

## Study Materials on

### Core T10 – Environmental Geography (BAHGEOC - 403)

#### Topic 2: Perception of environment in different stages of civilization Topic 4: Ecosystem: Concept, structure and functions

#### for Evening Shift -UG 4<sup>th</sup> Semester

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# Perception of environment in different stages of civilization

## Introduction

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Environment plays a very significant role in human civilization. Trees, plants, creepers, water, river, air, etc. and different kinds of animals play a vital role towards human civilization. The survival of human being is perhaps impossible, even for a single moment, without nature or natural environment. The human being flourish in its lap and at the end take eternal rest therein. Any kind of intolerance and carelessness towards nature and natural elements may bring destruction to human civilization. So, the newly emerging concepts, like the concept of Environmental Awareness has moved into the mainstream of public life as a major national and international concern intending to make aware about the role of nature in human life.

## Concepts of Civilization

A civilization or civilization is any complex society characterized by urban development, social stratification imposed by a cultural elite, symbolic systems of communication (for example, writing systems), and a perceived separation from and domination over the natural environment.

Civilizations are intimately associated with and often further defined by other socio-politico-economic characteristics, including centralization, the domestication of both humans and other organisms, specialization of labour, culturally ingrained ideologies of progress and supremacism, monumental architecture, taxation, societal dependence upon farming and expansionism. Historically, civilization has often been understood as a larger and "more advanced" culture, in contrast to smaller, supposedly primitive cultures. Similarly, some scholars have described civilization as being necessarily multicultural. In this broad sense, a civilization contrasts with non-centralized tribal societies, including the cultures of nomadic pastoralists, Neolithic societies or hunter-gatherers, but sometimes it also contrasts with the cultures found within civilizations themselves. As an uncountable noun, "civilization" also refers to the process of a society developing into a centralized, urbanized, stratified structure. Civilizations are organized in densely populated settlements divided into hierarchical social classes with a ruling elite and subordinate urban and rural populations, which engage in intensive agriculture, mining, small-scale manufacture and trade. Civilization concentrates power, extending human control over the rest of nature, including over other human beings.

Civilization, as its etymology (below) suggests, is a concept originally linked to towns and cities. The earliest emergence of civilizations is generally associated with the final stages of the Neolithic Revolution, culminating in the relatively rapid process of urban revolution and state formation, a political development associated with the appearance of a governing elite.

## Concepts of Environment

Now a day the word environment is often being used by almost all people around us, on television and in newspapers. Everyone is speaking about the protection and pre-serration of environment. Global summits are being held regularly to discuss environmental issues. During the last hundred years, the mutual relationship among environment, social organization and culture has been discussed in sociology, anthropology and geography. All this shows the increasing importance of environment. Besides, it is a fact that life is tied with the environment.

Social sciences have borrowed the concept of ecology from biology. As a branch of biology, ecology is the study of the relationship between living beings and their environment. Sociology has been greatly influenced by biology. Sociology also studies the relationship between man and environment through ecology. Field of study of human ecology in sociology is centered around man and his environment.

The credit of beginning the study of human ecology in the field of sociology goes to Park and Burgess. There exists a close relationship between man and environment. On the one hand man is born in environment and establishes harmony with environment. On the other hand man tires to control his environment and change it according to his requirements. Hence it requires an understanding of the environment of which man is a part.

## Meaning and Definition of Environment

The term environment has been derived from a French word “Environia” means to surround. It refers to both abiotic (physical or non-living) and biotic (living) environment. The word environment means surroundings, in which organisms live. Environment and the organisms are two dynamic and complex component of nature. Environment regulates the life of the organisms including human beings. Human beings interact with the environment more vigorously than other living beings. Ordinarily environment refers to the materialsand forces that surrounds the living organism.

Environment is the sum total of conditions that surrounds us at a given point of time and space. It is comprised of the interacting systems of physical, biological and cultural elements which are interlinked both individually and collectively. Environment is the sum total of conditions in which an organism has to survive or maintain its life process. It influences the growth and development of living forms.

In other words environment refers to those surroundings that surrounds living beings from all sides and affect their lives in toto. It consists of atmosphere, hydrosphere, lithosphere and biosphere. It’s chief components are soil, water, air, organisms and solar energy. It has provided us all the resources for leading a comfortable life.

1. According to **P. Gisbert** ,“Environment is anything immediately surrounding an object and exerting a direct influence on it.”
2. According to **E. J. Ross**, “Environment is an external force which influences us.”

Thus, environment refers to anything that is immediately surrounding an object and exerting a direct influence on it. Our environment refers to those thing or agencies which though distinct from us, affect our life or activity. The environment by which man is surrounded and affected by factors which may be natural, artificial, social, biological and psychological.

### **Components of Environment:**

Environment mainly consists of atmosphere, hydrosphere, lithosphere and biosphere. But it can be roughly divided into two types such as (a) Micro environment and (b) Macro environment. It can also be divided into two other types such as (c) Physical and (d) biotic environment.

(a) Micro environment refers to the immediate local surrounding of the organism.

(b) Macro environment refers to all the physical and biotic conditions that surround the organism externally.

(c) Physical environment refers to all abiotic factors or conditions like temperature, light, rainfall, soil, minerals etc. It comprises of atmosphere, lithosphere and hydrosphere.

(d) Biotic environment includes all biotic factors or living forms like plants, animals, Micro-organisms.

### **Civilization and the Environment**

Anthropomorphic climate change, its associated consequences, and the delicate state of the natural world more generally are at the forefront of the new and emerging threats to civilization (Fagan 2004, 2008). In fact, the nature of humankind's largely exploitative relationship with the wider natural world in general is being called into question and is forcing some of us to seriously rethink that relationship. While Rousseau might have characterized the relationship between human beings and the natural world as one marked by harmony and beneficence, for most the story of civilization has in large part been about humankind's capacity to conquer nature: conquer the wild frontier, tame the animal world, and civilize the barbaric and savage peoples of our own species. As V. Gordon Childe (1948, 1) explains, "progress" and "scientific discoveries promised a boundless advance in man's control over Nature." This attitude toward nature and natural resources has long predominated in European and Western thinking in particular. John Locke (1965, 339/II:42), for instance, in his discussion of the Americas, Amerindians, and property rights, wrote, "Land that is left wholly to Nature, that hath no improvement of Pasturage, Tillage, or Planting, is called, as indeed it is, wast [waste]." The land was there to be improved and exploited in order to accommodate a greater number of people than the Amerindians were inclined to, and if they were not going to make appropriate use of it, then the British were entitled to take it—in fact, it was their duty to do so.

