

THE NATURE AND SCOPE OF PHYSICAL GEOGRAPHY

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THE NATURE AND SCOPE OF PHYSICAL GEOGRAPHY

DEAR STUDENT WELCOME TO THE SERIES ON GEOGRAPHY. IN TODAY CLASS WE ARE FOCUSING ON NATURE AND SCOPE OF PHYSICAL GEOGRAPHY UNDER THE FIVE HEADINGS:

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2. THE THREE MAJOR BRANCHES IN GEOGRAPHY p
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INTRODUCTION TO GEOGRAPHY

SEGMENT – I

Geography is an independent subject it equips us to Study of space and place their effects on variety of topics such as Economics, Social, Health, Climate, Plants and Animals, etc. Hence it is highly a inter disciplinary subject. Thus, it is called “The Mother of all sciences” The term geography is derived from two greek words “geo” and “graphes” which means earth and its discription. Several geographers have defined geography, some important definitions are according to vidal - de - la - balche - “geography is a science of places.” Alexander- von-humbolt- “geography as the description of the earth which deals with inter relationship of phenomena that exist together in area.” thus it means that geography is “a bridge between the human and physycal science”. It studies vairyety of physical features like (land, vegetaion, mountains, deserts, ocean, rivers, etc,) cultural features or man made features like races of man kind, population, economcs, social, cultural etc.) biotic features like flora and fauna (plants and animals.) these features are not unifom on the surface of the earth they differ from one place to another. According to physical features, and mans activites also changes on the earth surface. Over the past two centuries the scope of geography has wittnesed a vast changes as according to the advancement in man’s skill, technology, research, etc. it has progressed rapidly in a dynamic and systematic way. Hence geography now is a enquiry in to the causes, what, where, why and how all these geographical factors influence man and his life. Thus the geography of a region changes as human knowldge of a region increaseas. He discovers a new way in using the available resources, thus geography study about “ever changing earth and untiring and ever active human beings”. So some call

this subject a science of complexity. In its exploration geography has been a lead in understanding spatial inter-relationship, inter-dependence and interaction. So it is the subject of broad interest to science and society today.

SEGMENT -II

Major Branches In Geography

Geography as a discipline draws its data from other specialised Social and Physical Sciences like geology, meteorology, pedology, astronomy, economics, history, sociology, demography, geomorphology, ecology, climatology etc. hence geography as a descriptive discipline can be split broadly into two main subsidiary fields.

1. Human geography and physical geography

HUMAN GEOGRAPHY

It focuses on man made or man built environment (like industries, population, culture, race, economics etc.,)

But the latter focuses largely on nature or things which exist already in nature or on the surface of the earth (mountain, climate, vegetation, soil, water, land forms, etc.) as a result these two fields a third field has emerged that is bio-geography. Bio-geography studies largely on plants and animals or biota where living organisms live.

The Subsidiary Fields Further Divided As Follows:

HUMAN GEOGRAPHY

1. Economic geography
2. Historical geography
- 3 Political geography
1. Cultural geography
2. Population geography
3. Settlement geography
4. Regional geography
5. Agricultural geography
6. Medical geography

PHYSICAL GEOGRAPHY

1. Mathematical geography
2. Geomorphology
3. Climatology
4. Oceanology
5. Meteorology
6. Seismology.
7. Biogeography

1. Volcanology
2. Pedology

A BRIEF OF SOME BRANCHES OF PHYSICAL GEOGRAPHY

1. Mathematical geography: It deals with earth, shape, size, motion etc.
2. Geomorphology: It describes the evolution, origin, spatial distribution of land forms, e.g. mountain plains, plateau, dunes etc., it is a combined study of geography and geology.
3. Meteorology: It deals with atmosphere the day to day atmospheric changes, conditions and their causes, data from worldwide meteorology stations and weather satellites are collected and weather maps are prepared to predict the weather condition and to forecast weather accurately.
4. Climatology: It includes the study of climatic phenomena, their changes causes, influence on natural environment and on activities of human being.
5. Oceanography: It studies aspects of ocean and seas, includes ocean relief, ocean floor, salinity, (chemical composition) deposits, temperature, tides, current. Flora, and fauna etc./ as well as on ecology, economical and legal issues.
6. Medical geography: It is new specialized branch, deals with the distribution of various diseases, it is gaining more importance in this present era because of the deteriorating environment of man
7. Bio-geography: It is a study of organic life, their spatial distribution that is plants and animals, it combines with Phyto geography and zoo geography.
8. Seismology: A study scientifically of earthquakes, causes, effects and distribution investigate the structure and process within the earth.
9. Volcanology: A scientific study of volcanoes. It studies structure, origin, petrology of volcanoes, effected on earth, atmosphere, hydrosphere and rock structures, of the earth's crust and their distributions.

