Subject Matter

The subject matter of geography is a clear manifestation of the fact that geography is interdisciplinary in its nature and it reflects both the aspects of study, viz. sciences and humanities. Therefore it covers all the elements of study: physical, human and biotic. Besides, the representation of all these elements with the help of maps and diagrams also falls within the ambit of geography (Fig. 2.2).

The various branches of geographical study may be identified on two bases, viz. systematic and regional. In systematic approach, a phenomenon is studies world over as a whole, and then the identification of typologies or spatial patterns is done. For example, if one is interested in studying natural vegetation, the study will be

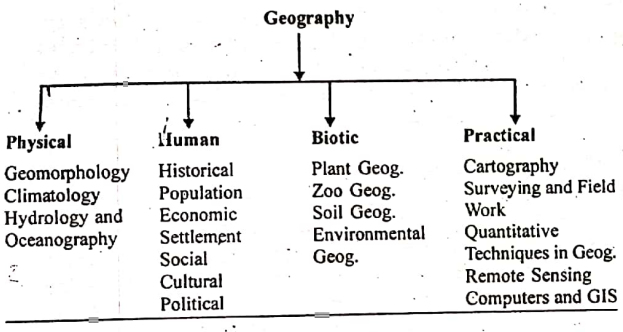

Fig. 2.2: Subject Matter of Geography

done at the world level as a first step. The typologies such as equatorial rain forests or softwood conical forests or monsoon forests, etc. will be identified, discussed and delimited. In the regional approach, on the other hand, the world is divided into regions at different hierarchical levels and then all geographical phenomena in a particular region are studied. These regions may be natural, political or any other, as required. The phenomena in a region are studied in a holistic manner searching for unity in diversity. However, following the systematic approach the subject matter of geography would include four major areas of study with numerous subfields, viz. Physical, Human, Biotic and Practical (Fig. 2.2):

Physical Geography

The Physical Geography studies the spatial characteristics of the various natural phenomena that exist in Earth's lithosphere, hydrosphere and atmosphere. Therefore, various sub-branches include geomorphology, climatology and hydrology and oceanography.

Geomorphology, as already described, is the study of landforms, including their origin and evolution, and the processes that shape them. The studies in geomorphology are also the foundation for pedology, the soil science.

Climatology is the study of climate, and is a branch of the atmospheric sciences. It encompasses the study of structure of

atmospheres and elements of weather and climate, and the climatic types and regions. Climatologists study both the nature of climates—local, regional or global—and the natural or human-induced factors that cause climates to change. Climatology considers both past and potential future climate change. Phenomena of climatological interest include the atmospheric layers, circulation patterns, heat transfer (radiative, convective and latent), interactions between the atmosphere and the oceans and land surface (particularly vegetation, land use and topography), and the chemical and physical composition of the atmosphere. Related disciplines include chemistry, ecology, geology, geophysics, glaciology, hydrology, oceanography, and volcanology.

The study of Climatology is approached in two ways, viz. the study of the contemporary climates and the study of the past climates. The study of contemporary climates incorporates meteorological data accumulated over many years, such as records of rainfall, temperature and atmospheric composition. On the other hand, Paleoclimatology seeks to reconstruct past climates by examining records such as ice cores and tree rings (dendroclimatology). Knowledge of the atmosphere and its dynamics is also embodied in models, either statistical or mathematical, which help by integrating different observations and testing how they fit together. Modeling is used for understanding past, present and potential future climates.

As stated in the previous section, Hydrology is the study of the movement, distribution and quality of water throughout the earth, and thus addresses both to the hydrological cycle and to water resources (oceans, seas, lakes, rivers, etc.). Oceanography, on the other hand, is the exclusive study of seas and oceans. The major division of oceanography have been identified as the geological study of the ocean floor and features; physical oceanography (concerned with the physical attributes of the ocean water, such as currents and temperature); chemical oceanography (the chemistry of ocean water); and marine biology (the study of the oceanic flora and fauna).

Human Geography

Human geography is a branch of geography that focuses on the study of patterns and processes that shape human interaction with various environments. It encompasses a vast field of study of human beings covering, for instance, historical, demographic, political, cultural,

social, economic and developmental aspects. While the major focus of human geography is not the physical landscape of the Earth, it is hardly possible to discuss human geography without referring to the physical landscape on which human activities are being played out, and environmental geography is emerging as a link between the two.

Every region has undergone some historical experiences before attaining the present day status. Historical Geography studies the historical processes through which the space gets organised. The major theme of this subfield is the study of the geographies of the past and how a place or region changes through time. The geographical features experience temporal changes and these also form the concerns of historical geography. Historical geography also seeks to determine how cultural features of various societies across the planet emerged and evolved, by understanding their interaction with their local environment and surroundings.

Population geography examines the population growth and change of small and large area of the earth and investigates the demographic components of the population. The demographic characteristics of people include their distribution, density, growth, sex ratio, etc.

