POPULATION RESOURCE REGIONS OF THE WORLD

The regionalization of the world according to population-resource regions is not a easy task. The geographers have always been concerned with regions and yet often examined the problems of resource adequacy and population growth at great length, yet a complete lack of attempts to regionalise on the basis of population resource ratio only reinforces the difficulties involved in quantification of the two main factors of population and resources. In this regard perhaps the most significant and meaningful effort has been made by Edward A. Ackerman in 1970. His system of regionalisation the world in terms of population resource regions has barely begun. Due to unavailability of sufficient data on natural and human resources for different countries or region of the world, the scheme provided by Ackerman is not based on quantitative method but mostly on qualitative method and personal observation.

For the regionalisation of the world on the basis of population resource ratio, Ackerman used three fundamental variables:

1. Population

2. Resource and

3. Technology

Of these variables the most importance is given to the magnitude and quality of available technology.

1. Population: Population factor is concerned with the magnitude and density of population. As the equilibrium state between population and resources is a rare phenomenon, the maladjustments between the two within a territory is more common. Such maladjustments between population and resources give rise to serious stress commonly known as population pressure. According to Clarke (1970), the pressure of population is caused by the imbalance between human numbers and their needs and between physical and human resources of an area.

2. Resources: The available resources in a territory include all the physical and human elements which are any how fulfil the human needs. The proper evaluation of these resources available in different countries of the world is actually very difficult task. The bringing of a resource into production, the realization of its potential is termed resource development.

3. Technology: Technology is concerned with the practical arts or practical science. It is the systematic application of scientific knowledge to industrial process or in solving the problems arising from the interaction of people with their environment. Technology not only has the potential for creating resource but also plays most important role in the proper utilization and management of the available resources. Now developed countries of the world are advanced in technology while developing and least developed countries are deficient in modern technology.

Ackerman while using the three variables of population, resources and technology in the regionalization of the world on the basis of population-resource ratio put great emphasis upon the technology factor. Thus, on the basis of population-resource ratio, he divided the world into following **5 broad population – resource regions**:

1. United States type regions

2. European type regions

3. Brazilian type regions

4. China or Egyptian type regions, and

5. Arctic desert type regions.

1. United States type regions:

These regions are the most inviable and characterised by technology – resource areas of low population – resources ratio. These regions include those large territories that have large stock of human or potential resources but the population of these regions is not very large. The countries included in this category are United States of America, Canada, Australia, New Zealand, Argentina and Siberian Russia.

The United States type regions are characterised by extensive territories, vast known or potential resources, small to moderate population, advanced technology and high economic and political status. These regions technologically are highly advanced and their technologies are rapidly expanding. The technologically skilled personals in these countries are generally in abundance who are not only able to fulfil the requirements of the concerned country but are also available to export to the other countries which are deficient in technology particularly in developing countries.

Canada (9.97 million km^2), U. S. A. (9.81 million km^2), Australia (7.68 million km^2), Argentina (2.78 million km^2) and Russia (17.08 million km^2) occupy territories more than two million square kilometres. As fas as density of population is concerned, it is 32 persons per square km. for U. S. A., 4 persons per square km. for Canada, 3 persons per square km. for Australia, 14 persons per square km. for Argentina, 15 persons per square km. for New Zealand and below 3 persons per square km. in case of Siberian Russia. Thus, density of population which denotes the simple man – land ratio (population – resource ratio) is low and very low in comparison with most of the countries of Asia, Europe and Latin America.

According to World Development Report (2007), per capita Gross Domestic Product (GNP) of U. S. A. (93470 dollars), Canada (32.600 dollars), Australia (32220 dollars), New Zealand (25,960 dollars), Argentina (4470 dollars) and Russia (4460 dollars) is more than 4000 dollars. All these countries are the constituents of more developed countries of the world.

On the basis of their extensive territories and vast known or potential natural resources, these regions are quite able not to develop high social and economic estates within their own territories but also are able to obtain the resources of other countries of the world on their own terms and conditions by virtue of their economic and political influences. This nearly ideal concurrence of factors is married by the hasty destructive manner in which the people of these lands have handled their own resources, especially the soils, forests, grasslands, minerals and water supplies. The economy has advanced rapidly, but possibly at the ultimate price of an irreversibly damaged habitat. These regions could be termed as elite regions. The origin of U. S. Type regions is recent, hardly 100 to 150 years old. These territories are mostly settled by Europeans and are dominated by European material culture or western culture.

2. European Type Regions:

These regions are technology resource areas with high population – resource ratio. These regions have relatively small territories, large populations and limited resources in comparison to the United States type regions. These also belong to elite group of nations because they also have quite favourable relationship between population and resources and high technology. Due to small territories and limited resources coupled with larger populations such regions have adopted intensive type economies and conservative attitude

towards natural resources. The social skill or technology on an average is equally impressive like the United States type regions.

