

TOPIC: -

MAN- ENVIRONMENT RELATIONSHIP.

DR. ABHAY KRISHNA SINGH

PAPER NAME: - ENVIRONMENTAL GEOGRAPHY

SUBJECT: - GEOGRAPHY

SEMESTER: - M.A. –IV

PAPER CODE: - (GEOG. 403)

**UNIVERSITY DEPARTMENT OF GEOGRAPHY,
DR. SHYMA PRASAD MUKHERJEE UNIVERSITY,
RANCHI.**

INTRODUCTION: -

Man-environment relationships refer to the interactions and feedbacks between the human and the natural components and, consequently, to the linkages between the social and the geophysical systems. The field of man-environment relationship operates with a series of concept and notions. They refer to the causes of environmental change, feedbacks and consequences for the communities, answers of the decision makers etc.

There are various philosophies put forwarded by various school of thoughts to study the man-environment relationship in a better and easy way which are as follows:

DETERMINISM: -

In the history of geographical concepts, there have been various approaches and schools of thought to study man-environment relationship. The first approach adopted by the geographers to generalize the patterns of human occupations of the earth surface was deterministic. The philosophy of determinism opines that the decisions and actions taken by man are just effects and governed by casual laws. According to this philosophy it is believed that all the human actions are the result of antecedent factors or causes. Determinists therefore believe that all the events, including human actions are predetermined and this philosophy of man environment relationship is often considered incompatible with free will but there some who believes that it is compatible or even necessary for free will to be able to exist. Philosophy of Determinism is based upon the interaction between primitive human society and strong forces of nature. Determinism is one of the most important philosophies which persisted up to the Second World War in one shape or the other. It says that the strong forces of environment control the course of human action. This implies that the history, culture, mode of life, and the level of development of the societal groups and countries are exclusively or largely controlled by the physical environment.

ENVIRONMENTAL DETERMINISM: -

The simple definition of environmental determinism is that the natural environment is responsible for all human actions. The point of view is that the physical environment controls the course of human action. In other words, the belief that variation in human behaviour around the world can be explained by the differences in the natural environment is the crux of this man-environment relationship philosophy. The deterministic school of thought is of the opinion that the history, culture, living style and the stages of development of a social group or nation are largely governed and controlled by physical factors of the environment. This

philosophy says that aspects of physical geography, particularly climate, influenced the psychological mind-set of individuals, which in turn defined the behaviour and culture of the society that those individuals formed. For example, tropical climates were said to cause laziness, relaxed attitudes and promiscuity, while the frequent variability in the weather of the middle latitudes led to more determined and driven work ethics. This philosophy supports the idea that the highest achievement of civilizations like Egyptians, Mesopotamians, Indus-valley, disappeared because of the climatic change. It is also believed that the attack of central Asian nomads on other civilization is because of change in climate because it was climate change which resulted into the drying up of their pastures which forced them move in different direction during 13th century.

The first attempt made to explain the influence of environmental condition on the people and their culture was made by Greek and Roman Scholar. In the opinion of **Aristotle**, the people of cold countries are courageous but they lack political organisation thus they are unable to rule their neighbours. Similarly, the people of Asia lacks courage thus they are under slavery. On the other hand, people of Greece who occupy the middle position are gifted with finest qualities thus they are in a position to rule the world. Similarly, **Strabo**—the Roman geographer—attempted to explain how slope, relief, climate all were the works of God, and how these phenomena govern the life-styles of people. Geographical determinism continued to dominate the writings of the Arab geographers. **Al-Masudi** said that the land having abundant of water people are humorous and the people of dry land are short tempered. The nomads who live in the open air are having strength, physical fitness and wisdom and those who live in closed areas of the cities are not. He further said that people of northern quarter those who are living away from sun at cold places are characterised by good physique, rude behaviour, thick flesh, thin skin, blue eyes, curly and red hairs. All these qualities develop in them because predominance of moisture in their land and their cold nature discourages religious belief. **Ibn-Khaldun** said that as we move away from the equator up to 64th parallel the population density increases and after 64th parallel population density again decreases. This is because at equator the population density is low because of high temperature and humidity but in temperate region the temperature is neither very high nor very low thus population density is high. After 64th parallel population density starts to decrease because of extreme cold climatic condition. The environmental causation continued throughout the 19th century when geographers themselves used to regard geography above all as natural science. **Carl Ritter**—the leading German geographer— adopted an

