

Regional Planning & Development

Part II of VI Parts

Part II. Types of Regions & Regionalization of India

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Regional Planning & Development—MSW Community Development Syllabus

1. Concept of Region - **Functional and Formal Regions -Techniques of Regional Delimitation.**
 2. **Classification and hierarchy of regions - Regionalization in India** - Concept of Rural- Urban Continuum.
 3. Definition. Scope and Content of Regional Planning - Regional imbalances and inequalities in India – Backward Area Development – Industrial Estates and Clusters – Sub plan approach
 4. Methods and techniques of regional analysis and development- Export Base Model - Neo-classical Model - Input –Output Analysis.
 5. Central Place Theory. Growth Pole Hypothesis - Myrdal's Theory of Cumulative Causation,
 6. Directions in Regional Planning. Town and Country Planning - River Valley Planning- Resource Planning - Multi –level Planning - Need and Methods of Micro-level Planning. Relevance of micro-level planning in community development.
- Tamilnadu - Planning Regions in Tamilnadu - Regional Planning in Tamilnadu. Resources of Tamilnadu - Rural and urban development with reference to Tamilnadu.

United Nations Centre for Regional Development

UNCRD





I dedicate these resources on Regional Planning to Kundrakudi Adigalar, the great sage of Tamilnadu for his untiring efforts to promote Micro Level Planning, who made me to understand the need and importance of planning to shape the destiny of the dispossessed, that made Smt. Indira Gandhi, the late Prime Minister of India to comment on his work as “this is what I wanted for all my villages”

Regions and Their Types

Synopsis

Definition

Classification

- ✓ Regional Economics
- ✓ Multi-level planning
- ✓ Stages-of-development

Activity status analysis Popular Region Types

- ✓ Homogenous
- ✓ Heterogeneous (Nodal/Functional)
- ✓ Planning

Types of Regions – Multi-Level Planning Perspective

- ✓ Macro Regions
- ✓ Meso Regions
- ✓ Micro Regions
- ✓ Micro – Minor Region

Types of Regions on the basis of stages of economic development

- ✓ Developed / Development Regions
- ✓ Backward Regions
- ✓ Neutral Regions/ Intermediate regions

Types of Regions based on the activity status analysis

- ✓ Mineral regions
- ✓ Manufacturing Regions and Congested Regions
- ✓ Cultural Regions

Regionalization

Definition

A region is a sub-system within a system (the country itself) and if sub-systems develop greater inter-connectivity, the greater will be the efficiency of the system. All regions are 'problem regions' in one way or the other, level of development notwithstanding. A structural set of different types of regions has its own 'dualism' everywhere. The essential task of planning is to bind various regions into a system in which only those inequalities remain in which simply cannot be obliterated.

A) Regions in Regional Economics

1. Homogeneous Regions of various hues. Formal regions.
2. Nodal, polarized, heterogeneous, or functional regions.
3. Planning and Programming Regions.

B) Regions in Multi-level planning

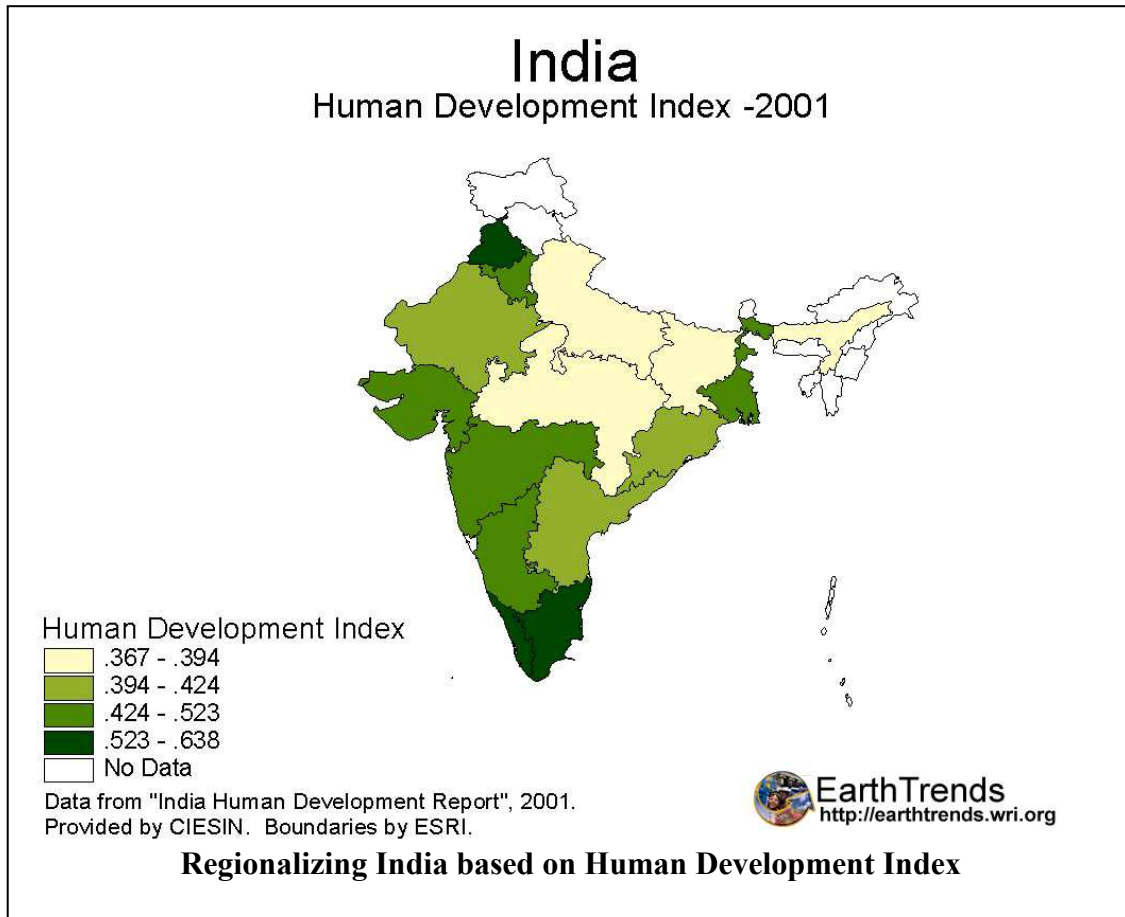
1. Macro region
2. State region/ Micro region
4. Micro region