The study of settlements is accepted as an integral part of geographical investigation and analysis. Because, shelter is one of the basic necessities of human beings and the term 'settlement' denotes 'territoriality'. All forms of human habitation are settlements. The settlement geography is the study of the forms of human habitation. It is the science of systematic enquiry of occupancy features distributed over space with differentiation in relation to man. The term 'settlement' indicates to the geographer all man-made forms resulting from the process of settling, including the establishments that shelter the people and their possessions, the roads that connect, and the fences that part them. The discipline of settlement geography also distinguishes the characteristics of rural and urban settlements.

The study of the location, distribution and spatial organization of economic activities across the Earth falls under Economic geography. It focuses on the location of agricultural areas, resources, industries and retail and wholesale businesses, on transportation and trade, and on the changing value of real estate. Courses in economic geography may cover such topics as transportation, agriculture, industrial location, world trade, and the spatial organization and

function of business activity. The distribution of economic activities on Earth is influenced by many environmental, social, political, historical and other factors. Geology can affect resource availability, geomorphology the cost of transportation, and the quality of soil land use decisions. Climate can influence natural resource availability and location or type of agriculture. The social and political institutions that are unique to a particular region also have an impact on economic decisions. Economic geography research focuses on the study of spatial aspects of economic activities on various scales. Agricultural Geography, Industrial Geography, Commercial Geography and Resource Geography may be identified as the important sub-fields of this branch of geographical study.

The society is made up of elements drawn from diverse origins—caste groups, languages and religious groups, displaying striking differences in social organization and cultural patterns. Social geography deals with the spatial organization of society and its social structure as expressed in identities such as ethnicity, tribe, caste, community, language, dialect and religion at the grassroot level. Besides, it also covers the identification and study of the processes that lead towards social change, such as education, urbanization, industrialization, penitration of market forces, incidence of cash economies, expansion of administration, spread of political institutions, exposure to mass media, etc.

Political geography looks at the space from the angle of political events and studies boundaries, space relations between neighbouring political units, delimitation of constituencies, election scenario and develops theoretical framework to understand the political behaviour of the population. Thus, it covers all aspects of boundaries, country, state, and nation development, international organizations, diplomacy, internal divisions, voting, and so much more. Political geography is a field of human geography that is concerned with politics. It also covers geopolitics, which is seen as the strategic, military and governmental application of political geographies. It is also closely related to International Relations.

Cultural Geography is the study of customs, foods, clothing, music, architecture, traditions, religions and languages of the world, their spatial distribution and the study of causes of this distribution. In other words, it encompasses the study and spatial attributes of various cultural elements of the society.

Biogeography

The interface between physical geography and human geography has led to the development of Biogeography and it is the science which deals with patterns of distribution of species (plants, animals and also humans in their natural setting) and the processes that result in such patterns. Soil geography and Environmental geography also constitute the part of this category.

The plant geography studies the spatial patterns of natural vegetation in their habitat, and the natural vegetation consists of forests and grasslands. The geographic distribution of animal species and their attributes may be studied under Zoogeography. In other words, it is the study of the patterns of the past, present, and future distribution of animals (and their attributes) in nature and the processes that regulate these distributions, and it is the scientific analysis of the patterns of biodiversity regarding time and space. Zoogeography integrates information on the historical and current ecology, genetics, and physiology of organisms and their interaction with environmental processes in regulating geographic distributions of animals.

Soil geography is devoted to study the processes of soil formation, soil types, their fertility status, distribution and use. It is concerned with the areal distribution of soil types over the land, the principal factors in formation of different types of soil, the plant and animal world as the source of the organic matter in the soil, horizons in a vertical profile of the soil, and the moisture, drainage, and erosional conditions that underlie the chain, of soil differences along the horizontal profile of a slope, from well-drained relatively flat upper surfaces down steeper slopes to low-lying relatively flat surfaces. Of special concern are the role of soils in agricultural systems and the impact of human activity on the improvement, erosion, degradation, or reclamation of soils.

Environmental geography is a branch of geography that describes spatial aspects of interactions between human and the natural world. In fact, the realisation of environmental problems such as land gradation, pollution and concerns for conservation has resulted in the introduction of this new branch in geography.

Practical Geography

This branch of geography is different from the ones talked about so far. It is concerned with the practical work in geography and this work, in turn, is related to data collection, representation and analysis. The science of geography is a field science and the empirical observations of the landscape—physical as well as cultural, make it truly spatial in nature. Maps are essential tools of a geographer, which help him a great deal in grading the actual picture of the lands and peoples whom it may not be possible for him to meet. Not only that, without the help of maps and diagrams he cannot present his facts emphatically and boldly. For this not only the proficiency in reading maps and diagrams etc., but also in making them should be achieved. The making of maps requires knowledge of map projections and surveying also. Thus, the practical work in geography constitutes both the laboratory and field work (Singh and Dutt, 1979).

The data collected in the field, or from the statistical reports, are translated into maps and diagrams in the laboratory. Besides, even for field observation some laboratory work is needed. For instance, elementary training in the interpretation of topographic survey maps and weather maps and familiarity with meteorological and surveying instruments etc., is essential for a student of geography before he can proceed for observation, recording and surveying in the field. Thus, practical work in geography is based on Cartography, Surveying, various Quantitative techniques, and more recently on Remote Sensing, Computers and GIS.

The subject matter of geography as outlined above is clearly enormous and extremely varied in nature and it is under constant change.

Scope of Geography