Nehru's effective leadership and worldwide influence. Nehru is considered as the manifesto of modernity and modern ideas in India, the implementation and imbibing it in the system. However, events in today's world indicate that it would be difficult to sustain this optimistic view. We live in a 'risk society' which is threatened by war and climatic change. The growth of a media-induced hyper real culture of consumerism comes with its own mechanism of social control. Further, the surveillance based society could pose a danger to the spirit of freedom and trust. All the above have posed serious challenges to the project of modernity.

6.3   SUMMARY

The idea of Nehruvian modernity needs to be understood from the political and historical context.

The definition of a nation is not only on the basis of territory, but also on the basis of principles and institutions of a State.

Nehru's modernity was indigenous and rooted in the Indian ethos, thus it was distinct from the European idea of modernity.

Nehru recognized the importance of scientific and technical expertise and funded the creation of various institutes of excellence in the field of basic and fundamental research.

Nehru's thought and reflections on the environment, despite the fact that he pursued the goal of nation-building by constructing several big industrial and river valley projects and dams which he referred to as 'Temples of Modern India'. However, he changed his approach towards gigantism in the later years.

The democratic approach of Nehru was seen in the workings of the Planning Commission which despite having unlimited power functioned with responsibility and consensus.

6.4 QUESTIONS

1. Discuss the key elements of Nehruvian approach to nation building.

2. Examine the economic and political context of Nehruvian modernity.

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7

FORESTSCAPES

Unit Structure

7.0 OBJECTIVES

- To understand how forestscapes are social-ecological systems
- To examine the debates and contentions around conservation practices

7.1 INTRODUCTION

Most of the environmental threats to forests today call for management strategies that work on large spatial and temporal scales. The environmental problems such as wildfires, invasive species, plant diseases, pollution, etc. do not obey administrative, geographical or political boundaries. Rather their behavior is a function of ecological patterns and processes across large areas. Land management practices have long lasting impacts that often go unnoticed for a long time. Therefore, the forest management literature has now begun to consider the broader context of decisions, and gain insight into how the present and future decisions in one location may have repercussions to other regions or locations. We need to consider the emerging paradigms of forest management and the varied ways social and ecological conditions and processes (systems) interact with each other to shape landscapes across space and time. In this context, there is a need to understand that forestscapes are social-ecological systems and how the methods of conservation of natural resources are fraught with challenges.

7.2   CONCEPT OF DIVERSITY-BIODIVERSITY

Raymond William's famous work "Keywords: A vocabulary of culture and society" (1976) provides an insight into the complexity of meanings of the term 'diversity'. The concept of 'diversity' has immense consequences in both environmental and linguistic discourses. Critics of contemporary environmentalism have identified some of the contradictions inherent in the concept of biodiversity. In the forefront is development scholar, Arturo Escobar who argues that contemporary environmental campaigns do not challenge the basic premises of modern industrial society. Rather their interest in conserving biological diversity represents ever increasing capitalist interests in the Third World.

7.3   FORESTSCAPES – CONSERVATION AND CONTESTATION- INDIAN CONTEXT

The term 'conservation' as we know of it today encompasses special expertise, and skills related to the protection of forests. Such a term did not exist in the past, where simple societies followed a traditional way of life and in very rudimentary ways conserved their surrounding forests and natural resources. Today the same task has been undertaken by the departments of Environment and Forestry established by world class universities, and research institutions. These institutes train scientific conservationists and environmental experts who generally employ pure sciences and are armed with the latest management techniques. There is a clear conflict of interest between the two groups, each of which claim to be the true conservators.

Meaning of Conservation: The term conservation has several meanings; sometimes it may refer "to keep from damage or loss and planned management in conserving", while at other times it is referred to as "the profession devoted to the preservation of cultural property for the future". Whatever its meaning, conservation is a social process that is closely linked to social and political institutions that influences resource management. Its main purpose is to maintain or reveal an object's true nature of integrity. Many objects in nature have symbolic meanings. But it should be noted that an object's ability to convey meanings is a requisite for it to be considered as a conservation object. Here power plays an important role in deciding which object has a symbolic ability. Thus, the more powerful symbols are likely to be given preference and become a conservation object, while other objects will be selectively forgotten.

Conservation practices have become a scientific zone, in which scientific talk is considered important and therefore isolated from other social 'language games. It is argued that only a group of trained experts have the skills to interpret the language of conservation objects. The criticisms against scientific conservation are not directed towards the idea of science, rather it is against the idea that only hard science, with its statistics and numeric can be the guiding path towards conservation.

The notion of conservation requires 'spatial' and 'geographical' location to practice the art of conservation. The present-day idea of conservation of forestry dates back to the 19th century colonial debates on conservation of forest resources. This was done to sustain the supply the demands of the colonial government for its expansion activities and wars with rival colonial powers. The colonial administration passed forest laws in India to protect valuable resources for the empire. According to scholars such as Agrawal (1997), the West colonized other regions because of its superior knowledge and was able to exercise greater power on its colonies. In the same line, the imperative of conservation was also taken by the West because of its superior knowledge.

The conservation theorists (like development theorists) argue that forest resources are considered the "patrimony of mankind" and are located in the tropical countries of the third world and can only be protected by the knowledge, expertise and skill of the first world. They do not recognize the fact that the local communities of tropical countries have managed their resources since ancient times in accordance with traditional practices, local rules and customs. So, there are two broad groups which are considered to have scholarship devoted to the study of conservation: one champions the cause of local indigenous communities and their role in forest conservation, while the other group emphasizes on the validity of scientific forestry. The second group argues that conservation by indigenous communities is a myth.

Indigenous versus Scientific Debate: The above debate on indigenous versus scientific conservation has become politically charged. In the last three decades or so, the idea that indigenous communities are best conservators of forest resources gained popularity as indigenous groups have a spiritual respect for and have a practical understanding of the natural world. The evidence in support of indigenous conservationists included: cultural basis of conservation ethics, animistic belief systems, high levels of biodiversity and the possession of local environmental knowledge, communal ownership and management of land and forest resources. They have been often referred to as 'guardians of the earth' and 'creators of biodiversity'.

However, there are scholars such as Holt (2005) who argue that the indigenous conservationists have often been labeled 'primitive polluters' and that there is little evidence to show that indigenous societies have been conservationists. On the contrary, whenever people have an opportunity to exploit natural resources, they have done so, putting short term gain as a priority to long term goals. Traditional environmental practices are inherently damaging to the environment and it is because of this, parks and protected areas had to be demarcated in order to protect biodiversity. Freedom in the commons may result in destruction of biodiversity. Elsewhere, there are examples to prove that the forests under local community management have seen deforestation and loss of biodiversity.

Scientific forestry in India: Scientific forestry involves systematic planning, cultivation and sustainable exploitation of woodland, with

restricted local community access to local forests. The underlying aim was based on a long-term commercial timber production, which aimed at converting the rich and diverse biodiversity of India into a monoculture of timber forests for the British Empire. European and Romantic ideas were considered as scientific, modern, and rational and ecologically- minded, whereas local and indigenous knowledge was labeled unscientific, backward, irrational and anti-ecological. The British put forth the notion of guardians and stewards of forests. This was no different form the notion of 'White Man's burden' or the 'Civilizing Mission' which was guided by the imperial agendas of colonization.

Check Your Progress

1. What are Forest Scapes?

7.4 FOREST RIGHTS ACT

An insight into the background of the FRA is essential to understand its dynamics right from colonial times. Struggle over the control of natural resources and private ownership were not a new idea in India. But western legal frameworks and principles on how the distribution of rights to the land in India would take place was a new feature. The colonial government rejected the idea that nomadic and indigenous people should be given the right to roam freely over more land than was necessary for their survival. Therefore, pressure was built to settle them down, take up cultivation, provide wage labour and pay taxes. The forest laws formulated and enacted during colonial rule were created on the basis of the interaction between experiences of the forest officials, local realities and colonial needs. Scholars observe that these laws were selectively developed and strategically implemented to achieve certain desired goals. While it is true that the management of natural resources did help the British Empire, nevertheless, control was contested and negotiated with at different levels in many subtle ways.

The first attempt to assert state monopoly over natural resources was done through the Forest Act (1865), Indian Forest Act (1878), The Forest Act (1927). All these Acts in one way or the other made it very clear that the colonial state had the sovereign right over all forest and uncultivated land. The local people could use the resources but that did not signify possession of legal rights. In fact, these were privileges that the state could withdraw at will at any time. The rhetoric of conservation was supported by the production of a powerful colonial discourse. This provided the colonial administration a legitimate right to intervene in local affairs and extended their rights over people and places that were remote and lightly administered and brought them under direct control of British rule. Thus, the rhetoric of conservation became a tool for the 'governmentalization' of the colonial power in terms of everyday practices of forest dwellers. Post-independence period the same laws were continued with additional amendments. The National Forest Policy (1952), The Forest (Conservation) Act (1980) are some examples. Thus, several decades

after independence also, the tribals were considered as encroachers in their own traditional lands.

Forest Rights Act: The Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, also known as the Forest Rights Act (FRA) (2006) was enacted by the Indian Parliament during the first United Progressive Alliance (UPA) government. It was a landmark legislation to correct the provisions that were reflected poorly in the previous laws. FRA encompassed collective aspects of the enjoyment of culture and protection of lands, territories and resources of tribals within this cultural matrix, right against forced eviction and the right to free, prior and informed consent of the tribals before interfering with their way of life and cultural practices. The Act recognized the 'right to land' and as an extension, the 'right to culture' as an important human right, keeping in mind the significance of land as a sustainer of culture especially to the forest dwellers.

The FRA was a legislation that was long overdue, and demanded by various groups such as, tribal organizations, social activists and scholars to ensure justice to the tribals and other forest dwellers who had faced centuries of injustice. With a view to correct these historical injustices, the government undertook the legislation that sought to bring empowerment to the tribal people.

Under the Act, tribals were assured of individual rights as well as community rights. Besides Minor Forest Produce (MFP), community rights include rights to pasture, water bodies and diversion of up to one-hectare forestland for community infrastructure like schools. However, all is not rosy, as the forest department's attempt to dilute the provisions of the FRA has triggered protests. The government has imposed several conditions which are against the letter and spirit of the Act.

A study on the implementation of FRA in Chhattisgarh and Madhya Pradesh by non-profit Samarthan in Bhopal has gone beyond the Centre's status report. The report reveals that no community claims were approved in districts that have dense forests with a high concentration of tribals. While forest officials claim there is no demand for rights over MFP, community leaders say the officials hid the fact that FRA included community rights over MFP. Most lower level forest officials who work at the grassroots levels are supposed to help process forest rights claims are not aware of the provisions of the Act. N.C. Saxena (member, National Advisory Council) who reviewed FRA implementations observed that the provision or lack of it in the FRA are such that we are losing the opportunities to economically empower tribal communities.

7.5 FOREST TRANSITIONS

In response to the two problems of global climate change and worldwide habitat loss, scientists during the late 20th century have tried to create a science of sustainability leading to transition to a sustainable society. Alexander Mather coined the term 'the forest transition' to assert that

stocks of forests change in predictable ways as societies undergo economic development, industrialization and urbanization.

Forest transitions can be seen when forest recoveries take and place and the forest cover is regained. Forest transitions can occur in overlapping circumstances. In some places economic development has led to the creation of enough non-farm jobs as a result farmer have pulled off the land. As a result, there is spontaneous regeneration of forests. In some other places scarcity of forests has prompted governments and communities to plant trees and adopt afforestation methods.