C) Regions in in the 'stages-of-development' analysis

1. Developed Region
2. Backward and Depressed Region (Vestigial regions also)
3. Neutral and Intermediate Regions.

D) Regions as per the activity status analysis

1. Mineral regions
2. Manufacturing regions
3. Urban and or Congested regions



Regions have been delimited on several criteria: economic, administrative, physical or activity regions. Geographers, economists and administrators invariably delimit the regions in different manner.

Problems in defining regions

Harry W. Richardson wrote. "Defining regions precisely is such a nightmare that most regional economists prefer to shy away from the task, and are relieved when they work with administrative regions on the grounds that policy considerations require it or that data are not available for any other spatial units."

Too small sub-regions are less significant for comprehensive planning. In the words of Carter:

"Countries differ enormously both in size and in the variety of localized economic communities that they contain, but in most of them there is some sort of awareness of a small number usually form two to a dozen-spatially distinguishable division, different in economic aspects that bear upon national policy. Beyond them there lie and indefinite number of smaller divisions, sometimes with very clear differences of welfare and interest separate towns and rural districts, working -class and middle-class suburbs, manufacturing- which exclude from the discussion for a variety of reasons."

"There has been a great deal of discussion of the regional concept, but this has not led to any firm agreement. Probably the most prevalent view is that there is no unambiguous method of defining an ideal region and that wherever possible spatial analysts should

work with the more neutral concept of space. It is clear that a region is a supra urban on the one hand, and a sub-area of the nation on the other. A common procedure is to delimit the region by reference to physical criteria, administrative boundaries or data availability. Certainly, most researchers accept that it is easier to define the core of a region (usually a central city) than to map its outer boundary.”(Richardson)

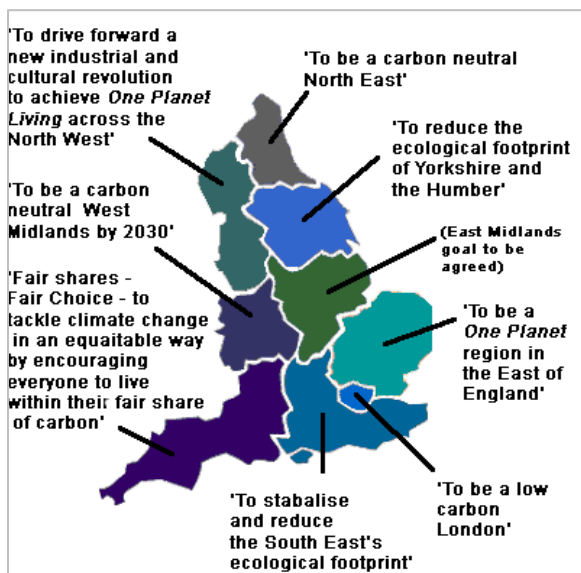
North defined that a region should be defined in terms of its export base.

Many writers belonging to disciplines other than economics were more inclined to define region as a homogeneous geographical region, even when they accepted such concepts as ‘export base!’

Popular Region Types (Homogenous/ Heterogeneous (Nodal/Functional)/ Planning)

1 Homogenous Region

They are formal regions and if the basis of homogeneity is topography, rainfall, climate or other geo-physical characteristic, they are geographer’s darlings.