anthropocentric approach and introduced geographical determinism in the early 19th century. Ritter attempted to establish the cause variations in the physical constitution of body, physique and health of men living in different physical environmental conditions. **Alexander von Humboldt**, one of the founders of 'modern geography' and a contemporary of Ritter also asserted that the mode of life of the inhabitants of a mountainous country differs from that of the people of the plains. While dealing with man nature interaction he included man and his work but he did not give much importance to man as a major determinant.

The founder of the 'new' determinism was **Friedrich Ratzel**. He supplemented 'classical' geographical determinism with elements of 'Social Darwinism' and developed a theory of the state as an organism which owed its life to the earth and which was ever striving to seize more and more territory. In the opinion of Ratzel, "similar locations lead to similar mode of life". He cited the example of British Isles and Japan and asserted that both these countries have insular locations, which provide natural defence against the invaders. Consequently, the people of these countries have been making rapid progress. **Miss Semple** defined human geography as the 'study of changing relationship between the unresting man and unstable earth'. She is also of the opinion that man is a product of earth's surface and nature has entered into his bones and tissues and into his mind and souls. She also gave enough importance to the concept of '**environmentalism**' or '**determinism**' which increased the credibility of human geography. **Elsworth Huntington**, an American geographer (writer of *The Principles of Human Geography* in 1945), was a protagonist of environmental determinism. Huntington's writings on climate and civilization displayed his predilection for racial typecasting and environmentalist explanations. The basic philosophy of Huntington was that the supreme achievements of civilization in any region were always bound up with a particular type of climate and variation in climate led to 'pulsations' in the history of culture. Subsequent geographers like Mackinder, Chisholm, Davies, Bowman, Robert Mill, Geddes, Sauer, Herbertson, Taylor, etc., interpreted the progress of societies with a deterministic approach.

SHIFTING FROM DETERMINISM TO POSSIBILISM: -

There is no doubt that environment influence man and man in turn influence his environment. This interaction between man and his environment is so intricate that it becomes almost impossible to find out that when one's effect ceases and the other's effect begins. Many landscapes that appear natural to us are in truth the work of man. Wheat, barley, olive, and vine, which dominate the Mediterranean countries, are entirely the products of human effort.

Apple and almond orchards of Kashmir, Himachal Pradesh and Kumaon division of Uttarakhand are the creations of man. Similarly, cultivation of *basmati rice* in only 50 cm rainfall areas of the Punjab and Haryana is the direct and conspicuous result of human efforts. Wheat cultivation in West Bengal, Odisha and Dimapur of Nagaland is because of the HYVs of seeds invented by man. Countless such examples from the developed and the developing countries can be cited. Thus, man and environment are intrinsically interdependent and it is difficult to say which becomes more influential and when. After the World War II, the philosophy of environmentalism was attacked. Many geographers in the United States, Britain, Canada and other countries drew attention to the one-sided approach adopted by the environmentalists in their interpretation of historical reality, to their exaggeration of nature's active role and to the fact that they only acknowledge man as capable of passive attempts at adaptation. Actions of man reveal many facts for which environmental forces alone can give no satisfactory explanation. Spate criticized the fanatic approach of environmental determinists. He, for example, states that "environment taken by it is a meaningless phrase; without man environment does not exist". Equally important is his indication of the need to consider the psycho-physiological influence of the geographical environment via the social structure. In the final analysis, Spate concluded that geographical environment is only one of the factors of territorial differentiation and "it acts through society; cultural tradition has a certain autonomous influence". Recently an Australian writer Wolfgang Hartake argued that while the role of physical factors might well be relatively unimportant in the fringe zone of Frankfurt, "it is hard to imagine the extreme climatic conditions not playing a direct role in any human activity which occurs in the Sahara". Similar argument is put forward by Hartshorne. He rejected environmentalism purely on the grounds that it separates nature from man and thus is "disruptive of fundamental unity of the field", i.e., contradicts the concept of geography as an integrated science. The environmentalist movement started in the 1960s has however, shown quite distinctly that there is an overall limit to certain kinds of human economic activity in terms of biophysical persistence and resilience of the planet's systems. In brief, at the very largest scale we can be determinists, whereas at the more local scales we can see the virtue of possibilism or cultural and social determinism.