There a number of factors responsible for forest transitions: Forest transitions begin during a period of deforestation. Initially there is decline in the forest cover due to logging and other activities. Once the land is cleared it is converted into fields for agricultural production to cater to the increasing demands of cities. Eventually agricultural expansion ends. There could be two lines of arguments as to why this happens. First the farm workers leave the land for better paying non-farm jobs. Due to the shortage of farm hands, agricultural enterprises become unprofitable. So, the more remote and less productive fields and pastures are abandoned by the farmers. These lands then revert to forests. The loss of farm labourers stems from urbanization and economic development, a situation which is referred to as 'the great transformation'. Sometimes politicians reinforce this trend in forest cover when they agree to purchase the abandoned lands and create parks and forest reserves.

The second line of argument states that the loss of forests during agricultural expansion triggers a counter tendency. In places with high or growing populations, and little ability to import forest products, the prices of forest produce increases. This induces landowners to plant trees instead of crops or pasture grasses. Scholars observe that this price-related dynamic is the reason for the increase in forest cover in India in recent times. This sequence of events is called 'forest scarcity path' to the forest transition. Politicians use this path when they create programs to reforest marginal lands in response to floods and rising prices for forest products.

In this context, it would be pertinent to understand the sometimes-ambiguous term 'forests. According to the FAO (Food and Agricultural Organization of the United Nations (FAO), 2001), an area can be considered as 'forests' when the canopy provided by trees covers at least 10% of an area, so both young and old trees could count as forests. Forests transitions necessarily concern long-term changes in the extent of forests, not the short-term, cyclical changes in forest cover that occurs in case of shifting cultivation, wherein cultivators clear land and then abandon it several years later.

Four concepts related to forest transitions need clarifications here. 'Deforestation' takes place when people clear land of trees and there is no possibility of regrowth. 'Forestation' refers to a general process in which forest cover increases. 'Afforestation' takes place when forest cover increases as a result of planting of trees on land without trees.

'Reforestation' occurs when forests naturally regenerate on previously forested lands.

There is no single way in which forest transitions occur. The process of forest transitions occurs at varied scales; covering a sub-region or an entire country, or several countries within a large geographical region. A forest transition may reduce the local environment of a population, however, the total impact of the population on forest lands may increase if they begin to import substantial amounts of wood products and agricultural commodities from far away regions. Those regions that export agricultural products may also in all probability experience a forest transition as these regions produce food for consumption in nearby urban centres. Point in case is South America, which was involved in international trade in cotton on a large scale during the 19th century. This resulted in widespread reversion to forest during the 20th century.

An analysis of forest transitions has important policy implications. It cannot be denied that forest transitions have an immense potential for slowing soil erosion, improving water quality, and slowing climate change through carbon sequestration (appropriation). So, governments can speed up the transitions and later ensure that the transitions continue.

It should be noted that while these transitions do not make a substantial positive impact on biodiversity. Nevertheless, they do provide an impetus to carbon and soil conservation, a fact reflected in the Kyoto Protocol. So, the governments should place a high priority in promoting them. Since there are economic incentives for carbon sequestration as mentioned in the Kyoto Protocol, the Kyoto instrument has the potential to provide a political-economic impetus for forestation in all countries.

7.6 CONCLUSION

Land management systems which encompass versions of conservation are significant because these help in understanding broader contexts of decisions. Post-independent forest policies are a continuation of colonial forest policies. These have reinforced the state's claim over forest resources by alienating and labeling forest dwellers and their practices as a threat to the forest. The politics of forest conservation is closely linked the politics of the region. This is true especially in the context of the North-South dynamics. There is a debate around the term 'conservation', which is heavily loaded term. The term is associated with symbolic and political meaning. Forest laws rather than benefitting the tribals and forest dwellers, have legitimized the government's control over their natural resources. So, by regulating the forest, the state has been able to control the lives of the subjects dependent on the forest resources for their survival.

7.7 SUMMARY

The forest management literature has now begun to consider the broader context of decisions, and gain insight into how the present and future

decisions in one location may have repercussions to other regions or locations.

The term 'conservation' as we know of it today encompasses special expertise, and skills related to the protection of forests.

The above debate on indigenous versus scientific conservation has become politically charged.

Scientific forestry involves systematic planning, cultivation and sustainable exploitation of woodland, with restricted local community access to local forests.

The FRA recognized the 'right to land' and as an extension, the 'right to culture' as an important human right, keeping in mind the significance of land as a sustainer of culture especially to the forest dwellers.

An analysis of forest transitions has important policy implications.

7.8 QUESTIONS

- Discuss the meaning of the term conservation.

- Examine the issues related to conservation practices with reference to resourse use in India.

- Evaluate how the understanding of land transitions can help in forest restoration.

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8

LANDSCAPES

Unit Structure

8.0 OBJECTIVES

- To examine the alternative perspectives on the human-environment relationships

- To gain insights into the socio-cultural meaning of environment

8.1 INTRODUCTION

There exist numerous elements in nature such as the flora and fauna. However, each physical element is more than just an element; since it carries multiple symbolic meanings that emanate from the values by which people define themselves. The builder, the farmer, the hunter - with their interactions with nature - are definitions of who people are. The natural environment in its physical form is transformed symbolically to reflect these self-definitions. These symbolic meaning and definitions are socio-cultural phenomenon, as they emerge in the context of a social reality. These are not just physical phenomenon, but they transform any natural place into a symbolic landscape. In this section we attempt to understand the meaning of Common Property Resource, how a group creates definition of and relationship with nature and the environment and its impact in terms of land use patterns and land management.

The extension of agricultural areas, suburban sprawl and other forms of land use represent the most dramatic human-induced transformations of the global landscape during the past half century. The landscape

transformations have raised some important questions. Against the backdrop of global warming, threat to wildlife and indigenous groups and the destructive effects of these landscape transformations, there is a growing network of social and natural scientists. They have identified a range of factors that have shape land use changes.

8.2 COMMON PROPERTY RESOURCE (CPR)

Common property resources include all such resources that are meant for the common use of the villagers. Traditionally, the rural Common Property Resources include community land, community pastures and grazing grounds, community forest, wildlife, protected and unprotected forests, wasteland, common dumping and threshing ground, watershed drainages, village ponds and tanks, rivers and rivulets and their banks and beds which are regulated by social conventions and legally enforceable rule. In pre-British India, a very large part of the country's natural resources were freely available to the rural population. These resources were largely under the control of local communities. Gradually the State took control of these resources. It resulted in the decay of community management system, and by extension CPRs available to the villagers declined substantially over the years. Over a period of time villagers have a legal right of access only to limited or some specific categories of land and water resources. Nevertheless, CPRs play a central role in the life and economy of the rural population.

Another related concept is that of the Common Land Resources (CLR) which is a sub-category of Common Property Resource. The term CLR is used to refer to property that is owned and defended by a community of resource users. It also refers to property owned by no one. Even if the government owns the property people have 'common access' to it. The CLR in a village includes the land administered by the village panchayat or community. Apart from this there are certain demarcated areas in every village for various purposes and are accessible to all the villagers. They include areas for processing of agricultural produce, storing of grains, firewood, for recreational or religious purposes, for village fair, marriages, weekly markets, etc.

8.3 LANDSCAPES

Land is not just a physical entity, but carries deep meaning and significance to those who inhabit it. As members of a society, humans tend to attribute meanings to objects and action. "Landscapes" are the symbolic environments created by human act of conferring meaning to nature and environment. Human give the environment definition and form from a particular perspective based on their values and beliefs. Thus, every landscape is a symbolic environment. These landscapes are reflections of who we are and the culture in which we are grounded. Human transform physical environment into landscapes through cultural symbols.

Landscapes as definitions of ourselves

Our understanding of nature and human relationships is through the cultural expressions of -who 'we' were, who 'we' are, and who 'we' hope to be- at this point in place and space. Landscapes reflect the cultural identities, which are about 'us', rather than the natural environment. When we try to identify and understand the potential human consequences of changes in the natural environment, it is important that we understand these consequences from the many cultural definitions that create landscapes.

Cultural groups transform the natural environment into landscapes. They do so by using different symbols that give different meanings to the same physical object or condition. These symbols and meanings are socio-cultural phenomena. They are social constructions and result from continuous negotiations in the cultural context. According to Mead, the world in which humans live is meaningless. Meanings are not inherent in the nature of things. It is humans that attribute symbols and meanings to things that comprise landscapes. These meanings are reflections of what people in cultural groups define to be proper or improper among themselves and between themselves and the physical environment.

Sometimes we go through a process of negotiating and renegotiating new symbols and meanings. This happens when events or technological innovations challenge the meanings of these landscapes. Several examples from around the world show how landscapes are reflections of socio-cultural symbols and meanings that define what it means to be a human being in a particular culture, time, space and place. The first case in point is Narmada Valley project, which envisages building of hundreds of on the banks of the Narmada. The Narmada is the holiest of holy rivers for the followers of the Hindu religion. Over centuries, thousands have undertaken a healing pilgrimage and walked along the 1,600 miles along the Narmada river banks. The World Bank, which financed the project, typically focused on cost-benefits analysis, solely from the economic perspective. What was not discussed was the ways in which the ambitious project impacts the human-environment relationship along the Narmada River – a frame that focuses on the landscape that reflects Hindu people's definition of themselves. Also, it is pertinent to consider how the healing powers of the Narmada River would be affected through the damming process.

8.4 INTERPRETEVISTS UNDERSTANDING OF LANDSCAPE

Man's relationships with the natural environment could be understood through the subjective symbols and meanings through which a group of people socially constructs the landscape. Varied conceptions of nature are created from different social and cultural contexts and nature becomes indistinguishable from that context. The concept of landscapes helps us to understand conflict within communities or differences between ethnic groups in relation to the natural environment, with the same culture.

A sociocultural group constructs a landscape from nature and the environment through symbols that have cultural meanings, and then reifies it. In the context the concept of 'reification' has a specific connotation. Berger and Luckmann (1967) suggested that "reification means that man is capable to forgetting his own authorship of the human world. Human beings no longer are understood as world-producing, but in turn are products of the 'nature of things'. Here, the landscapes, which are symbolic social constructions, become part of the world taken for granted. Humans are constantly engaged in one activity: they seize natural phenomena, convert them into cultural objects and reinterpret them with cultural ideas. So, the natural world is presented like a kaleidoscope, which gives different impressions which are organized in our minds.

The reified symbols and meanings, which are shared, mostly taken-for-granted, emerge through the process of negotiation. These very meanings define social and natural phenomena and the situations in which they are located. Over a period of time cultural groups continue to reconstruct and redefine their past, present and future realities. This is done through ongoing social interactions, which involves process of negotiations over the meaning, symbols, and definitions of the situations.

In the context of above, it is necessary to understand how a landscape can sustain a particular meaning especially in the face of technological, economic and social changes. Scholars observe that there exist shared convictions of what is proper form of system of values. An individual has a structure of beliefs that are comprehensive, and so taken for granted, that the individual is not consciously aware of it, but at the same time is indistinguishable from the person's self-definition. It is here, within the structures of beliefs that most important symbols are embedded and maintained.

Check Your Progress

1. What do you mean by landscapes?

8.5 IMPLICATIONS OF LANDSCAPES

There is sociological explanation into why different groups clash over the meaning of change in the natural environment and how the potential consequences of this change are defined. For the scientists, a small modification to the environemt may not be a big deal, but it may be defined as a threat to the fundamental meaning of a group's lifeworld, a fact which explains why tribals and the indigenous people resist such change. The framework of landscapes is important as it provides a medium to interpret sociocultural consequences of technological and environmental changes from diverse perspectives of all participants.