Economic homogeneity is more relevant for planning. The structure of employment, the occupational pattern, the net migration, the density of population, the resource and industrial structure, if similar in a space, the regions become homogeneous in economic sense. The greater the economic similarities, the greater the interest the economists will have in homogeneous regions. Internal differences in a region are unimportant. Sometimes, however, a clear-cut homogeneous region may have, as many differences in sub-regions as to make them quite different yet a region may remain ‘homogeneous’. Scotland or Uttar

Pradesh are clear-cut homogeneous regions but in topography the hilly districts of Uttar Pradesh have nothing in common with the districts of the plains. Eastern and Western districts are also different but Uttar Pradesh remains a homogeneous region in administrative terms. Thus, a homogeneous economic region can have differing physical characteristics. Homogeneous region on economic or political criterion may have a lot of heterogeneity from several other standpoints.

A region being a collectivity of people is a sociological phenomenon and thus a region goes parallel to the concept of community also. A homogeneous region is therefore a homogeneous problem-bound entity.

2. Polarized / Nodal / Heterogeneous /Functional Regions

Polarized or nodal regions look to a centre-a large town usually-for service. Its influence extends beyond the area of the city. The villages are dependent upon it for services and marketing. There is little concern for uniformity when a polarized or nodal region is taken. Cohesiveness is due to internal flows, contacts and interdependencies. The city region need not correspond to the administrative region because hinterland of several clear-cut regions may be served by a city. (For example even the persons of Gwalior may visit Delhi for buying some consumer durables of high value. A capital city may attract customers from several districts around the capital city.)

A nodal region will have heterogeneous economy around it. Regional economists are more concerned with what happens within a nodal region and spatial dimension of the nodal region assumes importance. Population and industries agglomerate and there are core regions with higher per capita income generation through higher production of goods and services. Within regions there are dominant cities or nodes to which flows of inputs, goods, people and traffic gravitate. Within the cities there are nuclei that form business and social centres and which are discernible at a glance from an intra-metropolitan traffic-flow density map. (Richardson). If the 'size of the mass' of the nodes is large, then there will be great pull effects of the centre. However, as the distance increases, the costs of overcoming frictions will rise and the people of different areas will look for a different nodal point. Each region will have one or more dominant nodes and it will be interesting to find and record as to which interior areas form the areas of influence of one or the other node.

Nodal regions provide an understanding of the functional relationship between settlements, which fill up the space. Big, medium, small and tiny settlements dot the space and because of their intra-regional differentiation, flows emanate. These heterogeneous units in rural and urban areas are functionally related because each settlement cannot have all the functions and facilities.

All functions require a particular threshold population and other facilities (each settlement cannot have a college; or, unless there is electricity there cannot be cinema hall; or a bank branch will require not only critical minimum deposit-credit ratio). The size of the settlement and the hierarchy of functions are mutually determining. Lower and higher order functions can naturally be found in the same order hierarchy of the settlements. Thus between hamlets and metropolitan cities there are lower and higher order functions in all types of services (from one-man post office to head post office; from primary school to Institutions of higher learning and so on). Since not all settlements can afford to sustain all types of functions, they depend upon other settlements / areas for meeting their needs of services and goods and thus functional linkages develop. Markets of various orders exist. Nothing can be bought unless something is sold and thus all exchanges are ultimately barter, unless supported by grants, donations and subsidies. Functional linkages are revealed by the flows of men, materials and money. Such linkages result in the emergence of the dominant nodes-focal points, which attract and provide all types of flows. In a hierarchy of settlement we find several nodal points which receive and provide flows and functions. Each node has some settlements to support and receive and provide flows and functions. Each node has some settlements to support and receive sustenance e.g., a city receives its food items from the villages; while the villages receive goods of the secondary sector from the urban nodes.

(Nodal points are always urban centres). Thus a nodal region is composed of heterogeneous units which are closely inter related with each other functionally. Functional linkages give unity to nodal region and a certain amount of functional coherence/utility/ interdependence is always present.

Nodes attract labour while the hinterland becomes the labour catchment area if the hinterland cannot provide jobs to the people. In some respects the boundary of a nodal region may extend far and beyond for some facility e.g. Bombay attracts persons from distant places in Uttar Pradesh and Bihar because the persons can find employment in Bombay. Similarly even the rural areas of Punjab attract labour from Chhatisgarh region of Madhya Pradesh or from Eastern Uttar Pradesh or Bihar because highly paying (comparatively speaking) employment can be found in Punjab during agricultural operations.