European type regions include most of the European countries except only some countries in the Eastern part (Romania, Bulgaria, Turkey, erstwhile Yugoslavia etc.). Norway, Sweden, United Kingdom, France, Germany, Netherlands, Belgium in the North West Europe; Spain, Portugal, Italy, Greece etc. in the South Europe, and Poland, Ukraine, Russia etc. in the Eastern Europe are the constituents of European type regions. In Asia, Japan, Israel etc. are the other countries included in the category of European type regions.

The history of modern technology in the European countries starts with the industrial revolution in the mid - nineteenth century A. D. Once the industrial revolution started gaining ground, it give encouragement to the discovery of new inventions and innovations and soon a competition for more and more advanced technology ensured among the producers with each producer trying to outsell his competitors by presenting more sophisticated and technically superior goods to the consumers. Inventions and innovations in one field stimulated inventions and innovations in other fields as well. Increasing industrialization led the international trade and the countries trading with one another tried to outsell their competitors by producing more sophisticated and technically superior goods. In addition to that of the people of western countries, the Japanese made serious efforts to absorb, adopt and expand the technology according to their own requirements and also to create their own advanced technology.

These countries are facing heavy population pressure on land and other natural resources. Most of the European countries have density of population above 100 per square kilometre. Such countries are Netherlands (482), Belgium (319), United Kingdom (249), Germany (236), Italy (195), Switzerland (186), Czech Republic (132), Denmark (128), Poland (125), Portugal (115) and Hungry (110). Likewise, Japan also has density of population above 350 persons per sq. km.

European type regions form the developed world. The West European countries show per capita Gross National Product (GNP) above 2000 US dollars are Norway (59590), Switzerland (54590), Denmark (47390), Sweden (41060), Ireland (40150), Finland (37460), United Kingdom (37600), France (34810), Germany (34580), Belgium (35700), Netherlands (36620), Italy (30010) and Spain (25360). Per capita GNP of Japan is recorded 38980 US dollars.

The prosperity of the European type regions has been more dependent upon the level of international exchange or trade of technology, social skill, goods, services etc. The countries of this group are engaged in exporting goods, machinery, skilled services and advanced technologies and in importing such goods and services that are locally deficient such as petroleum, foodstuffs, industrial raw materials, unskilled or semi-skilled labour etc. Efforts are still continuing to discover new local physical resources and more significantly to develop new methods for extracting grater benefits from familiar resources. Thus, there is a modest search for additional domestic minerals, steady rise in agricultural output, better realisation of forest potentials, development of hydropower, improvement in already elaborate transformational network, new industrial processes etc.

3. Brazilian Type Regions:

Such regions include those countries of the world which are deficient in technology and have low population – resource ratio. These countries are deficient in technology but are generally of fairly substantial size and have population well below the level that could comfortable be supported by locally known natural resources. Thus, however, in these areas much larger population are required for proper socio – economic development of the region. The present status of such countries lies in the transitional stage and they may proceed either to European type or to China or Egyptian type depending on the growth of population and development of their known and potential resources. According to Zelinsky: "Their present status is a transient one. Almost without exception, the population of these lands are growing rapidly so that they will be transformed shortly into either crowded Egyptian type countries or given some rapid forcing of their socio-economic adolescence into European lands."

There is no much pressure of population on natural or social resources but their living standards are much lower than the European type or the United States type. Most of the countries included in Brazilian type are confined to three regions: **(i) Latin America, (ii) Tropical Africa, and (iii) South – East Asia.**

(i) The Brazilian type countries in Latin America are Brazil (Brazilian plateu), Bolivia, Venezuela, Argentina and Paraguay.

(ii) Much of tropical African countries are included in Brazilian type region as they are under populated and there are many physical and social problems that are hampering their collective social and economic development.

(iii) Countries in South – East Asia including Thailand, Cambodia, Laos, Vietnam, Indonesia, Malaysia and Philippines belong to Brazilian type.

(iv) Other isolated lands falling in the category of Brazilian type may be Central America, Cuba and petroleum rich gulf countries of South – West Asia.

Density of population which roughly shows the pressure of population on land and resources is below 40 persons per square km. in most of the countries of the Latin America such as Brazil (22), Colombia (44), Venezuela (30), Bolivia (9), Paraguay (16), Argentina (14) etc. The condition of most of the countries of tropical Africa is nearly similar to that of Latin America. In meso Africa, Ethiopia (71), Sudan (15), Kenya (60), Mozambique (25), Madagascar (32), Cameron (35), Ghana (97), Congo Democratic Republic (25) etc. are the examples. In South – East Asia, the countries are comparatively much populous and density of population exceeds over 75 persons per sq. km. in some countries like Indonesia (122), Vietnam (255), Philippines (279), Thailand (126), Cambodia (80), Malaysia (77) and Myanmar (75).