As outlined above in relation to progress, a significant aspect of civilization revolves around evolving or developing, whether from a state of nature, savagery, or barbarism, toward urbanized, scientific, technological

civilization. A large part of this evolutionary process concerns society's capacity to control nature and exploit its resources. This is illustrated by Adam Smith (1869, 289–296) when he outlines four distinct stages of human social development: the first is “nations of hunters, the lowest and rudest state of society,” his prime example being the “native tribes of North America.” The second stage is “nations of shepherds, a more advanced state of society,” such as that of the Tatars and the Arabs. But such peoples still have “no fixed habitation” for any significant length of time, as they move about on the “whim” of their livestock and with the seasons in the endless search for feed. The third stage is that of agriculture, which “even in its rudest and lowest state, supposes a settlement [and] some sort of fixed habitation.” The fourth and most advanced stage is that of civilized, urbanized, commercial society, an efficient and effective exploiter of nature and all the fruits it has to offer. Similarly, Walter Bagehot (1875, 17–19) argued that the “miscellaneous races of the world be justly described as being upon various edges of industrial civilization, approaching it by various sides, and falling short of it in various particulars.” The problem with those falling short, the uncivilized who were supposedly ruled by nature as opposed to rulers of it, was that they “neither knew nature, which is the clock-work of material civilization, nor possessed a polity, which is a kind of clock-work to moral civilization.”

In some ways, the relationship between civilization and nature is not so different from the dialectical relationship between civilization and war: the higher the level of civilization, the greater the exploitation of nature; the greater the exploitation of nature, the more civilization progresses. But as with civilization and war, this relationship cannot go on forever: natural resource extraction and exploitation is not a bottomless pit, but rather is finite and can only support so many people for so long. And of course as our planet is telling us, there are severe consequences associated with the processes of civilization, modernization, urbanization, and all that goes with them. The cycle of extracting more stuff from the ground, processing more stuff, building more stuff, producing more stuff, owning more stuff, throwing away more stuff, and buying more new stuff to replace it is proving unsustainable on such a large scale. The consequences of such excess, in the forms of environmental degradation and climate change, are many and varied; they include melting polar ice caps and rising sea levels, variations in air and sea temperatures, extended periods of drought in some parts of the world while others experience increased rainfall and flooding, and increasing frequency of extreme weather phenomena, to name just a few.

These environmental changes in turn impact our capacity to continue to inhabit certain parts of Earth and our ability to continue to utilize and exploit resources as we have done for centuries. A knock-on effect is that these diverse changes and threats are often interrelated; one realm of security or insecurity can have a direct and dramatic impact on another, generating a kind of vicious cycle of insecurity. For instance, scarcity of and competition for essential resources such as land, food, water, and energy are potential catalysts for violent conflict (Dyer 2008; Mazo 2010; Homer-Dixon 2001; Pumphrey 2008). And these are not just imaginary scenarios; the period 2007–2008 witnessed violent food riots in as many as thirty countries around the globe,

some of them developed Western nations. If the dire predictions are correct, then this is just the tip of the iceberg, so to speak.

## **Impact of Civilization on Earth's environment**

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Humanity exacts a terrifying toll on the planet. After all, everything we build or consume comes out of our environment. It all requires a portion of the world and changes that portion in the process. Varied woodlands become a ubiquitous field of corn. A wilderness becomes a grid of streets, lights and skyscrapers. What's more, we remake the world a little more to our liking every day.

To better gauge civilization's impact on the environment, scientists developed eco-footprint analysis (EFA) to measure just how much land is necessary to support a particular segment of the population's consumption level. By this metric, we can judge how much of a demand individual demographics put on nature.

People in developed countries such as the United States and Japan, for instance, each require an estimated 10 to 25 acres of land to support their lifestyle. That's one heck of a footprint. According to population ecologist William E. Rees, the global average breaks down to 5.4 acres per person. Unfortunately, the planet has only enough bioproductive surface area to allot 4.4 acres to each of its 6.8 billion residents. Human civilization's eco-footprint is already 22 percent beyond sustainable levels.

So far in human history, this insatiable hunger has led to the extinction of countless species, ranging from the woolly mammoths of the Ice Age to the Tasmanian tiger in the 20th century. Even the Neanderthals fell to human clubs and human competition for resources. Other species have thrived, either through cultivation and domestication or reckless introduction into new local ecosystems.

We've turned deserts into farmlands and gorges into artificial lakes; we've erected architectural colossi to house both our living and our dead. Even the atmosphere itself has changed due to our bottomless hunger for resources. Many scientists date human-influenced global climate change back to the Industrial Revolution of the 1800s. Others, such as environmental scientist William F. Ruddiman, insist that carbon dioxide concentrations began to rise 8,000 years ago due to early slash-and-burn agriculture practices.

Pollution has also taken its toll on the environment, poisoning ecosystems with harmful chemicals and littering them with refuse. Garbage dumps have become favored hangouts for advantageous species such as rats and seagulls. Sunken ships and ruined piers have become new underwater habitats.

Along with human enterprise, human conflict has also altered the environment. For example, more than three decades after the Vietnam War, the local ecosystem is still rife with craters, unexploded ordnance and widespread toxic residues that span the entire food chain. Some critics of this form of warfare even go so far as to brand it "ecocide" and petition for its inclusion in international law.

In the centuries ahead, humans may find a way to scale back on their eco-footprint. Likewise, they may learn to manipulate the environment even more or reach out into the solar system for the resources they require.

## Rethinking Civilization

Just over a couple of hundred years ago, Edward Gibbon (1963, 530) wrote that humankind may “acquiesce in the pleasing conclusion that every age of the world has increased and still increases the real wealth, the happiness, the knowledge, and perhaps the virtue, of the human race.” In many ways, the record of human history bears this out: for example, the life expectancy of a Roman during the days of the empire was around twenty-five years. Today the world average life expectancy is somewhere in the mid- to late sixties, and life expectancy is considerably higher in many parts of the world. Thanks in part to advances in science and technology, in the twentieth century alone, the “average national gain in life expectancy at birth [was] 66% for males and 71% for females, and in some cases, life expectancy ... more than doubled” during the course of the century (Kinsell 1992; Galor and Moav 2005). The twentieth century also witnessed unprecedented urbanization, a key marker of progress and development, with an increase from 220 million urban dwellers, or around 13% of the world’s population, at the beginning of the century to 732 million or 29% by mid-century and reaching around 3.2 billion people or 49% in 2005. With urbanization expected to continue apace, it is estimated that by 2030 almost 5 billion people will live in cities, equivalent to roughly 60% of the global population (United Nations 2005).