POSSIBILISM: -

The theory of Possibilism was born in the beginning of 20th century. The concept of determinism which was conservative cannot be accepted by a society which is civilised and advanced. The reason behind this is that man with the help of technological development has

modified the nature for example he has created canals for making the water available in the extreme desert areas for making it suitable for living. The concept of possibilism says that nature provide a number of opportunities and possibilities from among which man is free to select or choose. The philosophy states that man with the help of his mind and will changes the influence of nature on him. The philosophy of possibilism attempts to explain the man and environment relationship in different way taking man as an active agent. The philosophy further states that nature provides opportunities and the number of opportunities increases as the knowledge and technology of a cultural group increases. The hypothesis of possibilism was put forwarded by Lucian Febvre who is of the opinion that man is the most powerful agent who modifies the terrestrial surface of the earth. Lucian said that 'there are no necessities but everywhere possibilities' for example man invented iron and it was up to him that how he makes the use of that iron. It was up to him whether he uses the iron for making hammer or a bicycle, a car, a ship or a plane it depends on his technological development. So the example proves that there are possibilities everywhere but there are no necessities. Prior to the invention of iron though there was no necessity for a plane ship or a car but possibilities were still there. Vidal de Lablache further advocated and preached the philosophy of possibilism. In his work he has minimised the influence of environment on man. He tries to explain the differences between groups living in the same environmental condition. He said that the differences are not because of the natural environmental condition but due to the variation in the attitude values and habits of man. The possibility school of thought tries to explain the differences in human society on the basis of man himself bringing the changes and influencing the environment and it is not only the nature solely responsible for bringing the changes or differences in human society. After Vidal de Lablache it was Jean Brunhes who became strong supporter of possibilism in France. *Sauer*, another supporter of possibilism said that it is the work of a geographer that he should investigate and understand that how a natural landscape transforms into a cultural landscape. From such work the geographer will be able to identify the major changes in that particular area that has resulted because of succession of human groups. For example, wheat does not have high yield where it was first domesticated (south-west Asia) but in America, Europe and some of the Asian countries. Thus after the Second World War the philosophy of environmentalism was attacked. Many geographers in Britain, Canada and USA said that explanation of phenomena only on the basis of nature and its forces is incomplete and unsatisfactory until and unless man is included into it.

NEO-DETERMINISM: -

The concept of neo-determinism was put forward by Griffith Taylor which reflects a middle path between the two ideas of environmental determinism and possibilism. In his opinion the best economic programme for a country to follow is largely determined by nature and it is a duty of a geographer to interpret this programme. He says that man is like a traffic controller who can accelerate, slow or stop down the progress but he cannot change the direction, this is the reason why this philosophy is also called as stop and go determinism. The concept shows that there is neither a situation of absolute necessity (environmental determinism) nor is there a condition of absolute freedom (possibilism) in other words we can say that there is neither a condition fully dominated by nature (determinism) neither a condition fully controlled by man (Possibilism). It means that human being can conquer nature by obeying it. Men have to respond the red signals and can proceed on the path of development only when nature permits the modification. It means that possibilities can be created within the limits provided by nature which do not damage the environment and there is no free run without the accidents meaning that if one runs freely he will have larger chances to meet accidents. For example, the developed countries of the world have chosen the path of free run, these countries are not obeying the nature, these countries are not judiciously chosen the path offered or as planned by the nature, this is the reason why these developed countries are facing the problem of greenhouse effect, ozone layer depletion, receding glaciers and degrading lands and overall environment. In short we can say that the concept of neo-determinism tries to bring a balance between the philosophies of environmental determinism and possibilism. In the opinion of Taylor, the main task of geography is to study the natural environment and its effect on man and not with all the problems connected with man or the cultural landscape. Possibilism does not support or encourage the study of natural environment but it overemphasises the anthropocentrism in geography.