All functional linkages keep in changing in nature and volume. While economic activities are scattered in a homogeneous region, they are concentrated in or around specific foci of activities. Inter dependence is a rule in heterogeneous region and thus nodal region is Heterogeneous region. The demand and supply conditions at different points / settlement in the heterogeneous region differ and that is the reason for interdependence. Around a node (a focal point in space) revolve not only economic but political and cultural activities also. Yet, it can be said that all activities become weak with the distance and ultimately terminate also. The forces of distance weaken the linkages of all types, unless it is the linkage of all areas of the country with capital of the nation. The size of a nodal region shall depend upon the efficiency of means of communications and transportation and all those facilities, which give rise to localization of industries/activities at a certain place. An improvement in transportation, communications finance, accommodation, and other facilities will widen the radius of influence and the hinterland will get enlarged and the node will get further strengthened.

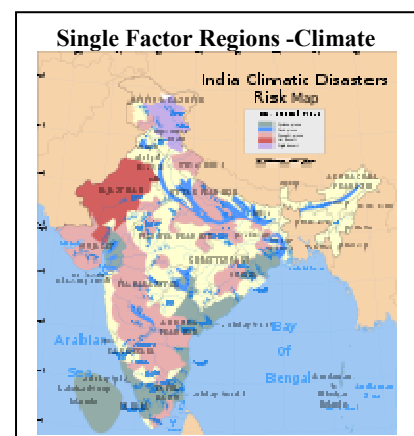
In a sense there is an element of homogeneity in a nodal region! A nodal region is homogeneous in that it combines areas dependent in some trade of functional sense on a specific centre (Meyers). There are a number of possible sets of nodal regions depending on the level of activity one is specifying. (Smaller node for vegetables: bigger node for (automobiles)).

All nodes have their own periphery but different nodes have interdependence with other nodes outside their region.

Formal Regions and Functional Region.

A formal region is homogeneous with reference to some geo-physical characteristic such as topography, climate of vegetation. This is physical formal region.

Later on there was a shift from this narrow approach to a broader approach and economic, social and political criteria were also applied. An industrial or agricultural or plantation region is a formal economic region; or a state governed by a particular party is a formal political region.



As against this, the functional region is concerned with interdependence. This is a geographical area in which there is economic interdependence. The nodal regions are functional regions between which there are flows of men, material and money.

In practice, the formal and functional regions very rarely overlap neatly, and often vary markedly. We have to “carve out” a planning region after compromising the two approaches. That region becomes the planning region (formal or functional) which is administratively viable. All regions are geographical regions because they exist on space and all regions are economic regions because people cannot remain alive without being economically active.

3. Planning Regions

Planning regions depend upon the type of multi-level planning in the country. A very small country will naturally have one level planning. Markedly different geo-physical or agro-climate areas may be chosen as planning region for special cases e.g., developing a mining or plantation or power grid region. A planning region in a multi-level setup requires regional plan, which is a spatial plan for the systematic location of functions and facilities in relation to human settlements so that people may use them to their maximum advantages. Infact more important than reducing the regional disparities is the task of ensuring that backward region and rural areas have basic minimum needs. Planning region for different activities can be different and a regional plan will be locational in character for that activity/function. For comprehensive planning, there has to be a national plan and then a state plan and finally district/block plans. Since a planning region is a sub-national area demarcated for the purpose of translating national objectives into regional programs and policies, and since plan formulation and implementation need administrative machinery, administrative regions are generally accepted as planning regions. This may not be wholly correct, as administrative boundaries may be inconsistent with regional boundaries, derived from economic criteria. However, in some cases a planning region can be small, say a city but a village cannot be (and, probably not even a cluster of villages) a planning region unless the objective is too limited.

The hierarchy of planning region would be (I) national level (ii) macro level (iii) state level (iv) meso level (v) and micro level.

A planning region is (or should be) large enough to enable substantial changes in the distribution of population and employment to take place within its boundaries, yet small enough for its planning problems to be tackled effectively. It should have a viable resource base, a manpower base, and internal homogeneity/cohesiveness. It should be such that satisfactory levels of mutually satisfying levels of production, exchange, and consumption levels obtained.

Boudeville defines a planning region in the following words **“It is an area displaying some coherence or unit of economic decisions”**.

Klassen defines it as follows- **A planning region must be large enough to take investment decisions of an economic size, must be able to apply its own industry with the necessary labor, should have a homogeneous economic structure, contain at least one growth point and have a common approach to and awareness of its**

problems. In short, a planning region should be defined according to the purpose of one's analysis.

Ideally a planning region should have adequate resources to establish a satisfactory pattern of savings, capital formation, investment, production, employment, income generation and consumption pattern. It means that the area should be economically viable. This usually is not the case. The States of East India are rich in natural resources and logistics/infrastructure support. Unless the aid comes from the centre, these states cannot be viable states as planning regions. As the things stand at present, these states are not capable of being self-sufficient at higher levels of economic activity and are not able even to grow at a reasonable growth rate of income, comparable to some of the developed states of the country. Thus planning regions are spatial units of different sizes, (city, block, district or state) depending upon the objectives in view and the problems to be tackled. In rare cases only, a planning region extends beyond a state.