In respect to the global economy, it has been calculated that in the past millennium, during which the global population increased some twenty-two-fold, global per capita income rose by approximately thirteen times, while global GDP expanded by a factor of almost 300. The vast majority of this growth can be attributed to advances made as a consequence of the Industrial Revolution; since 1820 the global population has grown by a factor of five, while per capita income has increased approximately eight-fold. This kind of development far outstrips the preceding millennium, when Earth’s population is estimated to have grown by as little as one-sixth, and during which time per capita income was largely stagnant (Maddison 2006).

It might seem then that civilization is chugging along quite nicely, just as so many have imagined it; we live longer than our predecessors, we are better educated than ever before, and we have access to far more stuff than most of us will ever need. But at what cost have this civilization and progress come to us and our planet? The distinguished scientist, the late Frank Fenner—the man who announced to the world in 1980 that smallpox had been eradicated—recently stated that he is convinced that “Homo sapiens will become extinct, perhaps within 100 years.” Like others, he argues that Earth has entered the Anthropocene, and while “climate change is just at the very beginning ... we’re seeing remarkable changes in the weather already.” It is on this basis that he argues that humankind will collectively “undergo the same fate as the people of Easter Island.” The only things that

will be left of us are our monuments to the excesses of a fallen civilization. Before then, as Earth's "population keeps growing to seven, eight, or nine billion, there will be a lot more wars over food." And not only are humans doomed, so are a "lot of other animals ... too. It's an irreversible situation" (Fenner in Jones 2010; Boulter 2002).

It is difficult to believe that the human condition is really that perilous, that the thin ice of civilization is melting away so quickly and so dramatically that its future is at risk. Are we really lurching toward some sort of post-apocalyptic world like that depicted in *Mad Max* or *The Road*? While climate change skeptics might beg to differ, at the very least, all is not well in the world of civilization. I suggest that a good part of the problem may well be the very way in which we conceive of civilization and progress, which for so long now has been predominantly all about the social, political, and material dimensions of civilization at the expense of its ethical and other-regarding dimensions. In considering human progress, Ruth Macklin (1977, 370) is slightly at odds with Gibbon in her claim that it "is wholly uncontroversial to hold that technological progress has taken place; largely uncontroversial to claim that intellectual and theoretical progress has occurred; somewhat controversial to say aesthetic or artistic progress has taken place; and highly controversial to assert that moral progress has occurred."

The question of moral progress appears to be at the heart of the major challenges to civilization outlined above. In respect to both the relationship between civilization and war and that between civilization and the environment, we can see two potentially self-destructive processes in which civilization brings about its own demise as it cannibalizes itself in a kind of suicidal life cycle. The relationship between civilization and war is seemingly one in which war making gives rise to civilization, the organizational and technological advances of which in turn promote yet more bloody and efficient war making, which in turn eventually brings about the demise of civilization either through overstretch or internal collapse. Similarly, up to this point in human history, the march of civilization has largely been at the expense of the environment and the natural world more generally. And now, in turn, the environment is threatening the future of civilization through the potentially catastrophic consequences of climate change. In both cases this represents a sort of vicious circle in which civilization is ultimately its own worst enemy. On top of this are the less than savory things done in the name of civilization; for centuries civilization has proven to be hell bent on expunging that which is not civilized, or that which is deemed a threat to civilization. The consequences range from European conquest and colonization to the global war on terror.

The Nobel Peace Laureate of 1952, Albert Schweitzer, offers a different take on civilization that owes more to moral and ethical considerations than to sociopolitical and material concerns. He writes (1947, viii), "Civilization, put quite simply, consists in our giving ourselves, as human beings, to the effort to attain the perfecting of the human race and the actualization of progress of every sort in the circumstances of humanity and of the objective world." This giving of ourselves is as much an attitude or frame of mind as it is a political,

material, or cultural expression of civilization, for it necessarily “involves a double disposition: firstly, we must be prepared to act affirmatively toward the world and life; secondly, we must become ethical.” For Schweitzer (1967, 20), the “essential nature of civilization does not lie in its material achievements, but in the fact that individuals keep in mind the ideals of the perfecting of man, and the improvement of the social and political conditions of peoples, and of mankind as a whole.” And as he put it slightly differently (1947, ix), “Civilization originates when men become inspired by a strong and clear determination to attain progress, and consecrate themselves, as a result of this determination, to the service of life and the world.” This call for service to life and the world is at the heart of Schweitzer’s philosophy of civilization, which in effect is also his account of ethics; it is what he referred to as the idea of Reverence for Life (Ehrfurcht vor dem Leben), which requires of us a “world-view” that is other-regarding and extends a right to life and an ethic of “responsibility without limits towards all that lives” (1967, 215; Cicovacki 2007). In the age of the “selfie” and the self-obsession that goes with it, perhaps this is too much to ask, but that should not and need not be the case.

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# Ecosystem: Concept, structure and functions

## Concept of an Ecosystem:

Living organisms cannot live isolated from their non-living environment because the latter provides materials and energy for the survival of the former i.e. there is interaction between a biotic community and its environment to produce a stable system; a natural self-sufficient unit which is known as an ecosystem. Page 10

An ecosystem is, therefore, defined as a natural functional ecological unit comprising of living organisms (biotic community) and their non-living (abiotic or physio chemical) environment that interact to form a stable self-supporting system. A pond, lake, desert, grassland, meadow, forest etc. are common examples of ecosystems.

The term ecosystem was coined in 1935 by the Oxford ecologist Arthur Tansley to encompass the interactions among biotic and abiotic components of the environment at a given site. The living and non-living components of an ecosystem are known as biotic and abiotic components, respectively.

Ecosystem was defined in its presently accepted form by Eugene Odum as, “an unit that includes all the organisms, i.e., the community in a given area interacting with the physical environment so that a flow of energy leads to clearly defined trophic structure, biotic diversity and material cycles, i.e., exchange of materials between living and non-living, within the system”.