Applied Implications

The sociological framework of landscapes emphasizes that the environment has multiple meanings. These meanings are symbolic reflections of how people define themselves. Any change in the

environment can pose a challenge to these cultural expressions and therefore will require a renegotiation of the meaning on the part of people as themselves and in terms of their relationship with the environment. Scholars argue that international development agencies could benefit from the understanding of a cultural group's landscape. A point in case is Bali's agricultural system which was maintained by a network of temples and priests. The priests determined whether the water goddess approved the plans by individual villages to tap a new spring or divert water from a canal. Temple priest were in control and allocated water resources to hundreds of farming villages. They also set up schedules for planting and harvesting, and allowing the land to lie fallow for a common period. Unintentionally, their religious practices were sustainable – they led to soil conservation and minimized crop losses due to pest attacks. Scholars observe that the Bali study demonstrates that local wisdom is important, but it often considered substandard and therefore overlooked by development agencies as they try to fix what is not broken.

Political Implications

As the natural environment becomes a central feature of national and international debate, the question about whose landscape is protected, or altered, or exploited becomes important. All events in the political realm depend on and also reflective of power relationships. In the political arena of environmental issues, self-interests are expressed through a group's definition of itself as reflected in its landscape. Not all landscapes are associated with power. Those landscapes that represent the group with the highest degree of power will be deemed as important. Only those particular landscapes then come to dominate and by extension influence social actions and the allocation of social resources.

There are a variety of factors which influence the processes of creating, sustaining, negotiating, and imposing symbolic landscapes. Three important and underlying factors are: 1) the ability to define what can be defined as 'information, in this case, the ability to construct knowledge, 2) the control of this socially-constructed information, and 3) the symbolic mobilization of support. All these factors are also interconnected with the larger process of impression management.

A variety of cultural media are involved in the process of impression management of landscapes. Laws, customs, myths, legends, novels, poems, stories, histories, biography, art, photography, music, and movies are some of the media through which landscapes are created, recreated and redefined. Another issue is that of differential access to the media. To what degree landscapes are maintained or changed will determine which one landscape – one set of cultural self-definitions- is likely to prevail over others.

There is a major shift in the power relationships that enable certain landscapes to dominate political decision-making, and this is even more obvious in the postmodern world. Today due to the explosion of mass media, there is a world full of images that lie outside of people's everyday

experiential knowledge. Cultural groups that at one time had zero or limited access to media have acquired new resources and are mobilizing support for those landscapes, especially at the global level. The interesting fact is the global struggle over landscapes is displacing the development interests' landscape by the landscape of the indigenous people.

8.6 LANDSCAPE MANAGEMENT

Landscapes have been transformed by humans at an unprecedented rate especially during the 20th century. This has changed the land use patterns, created sprawls in urban areas and disturbed farming activities. A systematic approach emphasizes the role of strategic actions by the State and other interested parties in transforming landscapes.

New disciplines have come up which attempt to understand the complex relations between human and nature and provide a useful framework for sustainability. One such discipline is landscape ecology, which takes on an interdisciplinary, multiple purpose and multiple scales approach. It core vision is consistent with the Sustainable Development Goals identified by the UN 2030 Agenda for Sustainable Development. This approach attempts to general sustainable landscape solutions by integrating ecological and social mechanisms into system thinking.

A sustainable landscape is a normative concept. It recognizes that landscape functions are the foundations for solutions to problems of human well-being. This may carry different meanings to different stakeholders. The identification of problems and their solutions is directly interrelated to the belief systems, values and preferences of people who inhabit a landscape. Therefore, even in the presence of scientific solution, dialogue with the stakeholders is necessary. There should be an interface between scientific knowledge and human experiences in the context of local landscapes.

The concept of sustainability is a recent addition to the understanding of landscapes. Scientists, development agencies should create a modeling approach which facilitates building a vision about a future landscape. Scientists could being in the concept of natural capital and determine the level of natural capital that is critical for maintaining the capacity of the landscapes to provide long-term landscape benefits to future generations. This can be established through dialogue with the local community.

Another related issue is that of landscape governance. There is extensive literature to suggest that creating sustainable landscapes is more successful when local communities feel a sense of ownership in their future environment. Therefore the focus should be on collaborative and participatory approaches in landscape governance. It allows a better use of local knowledge, more effective social learning and more responsibility during implementation of strategy.

Any discussion on land management needs to be based on an assessment of the political and economic context that determines outcomes. Conflict

over land is the most common form of litigation not only in India, but in many countries, impeding social and economic development. Administrative hassles, costs and time required to register, and conforming to official norms can become a source of corruption. Thought needs to be given to effective land use planning taking into context the shared meanings that people have about their land. With the advent of neoliberalism, land acquires the status of a commodity whereby its social and cultural value is reduced. The commodification of land thus, has increased social and economic inequality and set a stage for political instability. All over the world the competition for land has intensified. It has now come to dominate public discourse and media attention globally, and this is where the responsibility of the society becomes even more relevant.

8.7 CONCLUSION

Some scholars argue that the sociological framework of landscapes is anthropocentric. The framework of landscapes reiterates that what is significant is the meaning of environmental change for the cultural groups which have incorporated that aspect of the physical environment into definition of themselves. In other words, biophysical, or socio-cultural changes in the environment are meaningful, only if the cultural groups acknowledge them through a redefinition of themselves. It is important to factor in political dynamics of the place and how it shapes the definition of the situation and the social actions that result from these often varied and divergent landscapes. Also important is to understand how power relationships operate especially in the ever increasing global struggle for control over landscapes and environmental change.

8.8 SUMMARY

"Landscapes" are the symbolic environments created by human act of conferring meaning to nature and environment.

Our understanding of nature and human relationships is through the cultural expressions of -who 'we' were, who 'we' are, and who 'we' hope to be- at this point in place and space.

Varied conceptions of nature are created from different social and cultural contexts and nature becomes indistinguishable from that context.

The sociological framework of landscapes emphasizes that the environment has multiple meanings and studies the applied and political implications of landscapes.

New disciplines have come up which attempt to understand the complex relations between human and nature and provide a useful framework for sustainability.

It is important to factor in political dynamics of the place and how it shapes the definition of the situation and the social actions that result from these often varied and divergent landscapes.

8.9 QUESTIONS

1. Examine the interpretevists' understanding of the human-nature relationships.

2. Discuss the applied and political implication of landscapes.

3. Evaluate the significance of the understanding of human-nature relationship with specific relation to sustainable development.

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9

URBAN SPACES: URBAN SYSTEMS AND POLLUTION; URBAN COMMONS.

Unit Structure

9.0 OBJECTIVES

- To learn about Urban spaces

- To learn about Urban systems and pollution and the future threats related to pollution

- To understand the concept of Urban commons

- To make aware of the contemporary transformations, changes within cities and its impact on human being both at individual level and at larger scale.

9.1 INTRODUCTION

The Urban cities have always attracted lot of capital in terms of investment by Government, Corporates houses, foreign direct investments and even International Agencies like World Bank, International Monetary Fund etc. Cities irrespective of any country have most updated facilities available facilities in a country like Better Healthcare services, International Schools, Premier Hotels, Race Courses, Faster transportation, Theatre's etc compared to that of the villages. The major institutions like banks head quarters, Police etc. are also located in cities. To experience the city life, lakhs of tourists also visit every year. In addition, thousands of migrants also come t the city everyday and try to build a city. All the above details reveal the importance of city. Hence, it is important to learn about cities and its changing spaces, systems, problems like pollution. As this would determine and influence the emerging development in the Tier I, Tier II functioning.

As students learning this chapter, would be very much beneficial as through this chapter one would become more aware of the concepts, issues related to urban spaces. It would help to gain different perspectives and angles and thereby assist in constructing one's own opinion.

In this chapter we will look into three main topics. Firstly, Urban space, secondly urban systems and pollution and thirdly urban commons.

9.2 UNDERSTANDING URBAN SPACES

Public spaces help in developing human contact and helps in physical and social well being of individuals especially senior citizens. Communities develop through spaces as it brings people together[i]. As spaces bring people together, gives a platform to build connections. There are several studies which reveal that open spaces like garden create a positive impact on the communities. Every city has certain open spaces which is famous among people and they connect historically and emotionally. Like in Dombivli – Phadke Road, Pune – FC Road. These are places individuals, groups and spend their time for relaxing, talking, playing, eating, shopping etc. There are certain urban spaces which has historical relevance like

Azad Maidan, very important during social movements like Azad Maidan, Jallianwala Bagh, Jantar mantar

9.3 ANCIENTS CITIES AND USAGE OF SPACE

The ancient civilizations like Mohenjo Daro Harrappa which is more than 4000 years old was ahead of its time in terms of its infrastructure. They had invented sewage systems which predates the Rome civilization. There are several studies which are also point out that due to climate change and the floods, droughts in the Indus valley there was mass migration[ii] and people moved to small villages.[iii] [iv]

9.4 GOVERNMENT ROLE ON IMPROVING URBAN SPACES

The recent budget 2022 also revealed the growth of expenditure in terms of developing the infrastructure. The allocated amount will further increase in upcoming years to come as we still have enough scope for improving our infrastructure. Especially beyond the Metropolitan cities. However, let us look into some details of the recent budget details on infrastructure development.

The budget has laid a strong emphasis on essential development engines, with Prime Minister Gati Shakti promising to link infrastructure like as roads, ports, trains, and logistics, among other things. KAWACH, an indigenously produced technological tool can helps avoid rail accidents, would be applied to a total of 2,000 kilometres of rail network. Over the following three years, 400 new-generation high-speed Vande Bharat trains will be produced. The national highway network is also estimated to by 25,000 kilometres in 2022-23[v]. Reforms like these will boost the mobility of products and services and establish the groundwork for economic growth in the coming years.

Check Your Progress

1. Explain ancient city and the usage of spaces.

2. Discuss Urban space with reference to positive and negative effects of smart city.

9.5 TECHNOLOGY AND SPACE

- **Urban spaces, Smart city and monitoring**

With the increasing number of smart cities there is also heavy usage of surveillance systems like camera, drones, and similar devices in the Urban spaces. This has both positive and negative effects. Positive effects include these surveillance systems would help in reducing crime, the data generated could be further used to understand patterns, behaviors or even to spread message or even to take quick actions during crisis like situation. For example, during pandemic robots were used to pass on fruits, foods to Covid patients. These robots were even used as interactive tool for the

patients where humans could be avoided. Some of the negative uses of electronic devices like Drones too exist – like anyone could monitor anothers home using a drone and there could be theft, or similar crime could take place. Drones have also been used during war, or to attack another country. The negative effects also include that the government would have greater control over people lives, movement, and actions. Newer challenges would also emerge like those who are not digitally aware they could be victim any time or even would find it difficult to cope with the changes and may even feel alienated[vi]. Especially senior citizens who lived in a different setup when they grew up and with rapid digitalization they would be left alone. There are other fears like large corporations could use people's data and manipulate them according to their own needs.

There are people like Elon Musk trying to find space other than earth to live upon for human beings like Mars. There is Non-fungible token through which digital artwork, collectibles could be sold in the internet instead of using physical space. Even the emerging metaverse where people would be able to meet on a digital location.

9.6 CASE STUDIES OF CHANGING URBAN SPACES

9.6.1 Signal Schools

Signal schools are those schools which operate beneath the highways of cities like one such exists in Thane near teen hath naka bridge. Generally, the space beneath bridge is left empty, some migrants also use it as temporary shelter or childrens use to play cricket on these spaces. Some old vehicles would also be lying in such spaces. However, a creative use of this space is done by constructing schools. In these schools generally the childrens who work and stay at traffic signals attend. Such kind of initiative helps both the use of space, proximity to the residence for the children's who work on signals[vii].