Types of Regions – Multi-Level Planning Perspective

Macro Regions

Macro region is naturally bigger. Macro region can be a state or even a group of states, if the states of a country are not big enough. A Macro-major region can be a zone in a country, which may comprise of a few States. For example, in India there are East, West, North, South and Central Zones and 'Zonal Councils' of which function is mutual consultation, developing cooperation and mutual counseling.

In a sense macro regions are second in hierarchy, next to the national level. It is also possible that a physical macro region may comprise parts of different states of a country for project planning purposes. (e.g., big river valley projects, an electric grid of different states, and, for the purpose of a particular activity (facility) planning) the macro region will be parts of different states. State boundaries are not respected in the sense that the macro region may transcend or cut-across administrative boundaries of the states of a country. A macro region may not be uniform or homogeneous in all respects. It may have homogeneity in one respect (physical complementarity) and may have heterogeneity in other respect (administrative boundaries). A macro region should have a common resource base and specialization in that resource base, so that production activities can develop on the principle of comparative advantage based on territorial division of labor. (India has been divided into 11 to 20 macro regions-agro-climate or resource regions). The planning Commission of India would have just 5 zonal councils-Eastern, Northern, Central, Western and Southern comprising of certain states but beyond this there is no macro-regionalization in India.

These so-called macro regions of India have to have inter state cooperation in the matter of utilization of river water and electricity grids etc.

Meso Regions

Meso region can be identified with a 'division' of a state. Chattisgarh Region, Bundelkhand Region, Baghelkhand Region, Mahakoshal region is usually a sub-division of a state, comprising of several districts. There should be some identifiable affinity in the area which may even facilitate planning. It can be cultural or administrative region and it will be even better if it is a homogeneous physical region

(resource) region. A meso region can also become a nodal region provided the combined micro regions or parts thereof can be developed in a complementary manner. (NSS of India has identified 58 meso regions of India but they are not shown on maps as planning regions).

Micro Regions

In multi-level planning, district is the micro region. It becomes the lowest territorial unit of planning in the hierarchy of planning regions. The most important reason why district is the most viable micro region for planning is the existence of database and compact administration. This is the area, which is viable for plan formulation with administration for plan implementation and monitoring.

A metropolitan area can be one micro region and the area of influence can be another micro region. A nodal point is also a micro region, though in many cases micro regions are basically rural areas, which may have a number of minor nodes without any organizational hierarchy influencing the entire area. The basic characteristic of a micro region is its smallness. There can be some specific micro regions such as belts of extraction of mineral or a reclaimed area, or a not-so-big command area of an irrigational project.

Micro – Minor Region:

This is the region which is associated with, what is called, the grass-root planning. A micro-minor region can be a block for which also data exists now and for which there may be a plan. (So far as the quality of data is concerned, there is hardly any activity, or sector, or region or field for which data is not cooked by the vested interest groups: but, that is another story).

The block level plan is integrated with the national plan, through the district and state level plans. A block level plan is not surgically cut portion of the district plan, which has its own logic and linkage.

At block level, most of the officers will be more concerned with the implementation of the plans than formulating the plans. At block level, the main exercise will be to take into account of the physical and human resources and to find out the prime moving activities which will enable the block people to make best use of the development potential of the block to meet the basic needs of the people.

Minimum needs can be satisfied with the production of basic goods with the help of low entropy local resources. Yet it cannot be said that 'external help' will not be necessary. Infrastructure support has to come from the developed regions. Infact, planning of the development of the transport, communication, banking, education, medical and many service facilities has got to be done at the national level.

At the panchayat level, basic goods and services can be arranged through the efforts of the local people. Many activities can be so planned that they improve the socio-economic conditions of the people without being the part of the national plan. Several activities can be undertaken with the cooperation of the local people, with minimum of financial and real resource support from outside e.g., development of dairying, animal husbandry, pisciculture, poultry, soil conservation measures, optimization of the cropping pattern,

production of inputs locally, improving the storage and transport facilities can be done at the micro minor level. Many agro-based industries and tiny sector guild-type activities can be developed at the micro-minor level. A good planning can secure '**ruralization of the industries**' instead of '**industrialization of rural area**'. This will involve production of goods '**by the masses for the masses and near the masses**'.

The most important test of micro-minor planning is that the people need not look towards the centre for it. Now days, a lot of importance is given to 'water harvesting'. Water is proxy for the use of modern inputs in agriculture. Much of the run-off water goes waste and the infiltration rate is also low. If this water can be harvested, not only the run-off water can be stored, but sub-soil water reserves can also become rich. Micro-minor watershed development program probably will be the most important program for a country like India. The optimum land use planning can start from the micro-minor area only.