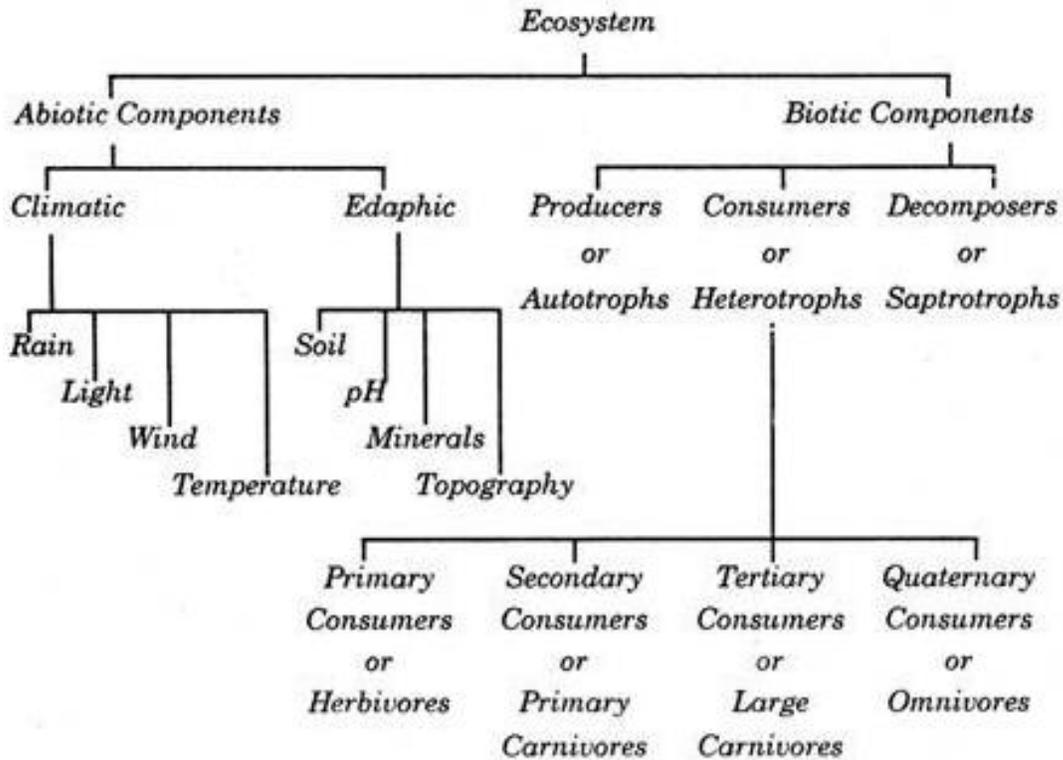
**Smith (1966)** has summarized common characteristics of most of the ecosystems as follows:

1. The ecosystem is a major structural and functional unit of ecology.
2. The structure of an ecosystem is related to its species diversity in the sense that complex ecosystem have high species diversity.
3. The function of ecosystem is related to energy flow and material cycles within and outside the system.
4. The relative amount of energy needed to maintain an ecosystem depends on its structure. Complex ecosystems needed less energy to maintain themselves.
5. Young ecosystems develop and change from less complex to more complex ecosystems, through the process called succession.
6. Each ecosystem has its own energy budget, which cannot be exceeded.
7. Adaptation to local environmental conditions is the important feature of the biotic components of an ecosystem, failing which they might perish.
8. The function of every ecosystem involves a series of cycles, e.g., water cycle, nitrogen cycle, oxygen cycle, etc. these cycles are driven by energy. A continuation or existence of ecosystem demands exchange of materials/nutrients to and from the different components.

## Structure and Function of an Ecosystem:

Each ecosystem has two main components:

- (1) Abiotic
- (2) Biotic



**Schematic Representation of the Structure of an Ecosystem.**

### (1) Abiotic Components:

The non living factors or the physical environment prevailing in an ecosystem form the abiotic components. They have a strong influence on the structure, distribution, behaviour and inter-relationship of organisms.

Abiotic components are mainly of two types:

#### (a) Climatic Factors:

Which include rain, temperature, light, wind, humidity etc.

#### (b) Edaphic Factors:

Which include soil, pH, topography minerals etc.

### The functions of important factors in abiotic components are given below:

Soils are much more complex than simple sediments. They contain a mixture of weathered rock fragments, highly altered soil mineral particles, organic matter, and living organisms. Soils provide nutrients, water, a

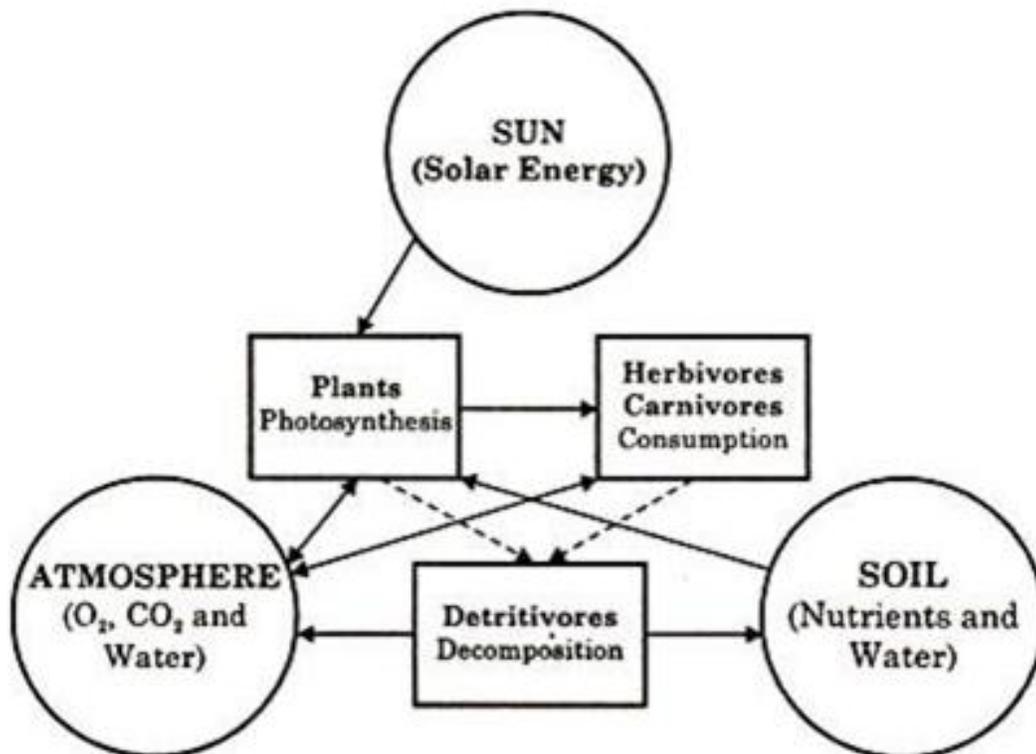
home, and a structural growing medium for organisms. The vegetation found growing on top of a soil is closely linked to this component of an ecosystem through nutrient cycling.

The atmosphere provides organisms found within ecosystems with carbon dioxide for photosynthesis and oxygen for respiration. The processes of evaporation, transpiration and precipitation cycle water between the atmosphere and the Earth's surface.

Solar radiation is used in ecosystems to heat the atmosphere and to evaporate and transpire water into the atmosphere. Sunlight is also necessary for photosynthesis. Photosynthesis provides the energy for plant growth and metabolism, and the organic food for other forms of life.

Most living tissue is composed of a very high percentage of water, up to and even exceeding 90%. The protoplasm of a very few cells can survive if their water content drops below 10%, and most are killed if it is less than 30-50%.