This concept is even been tried in Ahmedabad. Here buses will be placed at signals and these buses would operate as mobile schools. This has been planned through the Ahmedabad Municipal Transport Services (AMTS) which will have around 15-20 children and two teachers per bus. A budget of 887 Crore has been allocated for this purpose. [viii]

9.6.2 Pandemic and Offices

Pandemic brought about lot of changes in the nature in which organizations operated. Physical meetings got converted into online meetings. Compaines are also completely going online. Employees are given remote work and several freelancers are also hired. Digitizing the business has led to saving costs in terms of canteen, transportation expenses, infrastructure expenses etc. In metropolitian cities where space is very expensive this problem is solved by having online presence and meeting once or quarterly by hiring workspaces/ resorts/ meeting halls for a day or two. This kind of change in work culture and space is more

visible of late with ecommerce businesses and even with Information technology based industries.

9.6.3 Coliving and Coworking spaces

Coliving spaces are were individuals are sharing same space, it could be a room or that of room with bunk beds. This is done in order to reduce the cost. There is also coworking spaces available where instead of having individual offices, people work in shared spaces.

9.6.4 Capsule Hotels

Capsule hotels are inspired by that of the Japan. These are tiny pod like rooms which have air conditioning, basic services. Recently in Mumbai Central Railway station one such hotel was launched.

9.6.5 Gender and Spaces

- **The Gender Park**

Gender Park was built in the year 2013 by the Department of Women and Child Development, Kerala. The park is set up in Kozhikode (Calicut), Kerala. The campus is around 24 acres and through this park research on gender issues, advocacy, training, economic and social initiative is conducted. The goal of the park is to bring about gender equality, fulfill the sustainable development goals and even to have a dedicated space to work for this purpose. The United Nations and the Gender Park has entered into an equal partnership for developing the Park as a South Asian hub for creating gender equality[ix].

- **Koodo Nest**

Koodo literally means nest in Malayalam. Koodo is an initiative by the Kerala Government in which shelters are built on the main building of the bus stand of Trivandrum. This shelter home is also located in ten minutes walking distance from that of the railway station. Here women can stay night for free. The room has bunk beds with Air Conditioner and basic sanitation facility. It is very helpful for women who are travelling to the city for multiple purposes like applying admission, appearing interview for treatment into the city etc and want to just spend a night in the city. This kind of facility is also helpful for those women who are thrown out of their home in the middle of night and have no place to go. It is also very helpful for women who are beggars, sellers at traffic signals etc. who sleep at roadside and live in fear and could be victim anytime. There is also another option of accommodation with the same Kood where females can spend night for 150 rs. For 24 hours and again repeatedly stay in for few more days. This kind of initiative is very sustainable and healthy specially in urban cities where women travel, commute, get late to reach at home at night etc.

Check Your Progress

1. Discuss the concept of Signal School.

2. Discuss the Koodo (Nest) from Kerala.

9.7 URBAN SYSTEM

An urban system is a collection of cities that are linked together through economic fluctuations, information dispersion and exchange, through the movement of goods, capital, and people (Pred,1977). Cities under such a system do not flourish, stagnate, or fall in isolation; rather, they adapt as a reaction to the development or decline of other cities. While cities can be viewed as nodes in a network, the study of urban systems focuses on interurban linkages rather than geographical growth or internal structure. With the world's increasing urbanisation movement, the economics indicates that cities will become increasingly important as basic units of national and international trade. It can also be noted that as the population of the economy grows, the urban system also self-organizes into a highly regular hierarchical framework.[x]

Changes in interurban interdependence, on the other hand, might result in the dispersion of economic activity throughout a vast territory. The improvement of transportation and information networks has created interest among various urban system researchers and they are trying to look and study into the functioning and growth of cities[xi].

9.8 URBAN POLLUTION

The World Health Organization (WHO) estimates that air pollution causes around seven million premature deaths worldwide each year, putting it on par with smoking and bad diets. Cities like Delhi are examples of how worse pollution could be dangerous. Even schools and colleges are periodically shut down during heavy pollution release. Vehicles are allowed to operate on alternate days to reduce the pollution. There are reports where it is said that the indoor air quality is worse than that of the outdoor[xii]. Urban Pollution is also leading to reverse migration whereby people are going back to their own villages; this is especially with the case of retired senior citizens. Even White-collar professionals who can stay at home and work have started to move back to their own villages. This trend has even increased during the pandemic period.

9.8.1 NASA, Intergovernmental Panel on Climate Change (IPCC) Report

The intergovernmental Panel on Climate Change (IPCC) a leading international body which studies climate change reported recently that Heat, humidity, sea rise will make India uninhabitable if emissions are not cut. Mumbai has a serious risk of being flooded with rising sea level. On the other hand, Ahmedabad is seen as facing serious cases of urban heat island. Other cities like Chennai, Patna, Lucknow, Bhubaneshwar would have rise in heat and humidity. National Aeronautics and Space

Administration (NASA) has said that several coastal cities would be submerging under water by 3 feet. They have also pointed out that due to global warming, with the rise in the temperature, nearly 12 Indian cities would go under water like Mumbai, Chennai, Kolkata.

9.8.2 Sustainable methods – Case study of Gujarat

Let us now look into a case study of a Lake in Gujarat which is using a innovative method to keep the lake clean. The staff follow a simple method through which any kind of trash is saved from getting into the water which could be through away by the visitors. Before entering the lake everyone has to pass through a gate and take a ticket as entrance fee which is 10 rupees. After this the bags would be checked by the Watchmen or watch women. The plastic bottle has to be kept at the gate itself. A deposit of 10 rupees has to be paid for the bottle as deposit and one gets a slip. While exiting the lake one can exit from any gate and by showing the slip the 10 rupees one gave as deposit gets it back. The individual coming from the same gate can pick up the same bottle too. Through such a practice no one throws anything into the the lake and the cleanliness remains maintained.

9.9 URBAN COMMON

Meaning of Urban Common

The concept of "urban commons" has evolved as a result of growing urbanisation and a substantial proportion of the people residing in cities. It can be viewed as a solution to contemporary urban concerns such as urban housing and inequality, among others. The urban commons concept was founded on the idea that public spaces, urban land, and infrastructure should be open to and usable by urban populations, in order to create and sustain a range of commodities and services. This might be crucial very crucial for the survival of any population, particularly the most vulnerable. The fundamental values upon which this movement is founded are those of sharing, collaboration, civic participation, inclusion, equity, and social justice, among others. Civic partnerships in this context also talks about the people from local communities, government, business, academics, and local nonprofit groups that work together to manage the urban commons.

9.9.1 General Overview on Urban Common

The urban commons is a relatively new concept that has emerged in the last decade, but it has its roots in a long historical and intellectual lineage that stretches from the social movement in England to the classic essay Hardin 1968 to the Nobel Prize-winning work Ostrom 1990, which includes many examples of community-governed common pool resources.

Several publications examine generally shared urban resources. Lee and Webster (2006) examines urban areas as vulnerable to the tragedy of overconsumption, with enclosure as the likely outcome, particularly in the context of modern urban and economic growth. Fennell (2015) considers urban interaction space to be a common pool resource, that is vulnerable

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to collective action. On the other hand, Ostrom's work tries to recognise the ways in which communities and local residents may collaboratively manage shared urban resources.

Foster (2011) analyses urban community gardens, park conservancies, neighbourhood watch organisations, and business improvement districts as Ostrom-like commons in the urban environment. Based on a pluralist analysis of how the commons has been defined by diverse scholars and intellectual traditions, Foster and Iaione (2016) propose that the entire city is a common. Foster and Iaione 2019 elaborate on how shared urban resources and community activity in cities may generate common goods that differ from the development and features of traditional common pool natural resources. Many experts believe that neither Hardin's nor Ostrom's conceptions of the commons are especially useful for understanding how urban commons form.

According to Huron (2015), the distinctive element of urban commons is that they are produced in a saturated, disputed environment by strangers coming together in the setting of a capitalist market. Stavrides (2016) studies the city as a strongly regulated state site, a site of capital creation and excess, and a site of resource competition. Dellenbaugh et al. 2015 in a collection of articles examines the different ways that urban commons contain both material and immaterial resources, ranging from housing, urban infrastructure, and public spaces to culture, labour, and public services, via a range of case studies.

Finally, various contributors reveal in Borch and Kornberger 2016 that the concept of the urban commons involves a variety of critical and interdisciplinary perspectives rather than just answers or questions about urban governance in which subcultures, and poverty exists among other aspects of contemporary urban living.[xiii]

Let us look this from a local example –

In several parts of Mumbai, Thane areas there are Free gym equipments being put up. One can witness childrens using it as play instruments. Senior Citizens, Women also use these instruments. People now have a reason to exercise as these instruments are nearby their own homes, lanes. It also creates a kind of peer pressure, when others are using it. When others are exercising. At times, one can even view womens wearing rain coat in heavy rains of early morning exercising.

The above image is captured near Teen hath Naka, Thane on such free equipments example of urban common.

Check Your Progress

1. Explain the sustainable method of lake at Gujarat.

2. Discuss the history of Urban common

9.10 SUMMARY

Urban spaces play integral part in maintaining the health of the city dwellers. Especially open spaces like gardens, playgrounds create an impact on the health of individuals of that locality. Even in historical traditions like ancient civilization - Mohenjo Daro also had proper sanitation facilities. With the increase of the population in cities managing urban spaces are going to be a big challenge. Urban space is also being blended with smart city concepts in recent times. Innovate methods are used to manage free spaces like Signal Schools. The second topic in this chapter is that of Urban system where it is seen as a collection of cities that are linked together. These cities can be viewed as nodes in a network. This chapter also discusses about Urban pollution and its associated impact on city dwellers. Discussion on the reports which is given by NASA has also been discussed where it is said that nearly 12 cities would be submerging before 2050. The last section of the chapter deals with urban common description. Foster and Iaione (2016) propose that the entire city is a common. Foster and Iaione 2019 elaborate on how shared urban resources and community activity in cities may generate common goods that differ from the development and features of traditional common

pool natural resources.Thus, through this chapter multiple areas from the field of Urban sociology has been covered which are contemporary and useful in understanding urban City and it's multiple issues.

9.11 QUESTIONS

1.   Discuss Urban Pollution and future threats due to climate change.

2.   Explain Urban Common

3.   Explain two case studies of changing urban spaces

4.   Explain in brief government measures related to urban spaces

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GLOBAL ENVIRONMENTAL ISSUES & MOVEMENTS

GLOBAL ISSUES & LOCAL IMPACTS: MNCS/SEZS & RESISTANCE MOVEMENT

Unit Structure:

10.0 Objectives

10.1 Introduction

10.2 Global Issues and Local Impacts

10.3 Multinational Corporations:(MNCs)

10.4 Special Economic Zones(SEZs)

10.5 Resistance Movements

10.6 Gorai Amusement Park

10.7 Conclusion

10.0 OBJECTIVES:

- To discuss global environmental issues.

- To understand the problems and impact of climate change.

- To acknowledge the roles of MNCs and SEZs.

- Understanding the resistance movements.

10.1 INTRODUCTION:

The environmental crises faced by developing nations are the result of poverty. For example, Third World countries often lack the resources and sanitation facilities to provide the public with clean water. Tropical deforestation, caused by the slash-and-burn techniques of poor farmers, is another dilemma.

If the environment truly is a worldwide issue, then the solutions may also be universal. However, international agreement on environmental issues is often difficult to achieve because countries are not at equivalent stages of

social and economic development. Developed nations rely significantly on government regulations to protect and restore the environment; In the last decade, environmental degradation has seen extraordinary global trends. These trends or patterns include unsustainable consumption of resources, prevalent poverty, and uncontrolled growth of population, rapid industrialization, urbanization, globalization, and deforestation. The health and lives of the population living on this planet are heavily compromised for the sake of socio-economic development. Global environmental issues need planned actions and concrete responses not only by international communities but individually. These issues are not bound within borders, they touch every nation and adversely affect the lives of all animals and plants. These global environmental issues have long-term adverse effects on ecosystems, people, and societies and are always difficult to reverse over a short duration of time.