Brazilian type countries are characterized by deficient technology, sparsely distributed population and less developed resources. At present they are under increasing international pressure by much powerful countries like the U. S. A., Russia, China and Japan.

4. China or Egyptian Type Regions:

This type of regions is characterized by low technology and high population pressure on land and resources. Such countries are suffering from great imbalance of population and resources. Such countries are suffering from great imbalance of population and resources. These countries are most densely populated and are increasing more rapidly than the other types. Due to shortage of per capita land and other resources, they are the regions of mass poverty and increasing unemployment. Many of them have reached critical limit and their social progress and economic development have halted. According to Zelinsky, " these lands are doubly stricken, their excessive numbers confront deficient material and social capital and their changes for escape upward to the status of the European type countries are very slim."

The countries included in this group are China, India, Pakistan, Bangladesh, Nepal, Sri Lanka, Turkey, Lebnon, Jordan, Syria etc. in Asia; Egypt, Algeria, Tunisia, Kenya, Morocco, etc. in Africa; Cuba, Guatemala, Hatti, El. Salvador in Central America, and

Greece, Southern Yugoslavia, Albania etc. in Sothern Yugoslavia, Albania etc. in Sothern Europe etc. Thus such land are found on not only Old Worlds but also on New Worlds.

The development potential of big countries like China, India, Pakistan, Bangladesh, Egypt, Algeria etc. is certainly greater than that of relatively smaller countries of this group. Big countries have vast geographical area on the one hand and large size of population on the other. In terms of Gross National Income per capita, China, India, Pakistan and Egypt rank pretty low, but because of their large population they have reasonably extensive domestic market which can sustain development of their industries. On the contrary, small countries do not have extensive geographical area and natural resources and thus feel constrained in their development effort.

Most of the Egyptian type countries were the colonies of West European countries particularly in Britain and France. In Asia, countries of the Indian sub – continent had suffered from the worst type of colonial exploitation. These countries got independence only after the Second World War. After independence, many developing countries including India, China, and Egypt etc. have recorded some growth, but are still among the most backward nations of the world. A number of countries of this group have failed to reach a high level of development in spite of a relatively favourable ratio of cultivable land to population and an endowment of significant raw materials.

These developing countries are by and large agrarian in character. All these countries irrespective of their size are predominantly agricultural. In some of these countries agriculture accounts for more than 70 per cent of the labour force. With increasing population per capita land holding is shortly diminishing. Density of population which often determines the pressure of population on resources is usually high in these countries. It is clearly above 100 per square km. in most of the countries of Egyptian type. Bangladesh records highest density of population (1090) in the world. Other countries like India (368), Korea (489), Sri Lanka (303), Pakistan (202), Nepal (190), El Salvador (332), Guatemala (116), Cuba (116) etc. are highly populated areas. In Africa Egypt (74) and Ethiopia (71) have moderate population density while their population is concentrated in limited river valleys.

5. Arctic Desert Type Regions

This type of regions include vast expanses of areas which are suffering under extreme climatic conditions and have remained either entirely uninhabited or are very sparsely

populated mainly due to excessive cold, aridity or inhospitable terrain. These are the homelands of small marginal groups like the Eskimos, Lapps, Bushmen, Negroes, etc. These regions are technologically deficient, sparsely populated and have scarse food resources. There are no settlements at all in most of these areas. These areas are mostly deserted either due to extreme cold (Tundra regions) or aridity (hot deserts).

Entire Antarctica and Arctic and sub- Arctic lands are the major areas of this type. In Northern hemisphere Alaska, northern parts of Canada, Greenland, much of northern Eurasia and the islands north of these areas also are also included in this category. Extensive deserts of Sahara and Kalahari in Africa, deserted areas of Central Asia and South – West Asia, deserts of Peru and Chile and Patagonia plateau in South America, densely forested Amazonia, deserts of South – West U. S. A. and Central – West Australia etc. are included in the Arctic Desert type of population – resource region.

Harsh environmental conditions have a great impact on economy, habitat and society of these regions.Herding is the main economic pursuit.A few tribes of arid lands including Bushmen (Kalahari) and Aboriginals (Australia) are even today hunters and food gatherers. The Eskimos are also hunting people. In South-West Asia and Nothern Africa the petroleum resources have opened up new economic vistas. It is hoped that unforeseen technological advancement in future may enhance their importance significantly because they have many resources in abundance including minerals, fuels, furs, marine life and hydro-electric power potential.