Water is the medium by which mineral nutrients enter and are trans-located in plants. It is also necessary for the maintenance of leaf turgidity and is required for photosynthetic chemical reactions. Plants and animals receive their water from the Earth's surface and soil. The original source of this water is precipitation from the atmosphere.



**Relationship within an Ecosystem.**

## **(2) Biotic Components:**

The living organisms including plants, animals and micro-organisms (Bacteria and Fungi) that are present in an ecosystem form the biotic components.

On the basis of their role in the ecosystem the biotic components can be classified into three main groups:

(A) Producers

(B) Consumers

(C) Decomposers or Reducers.

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### **(A) Producers:**

The green plants have chlorophyll with the help of which they trap solar energy and change it into chemical energy of carbohydrates using simple inorganic compounds namely water and carbon dioxide. This process is known as photosynthesis. As the green plants manufacture their own food they are known as Autotrophs (i.e. auto = self, trophos = feeder)

The chemical energy stored by the producers is utilised partly by the producers for their own growth and survival and the remaining is stored in the plant parts for their future use.

### **(B) Consumers:**

The animals lack chlorophyll and are unable to synthesise their own food. Therefore, they depend on the producers for their food. They are known as heterotrophs (i.e. heteros = other, trophos = feeder)

The consumers are of four types, namely:

(a) Primary Consumers or First Order Consumers or Herbivores:

These are the animals which feed on plants or the producers. They are called herbivores. Examples are rabbit, deer, goat, cattle etc.

(b) Secondary Consumers or Second Order Consumers or Primary Carnivores:

The animals which feed on the herbivores are called the primary carnivores. Examples are cats, foxes, snakes etc.

(c) Tertiary Consumers or Third Order Consumers:

These are the large carnivores which feed on the secondary consumers. Example are Wolves.

(d) Quaternary Consumers or Fourth Order Consumers or Omnivores:

These are the largest carnivores which feed on the tertiary consumers and are not eaten up by any other animal. Examples are lions and tigers.

**(C) Decomposers or Reducers:**

Bacteria and fungi belong to this category. They breakdown the dead organic materials of producers (plants) and consumers (animals) for their food and release to the environment the simple inorganic and organic substances produced as by-products of their metabolisms.

These simple substances are reused by the producers resulting in a cyclic exchange of materials between the biotic community and the abiotic environment of the ecosystem. The decomposers are known as Saprotrophs (i.e., sapos = rotten, trophos = feeder)

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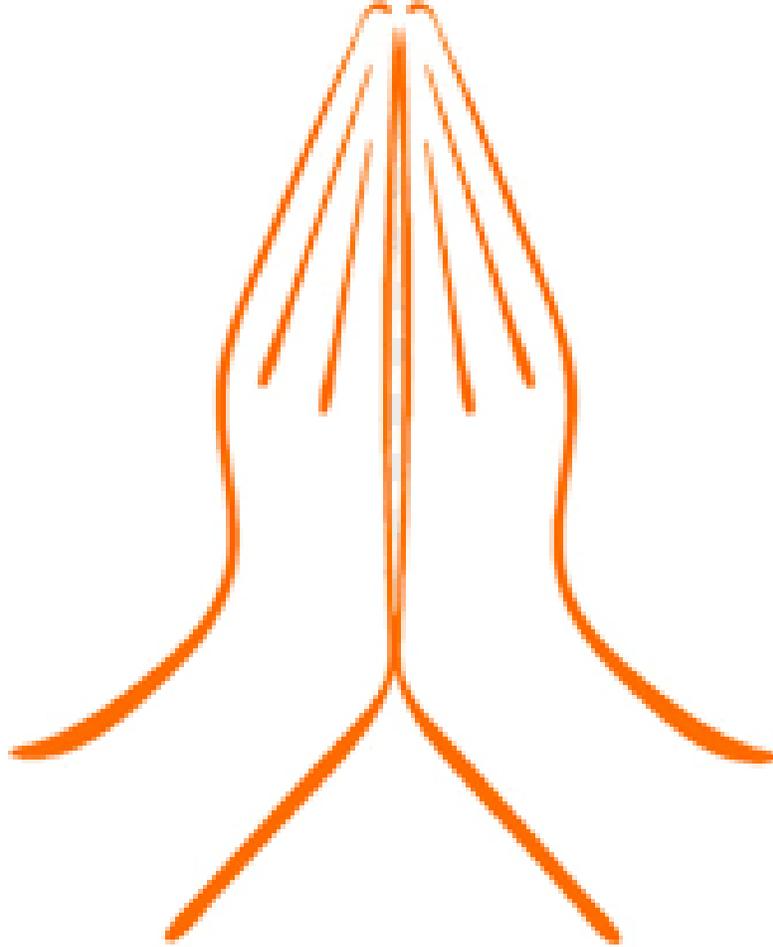
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# नमस्कार



# Study Materials on Core T8 – Regional Planning and Development (BAHGEOC – 401)

[Unit: I: Topic 2: Types of planning, **principles** and objectives of regional planning, multi- level planning in India]  
for  
Evening Shift -UG 4<sup>th</sup> Semester

## Topics covered in this discussion

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# Principles of planning

Planning requires scientific thinking and it should spell out in clear terms the definition of the purpose, analyze the problem and make a careful and diligent search for all the facts bearing upon it. The task of planning will be well-accomplished if some fundamental principles are followed in the process.

The important principles may be stated as follows:

## **1. Principle of Commitment:**

This means that certain resources must be committed or pledged for the purpose of planning. Planning is not an easy task. So, necessary help is to be taken from experts. The enterprise must be ready to exhaust the available resources for the achievement of a plan.

## **2. Principle of the Limiting Factor:**

A plan involves varied factors of different importance. This principle implies that more emphasis has to be put on that factor which is scarce or limited in supply or extremely costly. This will help in selecting the most favourable alternative.

## **3. Principle of Reflective Thinking:**

Planning, being an intellectual activity is based on rational considerations. These involve reflective thinking which signifies problem-solving thought process—a process by which past experiences are superimposed on the facts of the present situation and possible future trends. None can be a planner whose mind is not active, who does not possess any deliberate power and whose sense of judgement is not strong.

## **4. Principle of Flexibility:**

Though a plan is prepared after reflective thinking, this does not mean that no departure can be made in the course of its operation. The plan should be so prepared that there is sufficient scope for changing it from time to time. Changes must necessarily be effected in the plan for taking into account new developments that may take place in the course of the operation of the plan.

## **5. Principle of Contribution to Enterprise Objectives:**

A major plan is prepared and it is supported by many derivative plans. But all plans must contribute in a positive way towards the achievement of the enterprise objectives.