CULTURAL ECOLOGY: -

The third and most recent approach that of cultural ecology, incorporates the idea of an adaptive response of a culture to its environment. It differs from the above two approaches by suggesting that only certain critical aspects of the environment determine certain aspects of the socio-culture, and it tries to spell them out. *Steward*, who in 1955 made the major contribution to the development of the cultural ecology concept, states that the objective of this approach is to determine whether similar socio-cultural adjustments occur in similar environments. The advantages of the cultural ecological approach over former ones are

significant: direction of cause and effect is specified; cultures are treated as separate cases rather than as levels in the growth of civilization, and cultures are seen to be in a dynamic state of adaptation (Abbott, NA). Carl Sauer emphasised that nature offers or limits certain possibilities, but does not determine the culture. He stated that human behaviour is not dependent on environmental constraints or on logical necessity but rather on the conventions acquired in the culture (Koszegi, 2015). At this time, anthropologists who were dissatisfied with the rigid theories of cultural change embodied by environmental determinism yet recognised that local environment influences cultural features, developed a new methodology. Cultural ecology was defined by its proponent, the American anthropologist Julian Steward, as “the study of processes by which a society adapts to its environment”. The development of cultural ecology represents a significant innovation in the way the relationship between culture and the environment was conceptualised; while environmental determinism and historical possibilism treated environment and culture as separate entities which affect each other externally, cultural ecology introduced the concept of an integrated system within which cultural and environmental factors interact. Despite this obvious advance in terms of understanding human-environment relations, several aspects of cultural ecology have been criticized. Although *Steward* denounced the environment determinist model for being too general and offering no understanding of how specific cultures related to their local environments.

STRUCTURALISTSDETERMINISTIC APPROACH: -

The Writings of the 'realist' philosophers or the structuralisms, within the geographical approach analysed the human-environment system aimed at identifying the way in which political and economic structure determines or influences individual adjustment to the environment, particularly in the Third World settings. *Wisner* emphasise the need to consider the political and economic structure in accounting for economical vulnerability. He argues that market forces within the poor under developed capitalist economies of the third world, cause the poorest to live in the most hazardous or dangerous places. Because the underdevelopment process forces the peasantry move into a more vulnerable position, which in turn, directs them to look for another source of livelihood in areas where security and hazard more severe or to change their resources in way that exacerbate vulnerability. From this approach the concept of 'marginality' emerged. This concept explains how disaster puts the poor people in more vulnerable situations. Even after disaster the poor suffer more because the elite in society capture a large part of the benefits of both financial aid for recovery and the 'normal' development. There is a strong connection between income and

access to resources or the ability of people to protect themselves and especially, to recover after disaster. However, structural determinism was criticised based on several lines of reasoning such as structuralisms cannot predict any prior specific outcomes, and therefore they cannot be verified.