Types of Regions on the basis of stages of economic development

Developed / Development Regions

Developed regions are naturally those which are having a high rate of accretion in goods and services i.e., their share in the GDP of the country is relatively higher. This may be with or without rich natural resources by most certainly because of the use of upgraded technology by highly skilled and motivated persons. The locus of infrastructure facilities in abundance will put a region in the state of "nothing succeeds like success" and the region may continue to forge ahead of the backward regions at a higher rate.

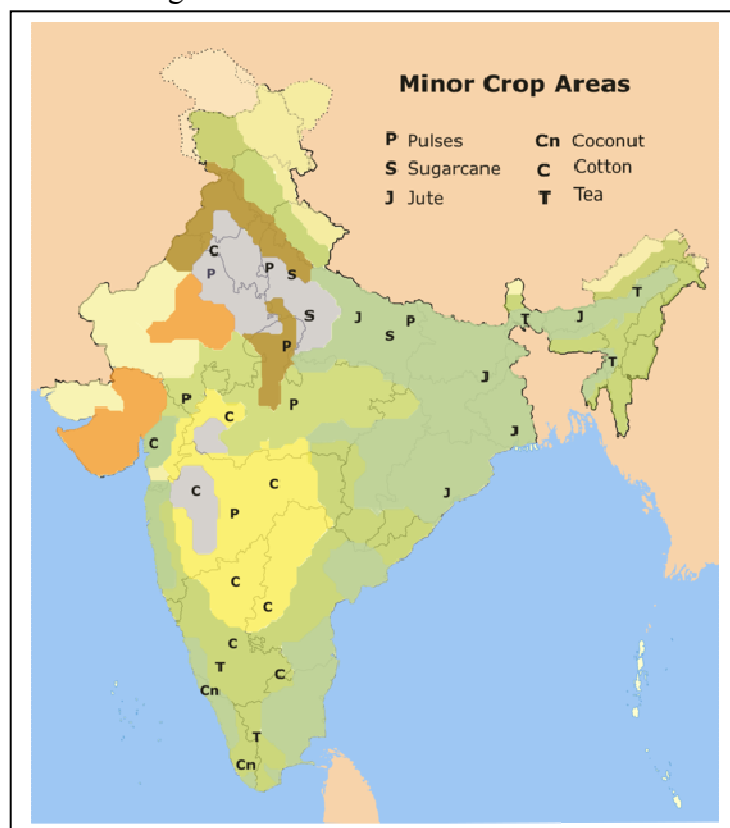
A developed region may become '**overdeveloped**' in certain respects e.g., it may suffer from the **diseconomies of congestion** and the Perroux's '**growth pole**' becomes over-critical here. Infrastructure costs become very high and people can go into the jitters due to pollution and stresses of various types.

A developed region is the counterpart of the backward region: the 'positive' side is emphasized in case of the developed region while 'negative' aspects are emphasized in case of the backward region. A developed region is one, which has exploited its potentialities fully, which has removed the bottlenecks and speed breakers of development. Developed regions emerge of their own because of the comparative advantage or may emerge as a result of the diversion of funds by the government. In many cases imbalances emerge between developed and backward regions and these imbalances can be the creation of planners also. Many times disproportionately high amounts of investment are made in the constituencies of the influential politicians and some regions become far more developed than the neighboring regions. In a resource short economy such a development may be at the cost of denying legitimate share of investment to some other regions. Those regions where quick maximization is possible i.e., high outputs are obtained with relatively lower levels of inputs, get further attention and become even more developed.

Backward Regions

There can be '**backward or depressed**' regions in the developing as well as the developed economies. Backward economies are thoroughly depressed regions.

Regions, in which the economy is largely subsistence one, have in the most co-existed with the modern sector regions since long. There is development even in these regions but these regions have not come out of the low level equilibrium trap. There can be



region, which may not be at subsistence level but may be relatively backward. Lack of infrastructure facilities, adverse geo-climate conditions, low investment rate, high rate of growth of population, and low levels of urbanization and industrialization are causes and consequences of backwardness. In less developed countries, even the most ancient occupation (agriculture) is backward and unless it is made progressive with massive real and financial input support, the region cannot come out of backwardness. It will be imperative that for the overall development of the backward regions, those industries

should be developed on priority basis which supply vital inputs to agriculture as also those industries which take outputs of agriculture as their inputs. Thus, depressed regions can be very poor under-developed regions, which failed to modernize.

Some **vestigial regions** (as the regions inhabited by the red Indians in USA/ or tribals in India) can remain backward and may even remain near the subsistence level. The inhibitions may have ancient traditions and may be smug in their surroundings, but the per capita income may be much lower than in the neighboring regions. A region can be backward because of the high population density or even without it. If we take some selected indicators of development (e.g. road length per sq.km, literacy rate, beds per thousand population, percentage of villages electrified, percentage of cultivated land under irrigation, longevity, and availability of low, intermediate and high order functions and facilities) a low total will suggest backwardness.