## **6. Principle of Efficiency:**

A plan should be made efficient to attain the objectives of the enterprise at the minimum cost and least effort. It must also achieve better results with the minimum of unexpected happenings. Therefore, it is to be seen that what is expected is likely to be achieved.

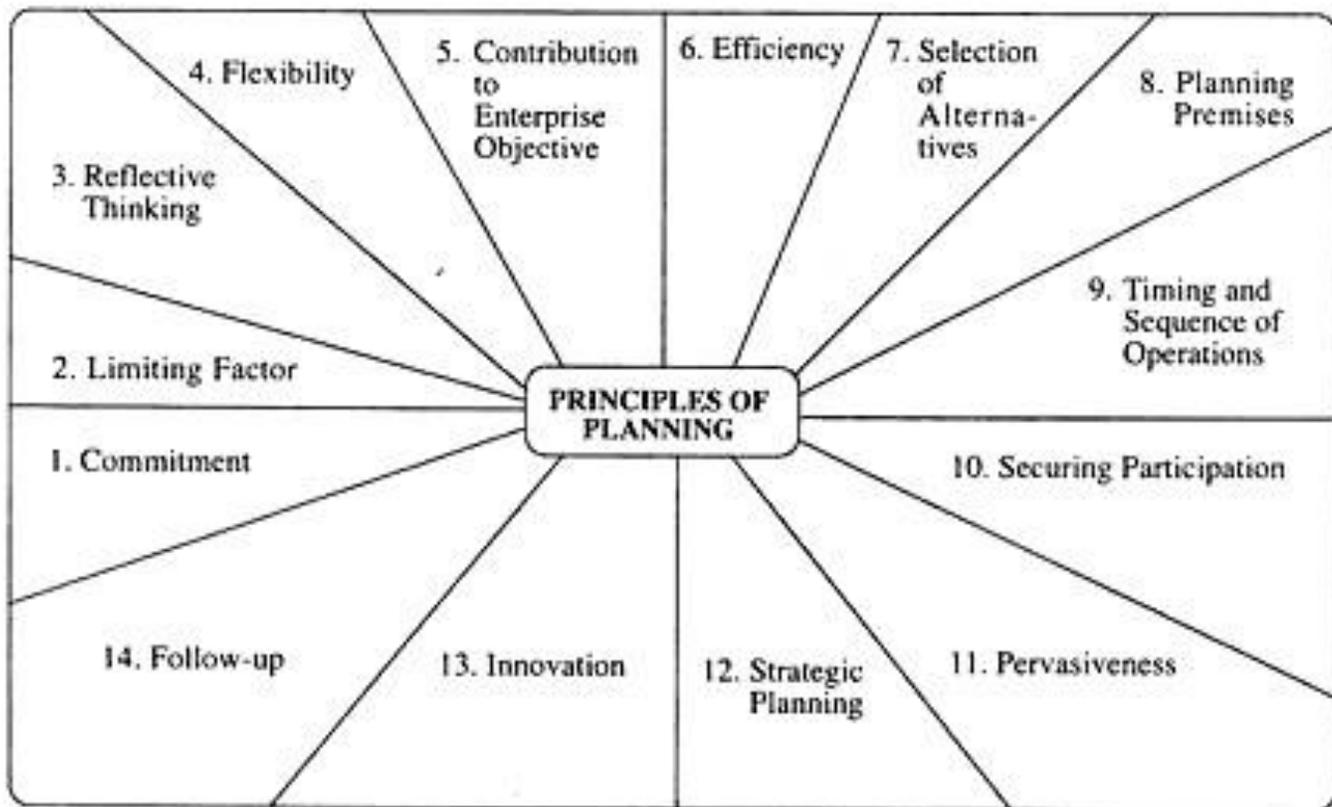
## **7. Principle of Selection of Alternatives:**

Planning is basically a problem of choosing. The essence of planning is the choice among alternative

courses of action. There is no need for planning if there is only one way for doing something. In choosing from alternatives, the best alternative will be that which contributes most efficiently and effectively to the accomplishment of a desired goal.

### 8. Principle of Planning Premises:

A plan is prepared against some foundations or backgrounds known as 'Planning Premises'. There must be complete agreement among the managers in respect of planning premises over which the structure of plan is to be framed.



Principles of Planning.

### 9. Principle of Timing and Sequence of Operations:

Timing and sequence of operations determine the starting and finishing time for each piece of work according to some definite schedule and give practical and concrete shape and form to work performance.

### 10. Principle of Securing Participation:

To secure participation of the employees with whole-hearted co-operation in execution of the plan, it is necessary that the plan must be communicated and explained to them for their full understanding. This understanding provides the basis for additional knowledge about new facts and matters to the employees.

This

is needed for improvement in the quality of planning. It also ensures an obligation of the personnel of the enterprise to execute the plan by individual and joint participation.

### **11. Principle of Pervasiveness:**

Though major planning function is entrusted to the top management, it is not restricted to the top level only. It is a function of every manager at every level in the organisation.

### **12. Principle of Strategic Planning:**

Strategic planning is essential where there is competition. It is prepared in the light of what the competitors are intending to do. Planners must take into account the strategies of the rival organisations, otherwise the planning projection may land them in trouble.

### **13. Principle of Innovation:**

A good system of planning should be responsive to the opportunities for innovation. Innovation consists in creating something new for increasing satisfaction of the consumers. This may also be stated as an important strategy of business. Innovation is a necessity for its sustaining growth in this dynamic world. Innovation is achieved through research and development and planning is required to provide such scope.

### **14. Principle of Follow-up:**

In the course of execution of a plan, certain obstacles may crop up in midway and planning may require revision, alteration or correction. This is why there must be a follow-up system in the planning process itself. This allows timely changes in the planning and makes it more effective.

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# Multi-level Planning of India

A planning process can be either single-level or multi-level. In the single-level planning, the formulation of plans and decision making are done at the national level; the process is centralised and the lower territorial levels come into the picture only at the implementation stage. On the other hand, in the multi-level planning process, the national territory is divided into small territorial units, their number depending upon the size of the country, the administrative, the geographical and cultural settings.

The concept of multi-level regional planning may be defined as 'planning for a variety of regions which together form a system and subordinate systems'. In multi-level planning, the various levels of planning provide bases for higher-level planning. Similarly, the higher-level regional plans provide the basic frame-work for the lower-level plans. In such plans, there is direct participation of the people in the planning process. In multi-level planning, every region/unit constitutes a system and hence, the planning process becomes more effective.

The various levels of multi-level planning in India are: (1) Centre, (2) States, (3) Districts, (4) Blocks, and (5) Villages. Before the Amendment of the Constitution in 1992, the task of plan formulation was basically carried out by the Centre and the State governments. The other levels (district, block, and village) of the planning process came into the picture only at the implementation stage of planning. However, after 1992, the lower levels of planning have been given more powers in the formulation and implementation of their plans and financial provisions.