Human impact and management of the natural environment and concerns for maintaining biodiversity are emphasized throughout. The rapidlygrowing population and economic development are leading toseveral environmental issues in India because of the uncontrolled growth of urbanization and industrialization, expansion and massive intensification of agriculture, and the destruction of forests. Major environmental issues are forest and agricultural degradation of land, resource depletion (water, mineral, forest, sand, rocks etc.), environmental degradation, public health, loss of biodiversity, loss of resilience in ecosystems, livelihood security for the poor.

10.2 GLOBAL ISSUES AND LOCAL IMPACTS:

Globalization is the connection of different parts of the world. Globalization has been shown to increase the standard of living in developing countries, but some analysts warn that globalization can have a negative effect on local or emerging economies and individual workers.

Globalization has also led to an increase in the transportation of raw materials and food from one place to another. Earlier, people used to consume locally-grown food, but with globalization, people consume products that have been developed in foreign countries. The amount of fuel that is consumed in transporting these products has led to an increase in the pollution levels in the environment. It has also led to several other environmental concerns such as noise pollution and landscape intrusion. Transportation has also put a strain on non-renewable sources of energy, such as gasoline. The gasses that are emitted from the aircraft have led to the depletion of the ozone layer apart from increasing the greenhouse effect. The industrial waste that is generated as a result of production has been laden on ships and dumped in oceans. This has killed many underwater organisms and has deposited many harmful chemicals in the ocean.

Due to globalization and industrialization, various chemicals have been thrown into the soil which has resulted into the growth of many noxious weeds and plants. This toxic waste has caused a lot of damage to plants by

interfering withtheir genetic makeup. It has put pressure on the available land resources. In various parts of the world, mountains are being cut down to make way for a passing tunnel or a highway. Vast barren lands have been encroached upon to pave way for new buildings. While humans may remain as the gofer with these innovations, these can have long-term effects on the environment. Various studies over the years have found that plastic is one of the major toxic pollutants, as it is a non-biodegradable product. However, plastic is of immense use when it comes to packaging and preserving goods that are to be exported. This has led to increased use of plastic, causing widespread environmental pollution.

It has made so many changes in our lives that reversing it is not possible at all. The solution lies in developing effective mechanisms that can check the extent to which it can impact the environment. Researchers are of the view that the answer to this problem lies in the problem itself, that is, globalization itself can lend support to building a better structure that is economically feasible and environment-friendly.

10.3: MULTINATIONAL CORPORATIONS :(MNCS):

A multinational corporation (MNC) has facilities and other assets in at least one country other than its home country. A multinational company generally has offices and/or factories in different countries and a centralized head office where they coordinate global management. Some of these companies, also known as international, stateless, or transnational corporate organizations, may have budgets that exceed those of some small countries.

Many multinational enterprises are based in developed nations. Multinational advocates say they create high-paying jobs and technologically advanced goods in countries that otherwise would not have access to such opportunities or goods. There are subtle differences between the different kinds of multinational corporations. For instance, a transnational—which is one type of multinational—may have its home in at least two nations and spread out its operations in many countries for a high level of local response.

In the process of globalization, MNCs play a significant role. Also, after being miles away, they interact with the local and small producers directly, thereby combining the markets. Their job leads to investments and goods being traded that contribute to interconnections between different nations.

Loss of national sovereignty, as the host nation, cannot control what an MNC does in other nations, which may be inimical to its interest.

The political interests of MNCs may mirror the political interests of their respective home nations, and this may be detrimental to the host nation. For instance, an American MNC may serve the interest of America, while operating in India.

The host nation may lose control over its economy. Negative impact on the host's balance of payments because of heavy imports of spares and components. The exploitation of the hosts' replenishable natural resources leads to the dwindling of these. The exploitation of the labor of the host when the country needs itPrior to 1991, multinational companies did not play many roles in the Indian economy. In the pre-reform period, the Indian economy was dominated by public enterprises. To prevent the concentration of economic power the Industrial Policy 1956 did not allow the private firms to grow in size beyond a point.

By definition, multinational companies are quite big and operate in several countries. While multinational companies played a significant role in the promotion of growth and trade in South- East Asian countries they did not playmany rolese in the Indian economy wherthe e import-substitution development strategy was followed. Since 1991 with the adoption of industrial policy of liberalization and privatization, the role of private foreign capital hasrecognizedgnised as important for rapid growth of the Indian economy. Since the source of the bulk of foreign capital and investment are multinational corporations, they have been allowed to operate in the Indian economy subject to some regulations.

Some of the issues due to MNCs;

1. Potential Abuse of Workers

Multinational companies often invest in developing countries where they can take advantage of cheaper labor. Somemultinational corporations prefer to put up branches in these parts of the world where there are no stringent policies on labor and where people need jobs because these multinationals can demand for cheaper labor and lesser healthcare benefits.

2. Threat to Local Businesses

Another disadvantage of multinationals in other countries is their ability to dominate the market. These giant corporations can dominate the industries they are in because they have better products and they can afford to even offer them at lower prices since they have the financial resources to buy in bulk. This can eat up all the other small businesses offering the same goods and services. Chances are, local businesses will suffer and worse, close down.

3. Loss of Jobs

With more companies transferring offices and centering operations in other countries, jobs for the people living in developed countries are threatened. Take the case of multinationals that create offices in developing countries for their technical operations and manufacturing. The jobs given to the locals of the host country should be the jobs enjoyed by the people where the head office is located.

Multinational corporations have both advantages and disadvantages since it creates jobs but can also end up in the exploitation of workers, among other things.

10.4 SPECIAL ECONOMIC ZONES(SEZS):

A special economic zone (SEZs) is an area in which the business and trade laws are different from the rest of the country. SEZs are located within a country's national borders, and their aims include increasing trade balance, employment, increased investment, job creation, and effective administration.

SEZs can help attract investment, create jobs, and boost exports – both directly and indirectly, where they succeed in building linkages with the broader economy. Zones can also support global value chain (GVC) participation, industrial upgrading, and diversification. Zones are a key investment promotion tool.

The purpose behind their establishment is to provide an internationally competitive environment to increase exports, by making available goods and services free of tax and duties supported by convergent infrastructure. Any individual, co-operative society, company, or partnership firm can file an application for setting up of Special Economic Zone

Special Economic Zones (SEZ) in India is a specially delimited enclave. Most importantly, the economic laws in this geographical area are different from the prevailing laws in other parts of India. An SEZ is deemed as a foreign territory for matters that relate to the trade tariffs, duties, and operations.

Moreover, the SEZ Act of 2005 governs all the regulatory and legal aspects related to the development of SEZs and also regarding operations of units under SEZs.

Asia's first EPZ (Export Processing Zones) was established in 1965 at Kandla, Gujarat.Tamil Nadu has the highest number of operational SEZs (40), followed by Karnataka (31) and Maharashtra (30).

1. Workers Condition:

There have been several reports on potential violation and exploitation of labour rights in the SEZs, the workers are met with poor working conditions, mandatory overtime, and other pressure tactics to meet the deadlines. Compared to outside the zones, SEZs do provide workers with higher wages, which comes at the cost of extended hours of work and intensive labour.

The issue is further aggravated by the relaxation of the labour laws within SEZ in multiple countries, India being no exception. On close inspections, the Special Economic Zone Act 2005 has not established if the nation's labour laws work the same in the SEZs. Under subsection 3 of sec12 of the SEZ act 2005 the labour commissioner does not hold power, authority,

or jurisdiction, contrary to it the Development Commissioner holds the administrative power who has also been handed the labour commission's administrative power. The government pertained to this decision under the pretext of encouraging foreign direct investment. The Labour commissioner looks to determine labour market outcomes with respect to both working conditions and decision-making whereas the Development Commissioner whose responsibility is to make sure the units' productions are not hindered and that the SEZ provides profit. This explains why labour rights would not be the subject of interest and concern. For jurisdiction, a special Court has been appointedfor SEZs and under Section 23 of SEZ, the state government needs to delegate one or more courts for all SEZ affairs. Trade unions have also been restricted in the SEZs, the state governments are increasingly making amendments to the labour laws restricting trade union activities, and workers are also restricted from performing any form of Strike.The absence of trade unions causes the hire and fire of the workers. Women are also subject to exploitation due to a lack of bargaining power.

2. Land Grabbing:

There has been a constant struggle between EEZs and Farmers, which has only intensified due to the SEZ Act of 2015 passed under the pretext of economic prosperity. Within 6 years, there are 378 SEZs notified, of which 265 are operational (Ministry of Commerce & Industries). These endeavours require hectares of land, in perspective, the area required for the 150 formally approved SEZs requires 26,800 hectares of land. Leading to acquiring fertile land under cultivation. This has caused conflict against farmers, at instances land has been forcibly acquired or compensations have not been allocated properly, this has led to protests in many parts of the nation.

10.5: RESISTANCE MOMENT:

The period of globalisation has reached a new level of development, with governments pushing for 'inclusive growth' and 'capacity building' as a result of continuous technological improvement. However, behind such lauded development successes lies the death of millions of marginal farmers and labours whose soil and resources are used for the sake of achieving the national goal, creating a paradoxical situation known as the "crisis of success." In spite of claims of sustainable and inclusive growth for marginal farmers and workers, recent development efforts have exacerbated the problem of involuntary displacement, loss of land and livelihood, unemployment, and human rights violations, putting the creation of an egalitarian society at risk.

The government opened the floodgates to Multi-National Corporations (MNCs) and big industries by introducing SEZs in 2005 under the guise of rural development, industrialization, augmentation of foreign currency reserves, and employment generation, exacerbating the problem of development-induced displacement and making the situation worse for farmers. This exposes the governing politics, which lacks social

accountability by remaining unconcerned about the condition of farmers. Despite numerous revisions and amendments, India's land acquisition and resettlement and rehabilitation Acts serve as catalysts for strengthening authoritarian elites against the weaker majority representing the bourgeoisie.

The crisis has developed a battleground on India's streets, with farmers, laborers, and marginal communities supported by civil society, human rights activists, NGOs, and environmentalists on one side and the government, MNCs, industrialists, and planners on the other, disrupting the peace.

Delhi Mumbai Industrial Corridor (DMIC), Jaitapur Nuclear Power, Raigad and Gorai, Water Rights (Sangli) are all examples of Resistance Movments.

10.6: GORAI AMUSEMENT PARK:

On the outskirts of Mumbai, the island of Gorai supports livelihoods for thousands of fishing workers who have been disrupted by the arrival of India's largest amusement park Esselworld which stretches onto 65 acres of land.

On 8 July 2000 thousands of fishermen and women took on protest by blocking the ferries and staging a peaceful dharna, they demanded the demolition of the artificial jetty constructed by Esselworld, the jetty blocked their fishing roots they also demanded that the ferries used for visitor transport need to be withdrawn, they urged that the smaller ferries be used as it posted less environmental threat and is more people-friendly. The peaceful protest turned into a gory sight as the Esselworld agents with their henchmen attacked the fishermen, in contrary to taking action, the political party with Esselworld filed a complaint against the fishermen leading to arresting of 500 and a case against 5, the particular incident was not the first of its kind the fish workers r often subject of violence by the park.

Ever since the establishment of the largest amusement park the livelihood of the locals and the ecological balance, the sustainable usage of the natural resources has been under question. The fertile land and the sea of Gorai were a source of livelihood for the fishers and farmers which did not only act as a source of sustenance but their very culture and identity. There was an underline right the fish workers enjoyed which was unwritten and these rights were stepped on by the modern state agencies advocation intensive development of tourism and amusement. The underline principle is that any land/area without an individual 'patta' (individually owned) is terra mullius (Nobodies land) and hence open for acquisition by any part and also as the Indian law does not recognize socially-established community rights that are basic for their livelihood, there skills and knowledge compared to the modern technical skill are imperative for the nation's development. Thus, local people's culture, livelihood, and ecological space are the subject of less concern to the need of capital.