Depressed regions have rudimentary type of industrial activity; major centres of industrial and economic activity are not in the region and/or are at a distance from the region. Compared to the developed regions, wide chasms exist in most of the economic activities leading to wide differentials in the per capita income and intensity of productive and well paying employment.

Neutral Regions/ Intermediate regions

New towns and satellite belts are designated as 'neutral' regions and they promise good prospects of further development because here further employment generation and income propagation is possible without congestion. Such regions can be demarcated around urban centers.

Intermediate regions are those regions, which are '**islands of development around a sea of stagnation**'. Some metropolitan regions are surrounded by areas of utter penury. It should be the task of the planners to develop linkage activities that the hinterland of such intermediate regions also develops.

Types of Regions based on the activity status analysis

Mineral regions

Many mineral regions promise high growth rates for the region as well as for the prosperity of the country, unless the region suffers from '**Bihar Syndrome**'. If mineral-based industries can be developed in the region itself, then industrial development will be less costly because much of the load shedding will be done in the region at low cost. The iron ore deposits of Bailadeela (Bastar District of Madhya Pradesh) are exported abroad: if, however, a plant could be established near the ore deposits, it would have brought tremendous development for the region.

As the mines continue to yield sufficient minerals and the costs are also not prohibitive, not only the mineral-producing region develops but it helps other regions also to develop. After the minerals exhaust, the region will bear degraded look; people will move away to other areas and the erstwhile area will bear a deserted look. Germany took great pains to rehabilitate such areas and vast pits and trenches were suitably reclaimed for various purposes like water storage, eco-forestry and even cultivation after enriching the soil. If new deposits of minerals cannot be discovered, there can be several ways of reclaiming wasteland and developing non-mineral based activities. Regional planning will require a long-term plan for developing such regions after extraction is no longer a profitable activity. The Middle East countries have made adequate planning to diversify their economies so that after the oil wealth exhausts their economies do not relapse to backwardness.

Manufacturing Regions and Congested Regions

Some regions become big manufacturing regions not because they have natural resources but because of the infrastructure development, momentum of an early start, continued government support etc. Autonomous, imitative, supplementary, complementary, induced and speculative investments keep in giving strength to the manufacturing regions. It would be prudent not to develop narrow manufacturing base, otherwise territorial specialization can become a problem if the crop supplying the raw materials fails or if the minerals which are base for the industries, exhaust. In such regions the internal and external economies are available in ever-greater measure and such regions keep on developing. **When all the thresholds are crossed, such regions become too congested and the diseconomies overwhelm the economies of production** - High density, increasing pollution, reduction in the quality of life result.

Cultural Regions.

A cultural region can also be quite well demarcated. (French Canada and English Canada are such regions). In India various states are demarcated on the basis of language and culture primarily. There are affinities of cultural origin in such region. A rich cultured region should be rich in economic terms also.

Regionalization

Meaning of Regionalization

Regionalization is the process of delineating regions, but each time depending upon the purpose for which the region is to be delineated. If the intention is to develop an arid region, the 'region' will be differently defined, including only arid areas. If the congestion is to be removed then the most congested and polluted areas will be included in the 'congested region'. If the intention is substantially reduce poverty and unemployment, then a 'depressed region' is to be delineated. The homogeneity of a region will differ with the purpose for which delineation is being made.

According to Groenman, "Regionalization deals with the differentiation of political measures in space". If the physical region, having homogeneity, is an administrative region also, then all tasks of regional and national planning can be facilitated.

Geographers were always interested in the process of regionalization and were very fond of pictorial characterization rather than scientific explanation. (Pokshishevsky). Geographers believed that there is some sort of determinism in economic development. USSR geographers even coined the word **fortunatov** for a region well endowed with resources.

They probably meant that what is physically impossible, money cannot make it possible. However, 'deterministic' situations are not too many and the man and his brain-child-technology –can bring a lot of changes. The neo-determinism underlies the fact that as the techno-economic conditions change, the 'degree determinism' also undergoes a change to be near the reality, we need adjustments by stages. Infact both 'determinism' and possibilism' are facts of life.

Techniques of Region Delimitation

Delineation of Regions

Identification / Classification of Regions

Identification of formal regions:

Formal regions are localities possessing homogeneity. The criteria, which we use, may relate to

Geography – soil, rainfall, climate

Economic – per capita income, no. of industries

Socio-cultural – language, political affiliation etc

Problems arise when we use multiple criteria. When we are using composite criteria we have to assign weights

Methods of regional delimitation:

1) Fixed index method

2) Variable index method

3) Cluster method is used to assign weights

Fixed Index Method:

Under the fixed index method, a number of characteristics common to regions are chosen. (E.g. population, density, per capita income, unemployment, rate of industrialization) An arbitrary weight is given to each index and a single weighted mean is obtained for each region, then contiguous regions with similar indices are grouped together in order to minimize the variance within the group.