## 1. The First-Level Planning

In the context of multi-level planning in India, the first (and foremost level) is constituted by the Central Government. The Head of the Government is the President who acts under the advice of the Council of Ministers headed by the Prime Minister. The advice of the Council of Ministers is binding on the President. The business of the government is transacted through a three tier set up. The Prime Minister, Cabinet Minister, Minister of State, Deputy Ministers, and Parliamentary Secretaries constitute the first or top layer. The second layer is constituted by the secretariat organisation of the ministry with the secretary as head. The executive organisation of the department, comprising the ministry, forms the third layer. The actual task of plan formulation is done by the Planning Commissions at the Centre which has the Prime Minister as Chairman, and some members of the Cabinet and three or four full-time professional experts as members.

## 2. The Second-Level or State Level Planning

The second level is constituted by the States. The Executive head of a state is the Governor, who is appointed by the President of India on the advice of the Prime Minister of India. As in the case of the Centre, the Governor does not directly exercise the powers that are vested in him. They are exercised through the Council of

Ministers headed by the Chief Minister. The advice of the Council of Ministers is binding on the Governor. The Council of Ministers works through the secretariat that is headed by a secretary. The main functions of the secretariat relate to assisting the ministers in policy making and in discharging their legislative responsibilities, co-ordination of policies and programmes, supervision and control of expenditure, efficient running of administration, etc. The Council of Ministers has a number of departments functioning under it which can be broadly classified into three categories:

- (a) Development departments (having the departments of agriculture and animal husbandry, rural development, public works and industries).
- (b) Social welfare departments (having the departments of education, health and social welfare).
- (c) Coordinating departments (having home, revenue, finance and planning departments).

Since the Indian Union is a federation of States, the framers of the Constitution have provided for division of powers between the Centre and the States, so that the chances of confrontation between the two levels of government may be minimised. The division of powers between the Centre and the States is according to the seventh schedule and Article 246 of the Constitution. Article 246 gives three lists of subjects: 1. Union List (containing 97 items), 2. State List (containing 66 items), and 3. Concurrent List (containing 49 items).

The Central Government has the power to legislate on the subjects given in the Union List while the State governments have powers to legislate on the subjects given in the State List. As far as subjects contained in the Concurrent List are concerned, both Central and State governments have powers to legislate on them, but in case of conflict, the Central law prevails. Organised activities such as industries, minerals, railways and telecommunications come under the Centre's responsibilities, while agriculture, collection of land revenue, irrigation, power, public health, education, local self government, and several other important subjects come under the control of states.

### **3. The District-Level Planning**

There are generally three levels below the State level, namely, district, block and village. The district administration is under the overall charge of the collector, also known as deputy commissioner in some states). He is responsible for maintaining law and order in the district. He also works as a coordinator among various departments. Important departments located in the district include the agriculture, minor, medium and major irrigation, animal husbandry, dairying, forestry, industries, public works, cooperation, education, medical and public health, social welfare and panchayati raj, etc. Besides, there are autonomous agencies with offices in the district such as electricity board, state transport and special agencies set up for special programmes such as

SFDA, DPAP, etc. Though the collector generally works as a coordinator, his role is not defined properly and differs in different states. This introduces complexities and difficulties in the task of administration.

#### 4. The Block-Level Planning

At levels below the district, there are blocks and villages. The block level planning was started during the First Five Year Plan. Each district was divided into a number of blocks and each block comprised about 100 villages with a population of about 60,000. The programme visualised (i) mobilisation of local resources, and (ii) participation of people in the decision making and implementation of the development scheme. Hence, a new unit of planning was created at block level under the leadership of a block development officer and a team of various specialists and village level workers. The general supervision of blocks was made by the Block Samitis under the chairmanship of the Block-Pramukh and elected representatives.

The set-up basically consists of a block development officer who is assisted by five extension officers, one each in the field of agriculture, animal husbandry, cooperation, panchayats, and rural industries. The other staff consists of an overseer, a social education organiser, a progress assistant and village level workers. In the block, there are also veterinary stockmen, a medical officer, a sanitary inspector, and a lady health visitor; some of them with necessary supporting staff. In some states, there is also an extension officer for programmes relating to women and children.

The block-level planning focuses more on local problems. At the micro level it becomes easier to identify target groups which enables the optimum utilisation of local resources. The entire strategy of the block-level planning is based on employment planning, growth-centre planning, and credit planning.

The following activities are planned at the block level:

- |   |  |
|---|--|
| (i) Agriculture and allied activities                 | (xi) Social Services   |
| (ii) Minor irrigation                                 | (a) Drinking water supply  |
| (iii) Soil conservation and water management          | (b) Health and nutrition   |
| (iv) Animal husbandry and poultry                     | (c) Education  |
| (v) Fisheries   | (d) Housing  |
| (vi) Forestry   | (e) Sanitation   |
| (vii) Processing of agricultural produce              | (f) Local transport  |
| (viii) Organising input supply, credit, and marketing | (g) Welfare programme  |
| (ix) Cottage and small industries                     | (xii) Training of local youth and updating of skills of local population |
| (x) Local infrastructure                              |  |

## 5. The Panchayat-Level Planning

A Panchayat is an elected body at village level. The Panchayat Raj System involves a three-tier structure:

- (i) village level,
- (ii) block level , and
- (iii) district level.

The first tier at the village level is commonly known as Gram Panchayat or Gram Sabha (Village Assembly), the second tier at block level as Panchayat Samiti, and the third tier at district level as Zila Parishad. According to the provisions of Panchayat Acts 1996, the election to the Village Panchayat is held at an interval of five years where there is proportionate seat reservation for Scheduled Castes and Scheduled Tribes, and not less than one third seats for women. There are about 2.20 lakh Gram Panchayats, 5500 Panchayat Samitis, and over 600 Zila Prishads in the country.

Through the Constitution Amendment Act 1992, the Panchayat, also called Gram Sabha, has been authorised to look after the preparation and implementation of plans for economic development and social justice on an illustrative list of 29 subjects. The respective states have been given discretionary powers to prescribe powers and functions of the Gram Sabha to act as an institution of self government. It has also been advised to constitute a District Planning Committee to consolidate the plans prepared by the Panchayats and Municipalities, and prepare an integrated development plan for the district as a whole. It has also been directed to constitute a State Finance Commission (SFC) to review every five years, the financial position of Panchayats, to make recommendations about the principle governing the distribution of revenue between the state and the Panchayats, and determination of the grants-in-aid to the Panchayats from the Consolidated Funds of the State. The implementation of the plan at the Panchayat-level is the responsibility of the Village Development Officer (VDO) and the secretary, and is supervised by the Gram Sabha which is headed by the Gram Pradhan. Under the existing provisions, funds for the Gram-Sabha (Village Panchayat) are directly being allocated from the centre to execute rural development programmes like Integrated Rural Development (IRDP) and Jawahar Rojgar Yojna (JRY).