The plan of opening an amusement park was put forth by the Pan India Parayatan (Esselworld), which caught the eyes of Maharashtra's revenue minister Narayan Rane. Consequently, violating the Coastal Zone Regulation, he gifted the company 700 acres of common property of the fish workers to the company. The social activist of Gorai points out that the land acquired is three times more than what is claimed officially. With those 700 acres of mangrove, the land was destroyed in the village, these were the traditionally used fishing grounds, it was lifesaving and an asset of the community. The building of artificial jetty and running of ferries blocked the fish worker's access to the sea destroying their boats and nets along with ruining the rich fishing ground of the creek.

With forceful land grabbing the park also instead of building an alternative waste disposal system directed the chemical effluents and waste directly into the sea. Which leads to pollution of the sea and adversely affects the ecosystem. These externalities would not pose a threat in the initial days as they would be managed by the natural Physico-chemical processes in the coastal water. However, with the passing days, this would push the ecological balance to its edge becoming a subject of concern.

There has been a sharp decline in the natural resources of the area credited to the building of the amusement park, for comparison Susheela Cardoz, an activist working with fish workers points out that from January-April the catch amount equals null, forcing the fishermen to apply for welfare scheme which provides the workers with nominal relief although the scheme is not applicable for women.

Gorai village had only 1 sweet well, enough to fulfill the needs of the villagers but today water is a scarce resource in the village. Esselworld requires approximately 200 tanks of water per day (one tank carries 10.000 lit), for this, the park has planted bore wells of 500 horsepower, leading the groundwater level to lower and also making the groundwater salty making it unfit to consume. The municipality adhering to the issue agreed on providing 12 water tanks to the villagers but in reality, very little water ever reaches the village, on closer look the water is bought by the builders at a higher price. So, as the elites enjoy the amusement Esselworld has to offer a community of locals pass their day in scarcity. Availability of electricity is another major concern, where Esselworld is well lit throughout the year the villagers around still dwell in dark.

Esselworld far from providing amusement, in reality, is the cause of the destruction of the ecology and livelihood. They block the sea grounds, and exploited the resources and people, disturbing the very essence of balance coexistence between the locals and nature. The Maharashtra government far from supporting the locals has been aiding Esselworld, to suppress the voice of the fish workers they have adopted means from direct police repression to rewriting of the region's history through falsehood.

On filing a case of coastal zone regulation, the State government desperately tried to help Esselworld by recreating the course of history. For instance, the collector of Mumbai suburban district, in his letter dated

April 7, 2000, addressed to the Tata Electrical Company, claims that there is a damn in the area and urges them to build their tower within the damn for transmission of electricity without destroying the damn. However, the locals claim this to be another attempt of Esselworld to meddle and change history by reconstructing the geology of the land. This was not the first attempt by the authority and the park, including false claims by the Maritime Board, backed by the Maharashtra population control board headed by then Mumbai Suburban Collector. Claims on similar non-existing bunds were made on April 2, 1990, based on an outdated court order. People's revolt against a furtive building of damn was crushed by the help of local police.

Maharashtra state government frenzies to grip on supporting Esselworld comes with no astonishment. Ruling parties in India have gone to lengths to latch on to economic profits and they have never hesitated to gift public land for profit and commercialization has all the more helped developers to leach on community lands and threaten the livelihood of the people.

10.7: CONCLUSION:

Globalization has indeed provided with great opportunities but it is also very crucial to examine the coast of these advancement, on closer inspection it is evident that the marketed ideas of globalization have its own downfalls. The ill effect has been evident in the increasing environmental concerns, protest and petitions. Under the label of Economic Prosperity weak majority are been exploited and marginalized, which is subject of no concern to the governing authorities. It is evident that today the benefits of the development are reaped not by the once displaced by it.

Today as globalization and development projects are labelled as problem-solving, what is seen is the ideas have only led to major social and environmental issues. What we need is an inclusive and sustainable growth which leads humanity with minimum downfalls.

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SUSTAINABLE DEVELOPMENT, CLIMATE CHANGE AND ANTHROPOCENE DEBATE

Unit Structure

11.0 **Objectives**

- To understand the concepts- Development, Sustainable Development, Climate change and Anthropocene

- To identify and critically assess the relationship between climate change and sustainable development

- To reflect on Anthropocene Debate.

11.1 CONCEPT OF DEVELOPMENT:

The term development has multiple meaning, interpretation and theories. Reyes (2001) defined it as a social condition, where the nation attempts to satisfy the needs of its population by rational and sustainable use of natural resources and systems. For Todardo and Smith (2006) development is a multidimensional concept that stress on changes in social structures, attitudes, institutions and economic growth to reduce inequality and eradicate absolute poverty. The main objectives of development thus is a) To increase accessibility and distribution of goods and services essential for sustenance.

b) To ameliorate the standard of living of people including health, education, material well -being and self-esteem.

c) To increase people's freedom to choose through expanding their choices and freeing them from dependence on others, poverty and misery.

For Coetzee (2001) the goal of development therefore is well-being that is to be attained through security, livelihood and sustainability. Burkey (1993) defines development as a process through which an individual developsself-respect, gains self-confidence and become self-reliant, acquiescent, and tolerant by becoming aware of his or her potential and limitation. It occurs when an individual works with others, updates oneself and actively participate in socio-economic and political development of the communities. Development is not only to realize human potential and empower them but also to expand human potential and institutional capacity to enhance proper utilization of resources towards sustainable living. Rawls view development as distributive justice. It means providing basic needs to all by the government and access to and expansion of goods and services to all social classes and equal sharing of burden of development among all. Henderson (2011) states that in Rawls view, the aim of economic development should be to establish and maintain the just institution so that society can function as a fair system and cooperate over time from one generation to another.

Check Your Progress:

1.   What is development?

2.   What are objectives of development?

11.2 SUSTAINABLE DEVELOPMENT:

The development thought after World War II began to change as number of colonies started gaining independence. According to Arndt (1987) there began agreement in the West that international effort is required to aid development of less developed countries. It was also during this period when the concept of economic development evolves outside the ambit of Marxist discourse. Consequently, 1950s onward economic development was associatedwith economic growth and became a significant goal of Western economic policy particularly for Poor countries.

From late 1960s onwards there was rise of modern environmental movement with renowned work such as Silent Spring, A Blueprint for Survival and others led to spread of awareness about environmental issues. This ushered the phase of questioning the economic growth. Seers' work 'The Meaning of Development' (1969) stressed that economic growth fails to achieve social development. He argued that development indicators such as unemployment, poverty, inequality give true picture of development.

Purvis et al (2019) contend that it was also the period where the leading work such as "Limits to Growth", and "Small is Beautiful" expostulated

that modern growth linked economy ensue unsustainability and contended that capitalist induced economic growth of the West is in conflict with ecological and social sustainability.

The first global summit to discuss human impacts on the environment was organize by UN in Stockholm. It was an attempt to conciliate economic development with environmental integrity. Our Common Future, 1987 published by World Commission on Environment and Development dealt with sustainable development and later in Earth summit-Rio-de-Janerio, 1992 around 170 countries were signatories of very significant documents on sustainable development agreeing to preserve the environment. The summit resulted in establishment of the UN Commission on sustainable development beside convention on biodiversity, principles onmanagement of forest, framework convention on climate change, and Agenda 21. Agenda 21 was a bold step towards devising new strategies to invest in future to attain sustainable development for which it recommended new approach to education, new techniques of preserving natural resources, new process and system of participating in sustainable economy.

In tune with the Brutland Commission report,1987, the third assessment report defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". The two important features of the sustainable development includes:

• needs of the poor which should be addressed

• constraint inflicted by the state of technology and social organization on the environment's potential to meet present and future needs

The World Commission on Environment and Development believe sustainable development to be a dynamic concept and the prerequisites of sustainable development are as follows:

• The political system for efficacious participation of citizens in decision making

• The economic system that produce surpluses and technology for establishing a self-reliant and sustained society

• The social system that reduces tensions and bring out solution for unbalanced development

• The production system that brings about harmony between ecology and development

• The technological system that is on never ending pursuit of finding new solutions for sustainable development

• The international system that leads to sustainable businesses and finances and

- The administrative system that is pliable, adaptive and possess self-correcting mechanism

Thus, Brutland commission played a significant role in bringing sustainable development in to international policy discourse. It stressed that environmental problem was due to extreme poverty of the Southern countries and the unsustainable way of consumptions and production of the Northern countries. However, there is no universally accepted definition of sustainable development but all the definitions cover one or more elements such asclassify what to develop, recognize what to sustain, know the linkages between what is to be sustained and developed and envisage these linkages from future perspective. Sustainable development aims at long- term stability of the economy and environment that need to be achieve by coalescing economic, environmental and social issues in all the facets of decision-making process.

11.3 OBJECTIVES OF SUSTAINABLE DEVELOPMENT:

Duran et al, 2015 presents following objectives of sustainable development:

- Economic System should aim at maximum production of goods and services in the technosphere, increasingly efficient utilization of mineral resources, energy and information flows, adapting technologies etc.

- Social System should aim at just allocation of goods and services at local, national and global level. It should provide proper training to all the stakeholders in social and economic process, restructuring political, institutional and management systems to encourage flexibility and self-monitoring of social and economic system. Evolving interconnected economic, social and environmental system and preserve and protect cultural diversity to enhance adaptation of chance.

- Ecological system should intend to maintain biodiversity. Economic development should not be at the cost of environment. A balance should be maintained between economic development and environment preservation for every one's wellbeing and sustainable livelihood.

Check Your Progress:

1. Why do we need sustainable development?

2. What are aims of sustainable development?

11.4 CLIMATE CHANGE:

Resnik (2016) states that climate change is not new phenomenon; it has been occurring from past four billion years and will continue to happen. Historically natural factors namely volcanic eruptions, continental drift,

process of evolution, changes in solar radiation and others were responsible for climate change but in the last couple of centuries, human activities like industrialization, deforestation, agriculture, developmental projects and transportation have started affecting the climate, thereby accelerating the process of climate change.

The leaders and the decision makers across the globe are grappling to find befitting solution to deal with traditional development related problems such as poverty, malnutrition, unemployment, and health but concurrently are also facing the new threats in the form of climate change, global warming, and environment degradation. Mishra et al (2020) suggests that impacts of these threats is visible in the form of floods, droughts, cyclones, and rising sea levels. It is now an established fact that climate change and global warming would severely disrupts economies if concerted actions are not taken. To tackle these issues, they are looking towards sustainable development or development, which last and low emission path.

The UN organized an Earth Summit in the year 1992 where the UN Framework Convention on Climate change was adopted and the nations agreed upon to stabilize greenhouse gas concentrations in the atmosphere so that preventive measures be taken to deal with interference of human activity with climate system. Since 1994, UN has been organizing "COPs' to bring together almost all the countries for global climate summits. This year too COP26, held and many promising announcements made. Leaders from around 120 countries pledged to halt and reverse deforestation by 2030, which also happens to be the year of Sustainable Development Goals to eradicate poverty and secure planets future.

Outcome of United Nations Convention on Climate Change, Glasgow

- Promising commitment to provide funds to aid developing countries to deal with climate change

- Adopting global methane pledge

- Resolving of the pending issues and strengthening the implementation of Paris Rulebook

- But the efforts to reach 1.5 degrees Celsius target still pending

- Announcement of setting long term zero goals by many countries, India pledge net zero emission by 2070.