10. Urban geography: It studies urban centers or cities. It studies evolution of cities structure of cities, types of cities etc.,
11. Applied geography: It deals with elements of geography which can be useful for the welfare of man.
12. Geography of planning: It includes regional planning, town and country planning. Town planning deals with civic amenities, zoning etc., in the city's country planning deals with irrigation, flood protection scheme etc., in villages region planning involving the planning for larger areas covering more than one state or country.

Human geography can be divided into many broad categories, Such as

- a) Social / Cultural Geography
- b) Economic Geography

- a) Historical and time Geography
- b) Political and Geo politics
- c) Population or Demography or Settlement geography
- d) Religion Geography
- e) Health Geography
- f) Development Geography

Various approaches to study of human geography have also arisen through time and include.

- 1) Behavioral Geography
- 2) Feminist Geography
- 3) Cultural theory

SEGMENT -III

Physical geography and its scope:

In this segment, we are concerned with the study of Natural Elements, which is already exist on the earth surface. Like Rocks, Mountains, Water, Soil vegetations, land forms etc. Hence the study of these elements of physical environment is known as physical geography.

According to Arthur Holmes – “The study of physical environment by itself is physical geography which includes consideration of surface relief of the globe (Geomorphology) of the seas and the oceans (oceanography) and of the air (Meteorology) and (Climatology).

PHILIP LAKE: “Physical geography is concerned with the surface of the earth, generally only, it considers the atmospheres, hydrosphere, and the visible portion of the lithosphere”.

OXFORD DICTIONARY

“The scientific study of the natural features on the earth’s surface” eg. Mountain and Rivers.

All these above definitions, it may be pointed out that presently physical geography is not only the agglomeration and unification of earth sciences, but it also studies the patterns of interactions between human activities and physical environment. The field of physical geography is very vast and has several branches. The 4 main factors responsible to influence, determine, distribution, condition and all activities of man on earth are studied are under the following groups

Lithosphere
Hydrosphere
Atmosphere
Biosphere

All living organisms, animals, plants or man, found in different parts of the world or on earth, vary from one place to another in different ways according to the different environmental conditions. Physical geography has its own individual scope and it is vast. This individuality does not obstruct the flow of information. The study of physical geography deals with phenomena of nature ranging from local variation to worldwide patterns. Physical geography follows its own methodology to study, this makes it distinct from others. It emerges as a discipline of evaluating and ranging natural resources. To understand the intricate relationship between man and environment. It is essential to know the physical environment, which provides resources to man, and man utilizes these resources and ensure their, economy and social developments with the help of modern technology and advance skills. Thus, physical geography is a systematic study of man and physical environment, therefore there would not be geography if there was no man and physical features on earth surfaces. The nature of physical geography is a integrated study of physical features on the within the earths surfaces. Endogenic and Exogenic Forces. The study of physical geography and human are both not static but highly complex and dynamic. They change from place to place and from time to time.

It is a process between ever changing earth and untiring and ever active man. Example : Physical features of India have, a lot of changes from North to South and East to West, As according to the Physical features life and activities of man changes. Thus we find humanized nature and naturalized human beings and geography studies this interactive relationship deeply.

SEGMENT – IV

Recent developments in geography:

- 1) It explains the 4 major component of earth.

(a) Lithosphere: (Land forms, drainage, reliefs and physiography)

It is the solid outer layer of the earth, surface area of the earth is 510 million sq. km, about 361 million sq. km or $\frac{3}{4}$ is covered with water bodies that is 71%, remaining 149 million sq. km or $\frac{1}{3}$ is land surface that is 29 percent. Most of the land masses are distributed in the northern hemisphere known as "Land Hemisphere" whereas water bodies are concentrated in the southern hemisphere, known as water hemisphere.