The Panchayat has also been entrusted with the responsibility for the (i) promotion of agriculture, (ii) rural industries, (iii) provision of medical facilities, (iv) maternity, women, and child welfare, (v) maintaining common grazing grounds, (vi) village roads, tanks, wells, (vii) sani-tation, and execution of other socio-economic development programmes. The Panchayats have also been authorised to identify the beneficiaries in anti-poverty programmes.

After the Constitution Amendment of 1992, the new status accorded to the Panchayats by the Constitution has raised high hopes and expectations among the elected representatives and the rural folk at large. But owing to the political complexions of the governments in Indian states, the reluctance of the state-level political and administrative functionaries to part with power and authority, and some genuine financial and economic difficulties, the progress in the implementation has been somewhat slow. It has been found that the elected representatives of Panchayat Raj Institution are largely unaware of the political and economic dimensions of development issues and lack of planning and managerial skill. This is particularly true of elected women representatives, who are performing their duties under some severe constraints of — different kind.

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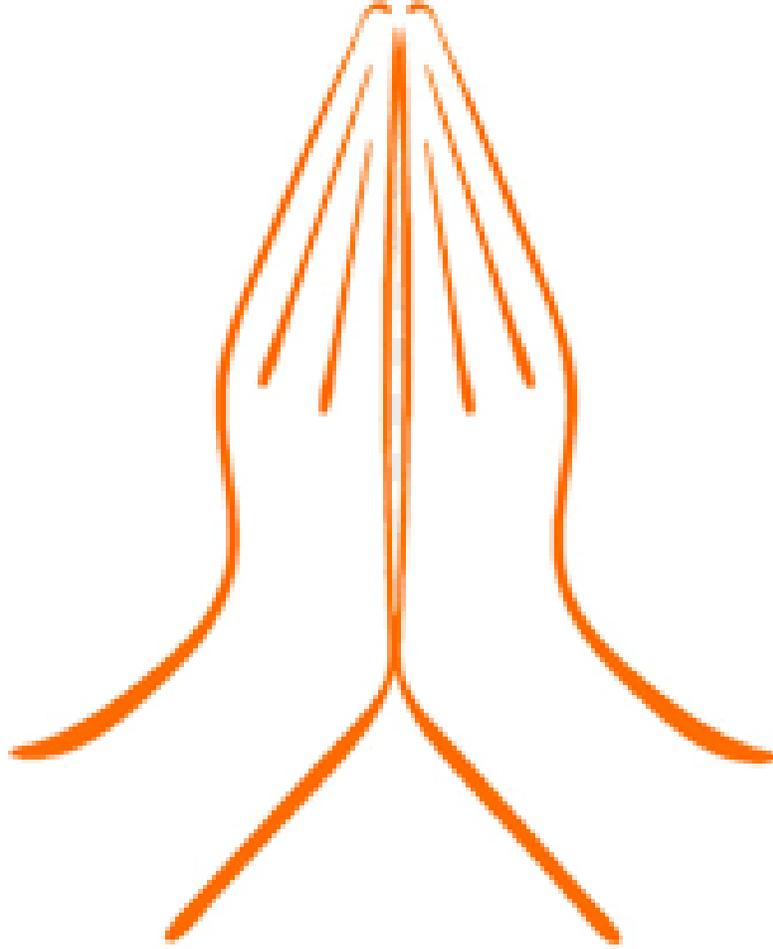
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# नमस्कार



**Study Materials**  
**on**  
**Core T8 – Regional Planning and Development**  
**(BAHGEOC – 401)**

**[Unit: I: Topic 2 : Types of planning, principles and objectives of regional planning, multi- level planning in India]**

**for**  
**Evening Shift -UG 4<sup>th</sup> Semester**

**by**  
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E-materials are also available on the website : <https://sites.google.com/view/geography-library>

# Planning

- Planning is a major and primary function of management. No organization can operate properly without planning.
- Planning is a preparatory step for action. It means systematized pre-thinking for determining a course of action to achieve some desired result.
- Planning is essentially a process of deciding in advance what is to be done, when and where it is to be done, and how it is to be done, and by whom. To plan is to look ahead and chalk out the future course of operations of an enterprise.
- Through planning, the manager fixes the objectives of the organization as a whole and, in the light of this, the goals of its various departments. Then he proceeds to prepare a kind of 'blueprint' mapping out the ways of attaining these objectives.

“Planning has been defined as the process of thinking through and implementing a set of appropriate action to achieve some goals.” **(John Ston, 1981)**

“Planning include a sequence of action which area designed to solve problems in the future.” **(Glasson, 1975)**

“To plan is to act with a purpose to choose and choice is the essence to economic activity.” **(Robinson)**

“Planning is a technique for achieving certain seif-defined and pre-determinded goals by a central planning authority.” **(Dickinson)**

# Types of planning

1. Physical Planning
2. Economic Planning
3. Environmental Planning
4. Allocative Planning
5. Innovative Planning or development Planning
6. Multiobjective Planning
7. Single objective Planning
8. Imperative Planning
9. Indicative Planning
10. Manifest Planning
11. Latent Planning
12. Advisory Planning
13. Regional Planning
14. Command Planning

# Steps of planning

1. The formulation of general goals and more specific and measurable objectives relating to the problem.
2. Identification of possible constraints.
3. Projection of the future situation.
4. Generation and evaluation of alternative causes of action.
5. Production of preferred plan with policy statement or strategy and a definitive plan.
6. To give preference to definite plan as the aims of productive increase.
7. Provision of continuous evaluation of the implementation programme.

# Objectives of regional Planning

1. Improvement of the quality of life
2. Increase national and per capita income
3. To provide proper employment
4. Rapid rate of industrialization
5. Self-dependency in the production of crops and raw materials
6. Proper distribution of national income and national resources
7. To sweep out the poverty
8. To protect the rapid growth of population
9. To make a balance between demand and supply
10. Ensure the proper distribution of national resources
11. To make a proper solution of the unemployment problem
12. To sweep out the economic disparity
13. Development in education
14. Urbanization through a proper way
15. To sweep out the economic disparity of the country

# Multi-Level Planning in India

1. National level planning
  - a) Short tern planning
  - b) Long tern planning
  - c) Middle term planning
2. Local level planning
3. Intermediate level planning
4. Regional level planning
5. Sub-regional level planning

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