11.5 CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT:

Climate change and development are intertwine; it influences the important natural and human living conditions and thereby affects social and economic development. Climate change pose severe challenge to development as it influences population growth, poverty and accelerate urbanization. Millions of people in the developing countries probably are

force to lead a life full of misery and poverty due to their dependence on natural resources and restricted capacity to adapt to the changes occurring due to climate change. Climate change adversely affect agricultural production, health, biodiversity etc. It also restricts their opportunities for sustainable development. For example, F.E. Bureau (2021) reports that Indian economy is severely expose to the damage caused due to climate change. It will adversely affect five sectors of the Indian economy that constitute 80 percent of the GDP-manufacturing sector, service sector, transport sector, travel and tourism, retail and construction sector. Even agricultural sector will not be spare which contributes 16 percent of the GDP. It is believed that India will suffer loss of around thirty five trillion dollars in the next half of the century.

- **Climate Change and Millennium Development Goals:**

Goal 1: Eradicate extreme hunger and poverty:

Due to climate change there is increase in weather-associated disasters that threatens the livelihood of people. It leads to regional food insecurity and thereby increases the vulnerability of marginalized. It will also aggravate the water scarcity issue.

Goal 2: Achieve Universal Primary Education:

Climate change will result it loss of livelihood so more children will be pushed to work as child labor. Displacement and migration of people will increase that will increase drop-out rate and low enrolment of children.

Goal 3: Promote Gender Equality:

Women constitute two third of the world's poor and therefore are worst affected by climate change. They are more dependent on local resources for their livelihood. Due to their social, economic and political disadvantage position, they have restricted coping capacity. Therefore, it is essential to respond to climate change by adopting gender sensitive strategies.

Goal 4: Reduce Child Mortality, Goal 5: Better maternal health, and Goal 6: Combat HIV/AIDS, Malaria and other diseases:

Undernutrition is one of the major cause of death among children below 5 years of age. Therefore, efforts to improve food security and nutrition will be a challenge due to climate change.

Climate change influences human lives in multiple ways. It not only threatens food supply, shelter, water but also health. According to WHO, period between 2030 to 2050 will experience additional deaths of around 250,000 people due to climate change related problems such as malaria, diarrhea and heat waves. Pregnant women and children would be more vulnerable to climate change induced diseases such as malaria, diarrhea, dengue etc. Countries with poor health infrastructure will suffer the most. Therefore, there is need for climate resilient health infrastructure and system.

Goal 7: Ensure Environment Sustainability:

Climate change will bring out fundamental change in ecosystem and result in increased soil erosion, salinization, loss of biodiversity, desertification, drought, flood, cyclone, landslides, loss of coral reef, increase in incidences like wild fire, insect outbreaks, challenge biodiversity of wet lands, extreme weather conditions such as heat waves and rising sea levels. It will pose a serious challenge to environment sustainability.

Goal 8: Develop a global partnership for development:

To tackle climate-induced changes concerted global efforts areneeded. Beside investment in mitigation and adaptation, international cooperation and coordination among the countries of the world will be required to achieve environment sustainability.

11.6 CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT GOALS:

SDG 13: Climate Action

The SDGs also called as Global Goals, 2015 aimed at ending poverty, protecting planet and ensuring that by 2030 people enjoy prosperity and peace globally. The seventeen SDGs are integrated in such a way that action in one will affect the others. The SDGs stress on balanced development that brings social, economic and environment sustainability.

Target of SDG-13:

- To reinforce resilience and adaptive capacity against climate change

- To integrate climate change measures in policies, strategies and planning locally, nationally and globally

- To improve environmental education, raise awareness and capacity at human and institutional level regarding adaptation, mitigation and warning

- To address the need of the developing countries by mobilizing fund to take action regarding mitigation, implementation and operationalization of Green Climate Fund etc.

- To device and promote strategies for building capacity for effective planning and management of climate change in developing and small island countries particularly targeting women, marginalized and the youth.

Check your progress:

1. What is climate change?

2. Explain the outcome of recent UN convention on Climate Change.

11.7 ANTHROPOCENE:

The term 'Anthropocene was used by Crutzen and Stoermer in their paper 'The Anthropocene', 2000 in the Global Change Newsletter. They contend that human activities especially emission of green house gas has altered the planet in the last few hundred years, and we have entered into a new geological age, 'The Anthropocene'. Another important piece of work presented by Crutzen in 2002 was 'Geology of Mankind' in Nature. Since then geologists, social scientists, historians, archaeologists, ecologists, philosophers and climate scientists are using the concept in diversified way. The nucleus of the concept 'Anthropocene' is thus that human activity dominates the climate and environment and change Earths natural cycles and systems to such an extent that it is irreversible. The concept Anthropocene includes soil erosion, sediment transportation due to urbanization and agricultural activity, environmental changes such as global warming, increase in sea level, ocean acidification, changes in biosphere, increasing number of domestic animals, proliferation and dispersion of new minerals, rocks such as fly ash and plastic and number of techno fossils.

Jan Zalasiewicz, British geologists along with his colleagues in 2008 proposed to adopt 'Anthropocene Epoch' as a formal geological interval. Voosen (2016) and Zalasiewicz et al (2017) states that in 2016, scholars from the Anthropocene Working group within the International Commission on Stratigraphy recommended that the world should officially recognize the Anthropocene as a new geological epoch. The term Anthropocene gained wider acceptance in 2011 with the publication of thematic issue of Philosophical Transaction of the Royal Society.

Anthropocene Debate:

The term Anthropocene indicate beginning of new geological era marked by human dominance. There are evidences, which suggest that human activities has altered earth system processes such as atmosphere, biosphere, hydrological and geological process that reversing it is impossible. Therefore, to protect earth humans need to alter and steer away from climacteric point in the ecosystems. This geological postulate led to scientific and interdisciplinary Anthropocene Debate.The debate also continues over when to mark the beginning of Anthropocene Epoch. Malhi (2017) stress that the concept originated in natural science but now has surpassed across the disciplines including social sciences and humanities and broader cultural and political discourse on how to live and respond to the expostulations of a human dominated planet.

The key points in the Anthropocene Debate are:

• Has the Holocene era ended and humanity has entered into a new geological eraand if it has entered the new era then when did it begin. According to geologists, the Earth history can be divided into eons and eons into epoch, ages and era. The geologists use the term golden spike to define the changes that is evident in the rocks, ice or mud as boundary

marker. The IUGS still claim that we are in a Holocene era that began 11,700 years ago after the ice age. Therefore, if we say that we are in Anthropocene age then geologist should define the geological boundary between the Holocene and Anthropocene.

• Numerous parallel debates on Anthropocene are social, institutional and political in nature. For example, Barry and Maslin (2016) contend that politics involvedat the institutional level gives authority only to IUGS member and exclude other parties to have voice. Beside each group of scientist will define Anthropocene differently which would further fuel politics within the scientist fraternity. Other critical issues such as global inequalities and injustice, social power and unequal exchange of goods and services are ignored and human dominance is over emphasized.

• Vansintjan (2015) states that the view whether there is Good Anthropocene or the Bad Anthropocene differs. Mark Lynas in The God Species contend that as we are entering in to an era where human control and dominate the environment, therefore it is our responsibility to control it further and use device like genetic engineering and other modern technology to use ecosystem efficiently. The Eco modernists believe that the present situation gives opportunities for prosperous future. However, the critics argue that the more ugly future awaits human kind. It will be challenging for the humans as they accelerate the sixth extinction event on the planet.

• The Anthropocene debate raises questions about knowledge production, Anthropocene and inclusivity. The Anthropocene debate has led to tension not only between natural and earth science but also in social sciences and humanities. There is debate over who produces Anthropocene knowledge, how the knowledge are produced, and which method is used to produce Anthropocene knowledge, and what measures are used to authorized and circulate the knowledge created. There is lack of inclusivity in the concept as it lack ethnic, gender and interdisciplinary perspective in knowledge productions.

• While some argue to use alternative terms such as Capitalocene, Anglocene, Technocene or Necroceneinstead of Anthropocene.

On the positive side, the Anthropocene debate has brought out the limitations and multiplicity of viewpoints of various scholars and disciplines. Based on this differences an attempt can be made of developing transdisciplinary approach to sustainable Anthropocene science, which would be more inclusive and would help to build more sustainable relationship with the Planet Earth.

11.8 SUMMARY:

There is twofold relationship between sustainable development and climate change. Climate change affects core natural resources and living conditions of humankind and their sustenance along with social and economic development. Furthermore, human activities influence

ecosystem, leads to climate change, susceptibility and sensitivity. Therefore, there is a need of policies that address both the issues-climate change and sustainable development.

Since mid, 20th century number of studies have documented the issue of environmental crisis due to human induce activities called as Anthropocene. This has led to a debate in natural and social sciences as scholars from different discipline present parallel narratives of causes of ecological crisis, challenges due to climate change and threat to planet Earth. Their views are differing and perplexing. Therefore, the natural scientists, social scientists, the activists, policy makers, politicians and others should make collective efforts to understand Anthropocene that does not mean that there has to be consensus. Nevertheless, it should encourage communication across the disciplines and recognize the fact that no one discipline is in a position to comprehend the Anthropocene Era.

11.9 QUESTIONS

1. How does climate change influence sustainable development?

2. Write a note on climate change and sustainable development goals.

3. Critically examine Anthropocene debate.

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INTELLECTUAL PROPERTY RIGHTS

Unit Structure

12.0 OBJECTIVES

- To understand intellectual property rights in the context of environment

- To gain insights into the traditional knowledge domains and their contestations

12.1 INTRODUCTION

It is a well-recognized fact that the conventional forms of social and economic development are proving to be inadequate in developing countries. Worldwide there is recognition that the most important assets for a community, company or a country are not so much the physical capital but its intellectual capital. The only wealth that people in the developing countries have is their traditional knowledge systems which are rarely harnessed or built upon. It is necessary to understand the evolution of knowledge, innovation and practices over several ages. These complex knowledge systems have evolved within socio-cultural and institutional contexts. Post globalization these knowledge systems which have been accumulated by the innovative spirit of our ancestors are facing threat of invisibility and extinction. In this section, we will seek to identify the contested domains of individual, community and public domain knowledge systems.

12.2 INTELLECTUAL PROPERTY RIGHTS (IPR)

Conservation of the environment which includes biodiversity as well as the knowledge systems requires cultural, institutional and technological innovations apart from a deep-rooted ethical value set. A conservation ethic cannot be reinforced solely through material incentives. What is required is that communities create and maintain the space and decide what to conserve, for how long, at what cost, and for whom. The challenges of consumerism which puts pressure on the natural resources cannot be counteracted only through cultural and spiritual values. The material needs for survival can put undue pressure on the limited resources. This needs to be resolved through putting up a portfolio of incentives for conservation and for use of environmentally friendly technologies and institutional arrangements.

There is a close relationship between technology, institutions and culture, with each dimension playing an important role. In order to understand this relationship, there is a need to understand the role of various incentives, including the ones offered by the Intellectual Property Rights regimes. The technology provides the means to change the production function or the ratio of inputs to outputs. The institutions provide the rules, norms and values under which, (a) the choice of inputs to be transformed may be decided, (b) the means for transformation, (c) the scale of exploitation and the various other ways that social existence is achieved. Simply put, technology provides the building blocks of resource transformation, institutions provide the norms and rules by which this transformation is achieved through collective choice, and culture defines the range of choices that are or are not sanctioned by the community.

The incentives for technological change and innovation must be built on the lines of sustainable consumption, a communitarian spirit, a concern for the future generations and adopting of solutions which will be best suited in the specific cultural and historical context. Use of a specific mesh size of the net to catch fish, use of dynamite in fishing, use of trawlers which travel into deep seas, and invasive methods of fishing; all of these are counterproductive. Therefore, any use of resource should be done in consultation with the collective rules evolved by the community. It cannot be denied that innovations are necessary for improving technical efficiency of any task, as it reduces hard labour, and is more lucrative. But technological changes on its own cannot ensure positive environmental outcomes especially in the absence of sustainable institutions and compassionate culture.