Atmosphere: (Composition, structure, elements, controls of weather climates, temperature, pressure, winds, precipitation climatic types etc.,)

Atmosphere is a colorless, tasteless, odorless blanket of gases that surrounds the earth. It gives us air to breathe and water to drink. Also keeps us warm by retaining sun's heat, it shields us from the sun's harmful rays. The atmosphere is approximately 700 km (440 miles), atmosphere is held by the gravitation forces of the Earth. As it does not have a distinct boundary it extends into space, it becomes thinner, eventually fading out.

(b) Hydrosphere: (Oceans, seas, lakes, and associated features with water)

About 71 percent of the earth's surface is covered by water mass or $\frac{3}{4}$ known as hydrosphere. It consists of oceans, seas, lakes, rivers, ponds, gulfs, bays etc.,

(c) Biosphere: (Life forms, including main and macro organism, food chain, ecological parameters, and ecological balances).

It is a zone on earth which consists of various organisms it occupies the lower part of atmosphere, upper parts of lithosphere and lower parts of hydrosphere.

1) More attention to the origin, morphology of landforms and their effects on earth's surface.

2) Man, and natural hazards and disasters, adverse impacts of human activities on nature, environmental problems, remedial measures. Ex: - (A.) Global warming, (B.) Wild fires,

(C.) Indian Ocean Tsunami (2004). (D.) Katrina and New Orleans (A tropical storm or hurricane in south America, in the year 2005, on Aug 27th had the largest

devastation which wiped out New Orleans), (E.) Earthquake of Central China (2008).

3) More emphasis on instrumentation, measurements, of different geomorphic process and mathematical analysis of laboratory studies.

4) Distribution of Natural resources can be understood by studying physical geo human occupation and their variation can also be studied.

5) We can study certain aspects like ecological instability, hydrology, plate tectonics etc.

7) It studies (a) the patterns of weather and climate

(a) Global radiation and change in temperature.

(b) Distribution and movement of water.

(c) Distribution biota across time and space.

(d) Formation of new crust and generation of Land forms.

(e) Weathering erosion, and deposition driven by water, wind and other agents.

SEGMENT-5

Importance of geography:

The study of physical geography is emerging as a discipline of evaluating and managing natural resources, it has evolved a great successive stages of development in terms of methodology, approaches, etc., since the birth of philosophical ideas, reports, thinkers, philosophers, historians, of the ancient time to the present status has attained a dynamic changes, where different components are added from time to time. Ex: Previously physical geography has only 3 components. Lithosphere, hydrosphere and atmospheres gradually or later biosphere, and the distinct branches like geomorphology, Oceanography, climatology and biography is discussed and separately dealt with.

Modern geography now composes of following 4 academic traditions;

- 1) Spatial tradition – It is the investigation of the phenomenon of geography from a strictly spatial perspective.
- 2) Area studies tradition: The geographical study of an area on the earth at either the local, regional or global scale.
- 3) Human land tradition: The geographical study of human interaction with the environment.
- 4) Earth science tradition: The study of natural phenomena from a spatial perspective. The tradition is best described as theoretical physical geography.

The frequency and magnitude of human mediated environmental problems has been on a steady increase. These increases is due to the consequent increase in human population and consumption of Natural resources. Hence there is an increasing number of researchers in geography, who are studying, how human modify environment, natural hazards, effect of urbanization land use patterns etc. Therefore the 4 distinct branches of physical geography (lithosphere, hydrosphere, atmosphere, biosphere) are separately dealt. Physical geography is becoming even more prevalent due to the advancement of computer and software technologies. The nature of physical geography does not remain static, because it is a complex factor and vary from place and changed through time, e.g. Landforms, climate, plants, animals. According to the increasing human knowledge, skill, discoveries, competition etc.

Why should we study physical geography? Or its importance

- 1) It explains the 4 components and sub components of the earth (Litho, hydro, Bio, atom). Their influence on man. Geographical factors and spatial changes can be known by studying physical geography.
- 2) It analysis the origin and the morphology of landforms.
- 3) It gives information about man's adjustment with nature to support his life.
- 4) It studies the relationship between ever changing environment and ever

active man.

5) We study the distributional patterns of natural resources in details.

6) It also studies the natural and social sciences, which help us to know varying human occupations and all other factors. It is not the same on all over the earth surfaces, which vary from place to place as according to the physical features.

Thus the importance of the study of physical geography has changed dynamically it studies geomorphic and environment aspects, to make it more relevant and clear to the society so what we can solve the immediate environmental hazards and problems.