THE RADICALISM: -

The radical approach in geography emerged as a major criticism to quantitative geography, positivism and traditional regional geography. The origin of radical geography can be traced to the radical geography movement which started in the 1960s in the USA. There were three prominent issues of international concern behind the movement, viz., the Vietnam War, the civil rights movement of the Blacks, and the all-pervasive phenomenon of poverty in urban ghettos which generated social tension. The radicalists put emphasis on the need for a revolution in both theory and practice of geography. Thus, the radical approach is value-based, especially the theory of labour value, as against the supposedly value-free approaches. Radicalists stress that, with the changing production techniques, the symbiotic relationship between human beings and the environment also changes accordingly. Radicalism reduces human beings to a passive existence in the field of historical and structural determinism. Rather than being a product of history, human beings become the creators of history. The radicalists are victims of Marxist orthodoxy; thus they stress more on time over space. The radicalists lack flexibility in a fast changing world of knowledge. So, the radical interpretation of geography suffers from an undue dogmatic analysis of 'space'.

QUANTITATIVE APPROACH: -

After the World War-II the geographers of the developed countries realized the significance of using mathematical language rather than using the language of literature. Quantitative approach came with the advent of Quantitative Revolution in geography when simply the description of the variable characters of the surface of the earth was discarded and more emphasis was given on model building. Thus quantitative revolution was defined as diffusion of statistical techniques into the subject matter of geography to make the subject and its theories more precise and accurate. The earliest use of quantitative techniques mainly started in climatic studies, geographical distribution and Crop Productivity. Christaller made a major contribution to location theory, by applying quantitative techniques enormously in his study

Central Places in. The advantage of this approach was that the cumbersome data which were collected was reduced to manageable number and observations made on the basis of the data collected was statistically tested and verified. The major disadvantage related to this approach was that the theories and models developed on the basis of empirical data, do not take into account the normative questions like beliefs, emotions, attitudes, desires, hopes and fears and, therefore, cannot be taken as the tools explaining exact relation between man and environment.

POSITIVISM: -

Positivism is a philosophical approach founded upon the belief that "phenomena of the human social world are no different from those of the natural inorganic and organic world. Positivism as a philosophical system recognising only that which can be scientifically verified or which is capable of logical or mathematical proof and therefore rejecting metaphysics. As a result, the father of positivism Auguste Comte felt that social phenomena should be studied using more scientific methodologies. The reasoning behind the coining of the term 'positivism' was the approaches aim to prioritize actual truths. *Comte* demanded objective studies using replicable methods so that common laws could be generated; he was consequently dismissive of metaphysical and normative questions as they were seemingly impossible to answer from a scientific standpoint.

BEHAVIOURALISM: -

It may be seen as a developing criticism and dissatisfied with the models and theories developed by the positivist using statistical techniques (quantitative revolution) which were based on the economic rationality of man leads to the development of behavioural approach to study man and environment relationship in geography. Behavioural geography treats man as a responder to stimuli. It seeks to identify how different individuals respond to particular stimuli (and also how the same individual responds to the same stimuli in different situations) to isolate the correlates of those varying responses to build models that can predict the probable impact of certain stimuli. As the time passed it was realized by the geographers that the models and theories propounded and tested with the help of quantitative techniques provided poor description of geographic reality and man-environment relationship. For example, theories such as Central Place Theory based on statistical and mathematical techniques were found inadequate to explain the spatial organization of the society. The concept of economic rationality that the all the men are economic and only thinks about of profit making also seems to be false because a floodplain dweller does not leave its place of

residence despite the risk of flood. Thus this approach to man and environment relationship too has been criticized.

HUMANISM: -

Humanistic approach to study man and environment relationship emerged in 1960s as a critical reaction against positivism. Humanistic approach developed just because of the dissatisfaction developed due to the mechanistic model of spatial science that had developed during the quantitative revolution. The followers of positivistic approach and spatial science treated human beings as dots on map and data on graph and number in equation. Since the focus of humanistic approach was to keep role of human at the center point and it emphasizes the role of human awareness, human agency, human consciousness and human creativity this is the reason why humanistic approach was supported by Kirk (1951) focusing on the complexity and ambiguity of relationship between man and environment. The central idea of this theme was that the tools and assumption of the quantitative revolution were not able to explain human world and human issues specially those related to social institutions, attitudes, morals, traditions and aesthetics. This philosophy of man and environment relationship rejects the reduction of space and place to geometrical concepts.