Intellectual property rights regimes have always been a domestic concern. However, the forces of globalization have catapulted it into the world trade agenda. The IPR regimes are driven essentially by the rich developed nations whose companies hold majority of the world's patents. Property rights generally exclude others from the commercial use of protected knowledge for a given period of time. The right does not allow for the use of that knowledge. Such a right will be determined by other laws of the land, such as laws related to food and drug administration,

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pollution, etc. Defining a boundary relating to knowledge and resource use is not new, but problems may arise when the IPR instruments impinge on creativity, knowledge and innovation produced by individuals and small communities.

Conventional Intellectual property law emerged out of model of innovation over a particular time in history. Therefore, it does not fit well into many systems as it is difficult to trace the origins of traditional knowledge. The World Trade Organization's (WTO) Trade-Related Intellectual Property Rights Agreement (TRIPS) ideally should serve the interests of both, rich as well as poor countries. But it is severely lacking when it comes to extending promised benefits to the developing countries. The developing countries have two major concerns: 1) access to medicines (public health), 2) protection of resources (environment) and traditional knowledge.

Throughout history, natural capital has acted as the engine for economic progress. Natural capital can be guided by social capital, some of which is also ethical capital. Social capital in the context of IPR can be understood as community based institutional arrangements which help in the conservation and reproduction of natural capital.   The essential feature of such capital is trust and reciprocity. Ethical capital can be understood as investments and institutional arrangements that may be governed by ethical norms. These norms comprise of accountability, transparency, reciprocity and fair play in terms of both humans and non-human beings. The intersection of social and ethical capital is possible only when common property institutions follow ethical values. Intellectual capital is understood as knowledge about natural capital as well as other kinds of technological and social interactions. Intellectual capital comprises of literature, databases, folklore and other form of forms and informal sources of knowledge and wisdom. Part of intellectual capital constitutes intellectual property from which the knowledge producers can exclude others from commercial exploitation for a given period of time.

12.3 CONTESTED KNOWLEDGE DOMAINS

Many knowledge systems in developing countries are based upon conservation of environment and biodiversity resources. A community creates its own conservation ethic and sustains it not only with material incentives but also spiritual, cultural, institutional and technological innovation.   In the context of contested knowledge domains, it is necessary to understand the concept of valorization.

Valorization:

One of the major objections to providing incentives for conservation is that valorizing a resource may increase the possibility of over-exploitation of that resource. Several traditional conservationists are cautious of any scheme which will add value to local resource. By value addition (valorization), local communities will find it lucrative and attractive to extract resources at a higher rate, endangering the resource base itself.

Conservationists believe that valorization can go hand in hand with better norms of conservation as communities will appreciate the long-term benefits of such exercise. However, they refuse to recognize the possibility that communities, with the help of local knowledge as well as public-spirited scientists, may develop efficient and sustainable technologies which require lesser dependence on raw resources.

One of the contentions relating to valorization is that it creates a paradoxical situation, that while the values of the intellectuals are not supposed to be polluted or distorted by higher incomes, the institutional fabric of poor people is supposed to be so weak that it will be corrupted by higher incomes. Thus, at the moral level, one of the effects of avoiding valorization of resources is to keep people poor so that biodiversity can be protected and conserved.

Sometimes, resource exploitation can be a result of the failure of institutional guidelines and framework. The example of 'Taxol' is a case in point. Taxol was identified by the US National Cancer Institute to be an important means to developing anti-cancer treatment. As a result, the national corporation in India began excessive harvesting and extraction of the bark of this tree. Later, one of the major Ayurvedic companies that exported this bark and its extract to the USA started extracting the relevant compound from leaves when almost all the old trees had been harvesting in the Shivalic foot hills in north India. This is an example of valorization leading to unsustainable and excessive use of resource. This example reflects not so much a problem of technology, or valorization of the resources, but the failure of institutions. Therefore, it can be concluded that it is not just the incentive but also the institutional context in which the incentive is provided that makes a lot of difference as far as environmental impact is concerned.

Overlapping domains of knowledge:

Emergent knowledge could be a result of individual or group-community effort. Some of this knowledge may spread only locally, characterizing it as community knowledge. While other forms of knowledge may spread across communities, regions and countries, and become public domain knowledge. Within community knowledge, certain aspects are may be restricted in terms of scope and accessibility, while other aspects may be available in the public domain. Sometimes individuals may share the knowledge within their own community as well to those outside their community, making it public domain knowledge. On the other hand, some knowledge may be produced by individuals who keep it confidential and restricted in term of access. Individuals may build their expertise by observation, experimentation and innovation based from traditional knowledge source. In this case individuals owe some acknowledgement to their communities for the opportunity to make individual innovations.

The communities hold the right to decide the conditions under which individuals may or may not be able to share their expertise or other knowledge with outsiders or even with other members within their own

community. The case in point is Australia, where a piece of art that was designed by a person from the native Australian community was printed on a currency note by the Reserve Bank. The community objected to such usage because it argued that the individual did not have the right to assign the individually designed art work to outsiders without the permission of the community. They further argued that the art work had a symbolic meaning and was conceived after ritual and taboos sanctified by the community and therefore was sacred to them.

Every society has different traditions and mechanisms to protect their intellectual property rights. In the Patan region of north Gujarat, there is an old tradition of textile production popularly known as 'patan silk'. This region has only three families who are involved in this tradition involving use of natural vegetable dyes. The families fiercely guard their trade secrets to such as extent that this information is kept away from their daughters, as they believe that the daughters will compromise their secrets as they will go into another family after marriage. Only daughters-in-law are introduced to this tradition. Another example is that of a community in northern Bengal which had a tradition of making an offering of a famous variety of mangoes to the King. The community often punctured the seed of these mangoes with a thin needle so that nobody could grow these mangoes without their permission. Within several communities there are taboos that imply that once a remedy is revealed to another person, it loses its value. All these examples show that the concept of drawing a boundary around the use of knowledge and resources, including biological resources is not a new one.

Sometimes overlap of the varied domains of knowledge could trigger conflicts and contestations when producers and users of knowledge have unequal access. The contested domains of knowledge are analyzed on the basis of certain characteristics such as novelty and non-obviousness and later compared to the formal scientific knowledge. It should be noted that the differentiated domains of knowledge interact with varying domains that govern the natural resource regimes in a given area. Thus, knowledge about the use of a particular herb or a tree found in a private garden may exist among the members of a community, and in some cases, may be shared widely to such an extent that it reaches the public domain. Similarly, knowledge about a plant found in a public forest may be known only to an individual healer.

Present IP mechanisms are of limited help in this regard. Certain revisions in the IP mechanisms will be able to provide the incentives and not disincentives for individuals and communities to share their knowledge in the public domain. Therefore, one of the challenges before policy makers is to identify a portfolio of incentives (both monetary and non-monetary) which will encourage individuals and groups to conserve biodiversity and associated knowledge systems.

12.4 PROTECTING INTELLECTUAL PROPERTY RIGHTS

Scholars have observed that the present IP instruments are of limited help in regard to protecting traditional knowledge systems for the benefit of local communities. But they argue that with sufficient modifications, these instruments may help to provide incentives and not disincentives for individuals and communities to share their valuable knowledge in the public domain. One of the challenges before policy makers is to chalk out a portfolio of initiatives which will provide monetary as well as non-monetary benefits to individuals and groups that are working towards conservation of diversity and associated knowledge systems.

There are several ways in which ecological ethics works, and one of them is the Honey Bee Network. The Network's first encounter with this phenomenon was when they were making a film on grassroots innovation and outstanding traditional knowledge with the help of Indian Space Research Organization. The Honey Bee Network has documented more than twenty-three thousand innovations. These innovations are either of contemporary origin or based on traditional knowledge primarily from India and also other parts of the world. These innovations are very basic. However, the diffusion of these innovations is extremely slow despite the Honey Bee newsletter being published in eight different languages for over a decade. This has resulted in the younger generation assuming that all technological solutions to their problems come from outside especially from the west rather than from within. The problem is aggravated because of a defeatist mentality and pervasive cynicism. There is a serious dearth of specific instruments that protect intellectual property. The legal frameworks which are designed to help small innovators may also inhibit the articulation of sharing of knowledge. That is, innovators may prefer to keep their knowledge secret.

There is an urgent need to protect IPRs of poor communities. This need was expressed by the Honey Bee Network much before the TRIPS agreement and the Convention on Biological Diversity (CBD) were established. It was accepted that the only resource in which the poor people are rich, in their traditional knowledge systems. Making this knowledge a public domain resource would deprive the economically poor, knowledge rich communities of their major strength. The philosophy that drives the organization is based on the seven Es: Efficiency (wherein the role of technology and IP instruments in extending incentive for innovation needs to be highlighted), Equity, Excellence, Environment, Ethics, Education and Empathy.

It is worth mentioning that IP instruments are only one of the many possible incentives for dealing with material and individual rewards. These on their own are necessary but not sufficient for generating environmentally friendly outcomes. Most IP instruments focus on Efficiency, where the role of technology and IP instruments in providing incentive for innovation can be emphasized. The other Es are given secondary importance. For optimum impact all the seven Es have to be

converged and synergized. Intellectual property instruments play an important but potentially limited role.

12.5 WAY FORWARD

There is a fear among traditional conservationists that an over-emphasis on economic development will lead to destruction of the environment. But, they also recognized that the motto of conservation should go hand in hand with addressing issues relating to poverty and welfare of communities. There should be mechanisms at the national level which will help correct the current distortions in incentive structures for local communities. Or else, it is feared that there will be a steady erosion of knowledge resources which will be difficult to control.

There is a need to created new models for protecting intellectual capital. These models should be in tune with the cultural, spiritual and ethical traditions of developing countries, especially to the norms relating to conservation of the environment and biodiversity resources which form the basis of their knowledge systems. While global patent regimes should not be opposed, it could be used as one of the potential ways of rewarding innovation. The model should be modified to cater to the traditions and needs of developing nations. The global patent regime should also work towards an approach to generate material and non-material incentives for individual and communities for conservation.

12.6 CONCLUSION

It is now recognized that the problems of developing countries will not be solved within the confines of laboratories of European or western nations. The innovators will have to work alone and through the mediation of European networks laboratories and incubation centres. It is pointless to put undue emphasis on just technology transfer rather than local green technology development. The future lies in harnessing of thousands of examples of innovations, practices, and knowledge systems of local communities. The entrepreneurial spirit of local communities should be augmented by public and private sector research and development to work towards self-reliance.

12.7 SUMMARY

Worldwide there is recognition that the most important assets for a community, company or a country are not so much the physical capital but its intellectual capital.

There is a close relationship between technology, institutions and culture, with each dimension playing an important role.

Conventional Intellectual property law emerged out of model of innovation over a particular time in history.

One of the major objections to providing incentives for conservation is that valorizing a resource may increase the possibility of over-exploitation of that resource.

The communities hold the right to decide the conditions under which individuals may or may not be able to share their expertise or other knowledge with outsiders or even with other members within their own community.

Sometimes overlap of the varied domains of knowledge could trigger conflicts and contestations when producers and users of knowledge have unequal access.

It is worth mentioning that IP instruments are only one of the many possible incentives for dealing with material and individual rewards.

There is a need to created new models for protecting intellectual capital. These models should be in tune with the cultural, spiritual and ethical traditions of developing countries.

12.8 QUESTIONS

1. Discuss the mechanisms of protections of intellectual property rights.

2. Discuss the problem of valorization in the context of contested knowledge domains.

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