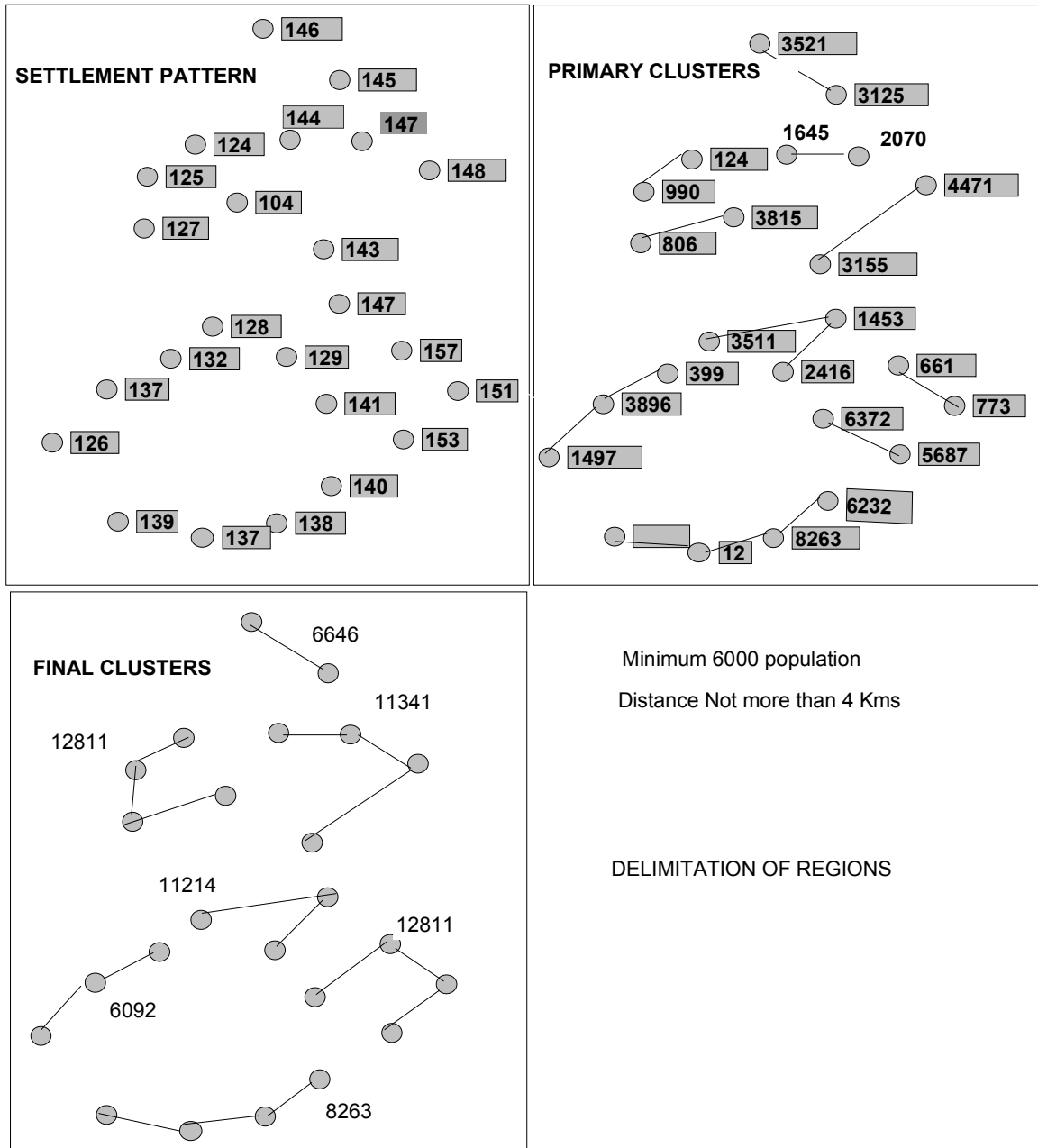
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Population of Regions

- | | | |
|---------|---------|---------|
| a) 3800 | h) 3200 | o) 300 |
| b) 600 | I) 2600 | p) 1600 |
| c) 1800 | j) 2100 | q) 4100 |
| d) 2300 | k) 1500 | r) 3300 |
| e) 4600 | l) 2000 | s) 1100 |
| f) 950 | m) 3100 | t) 1229 |
| g) 756 | n) 4600 | |

@@ = 3000-4000 #### = <1000 \$\$\$\$ = 1000-2000 %% = 2000-3000 **** = >4000
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The Variable Index Method

Under the variable index method, variable weights are assigned to highlight the different regions. The weight given to each activity, in each region is different, in accordance with the value or the volume regionally produced.

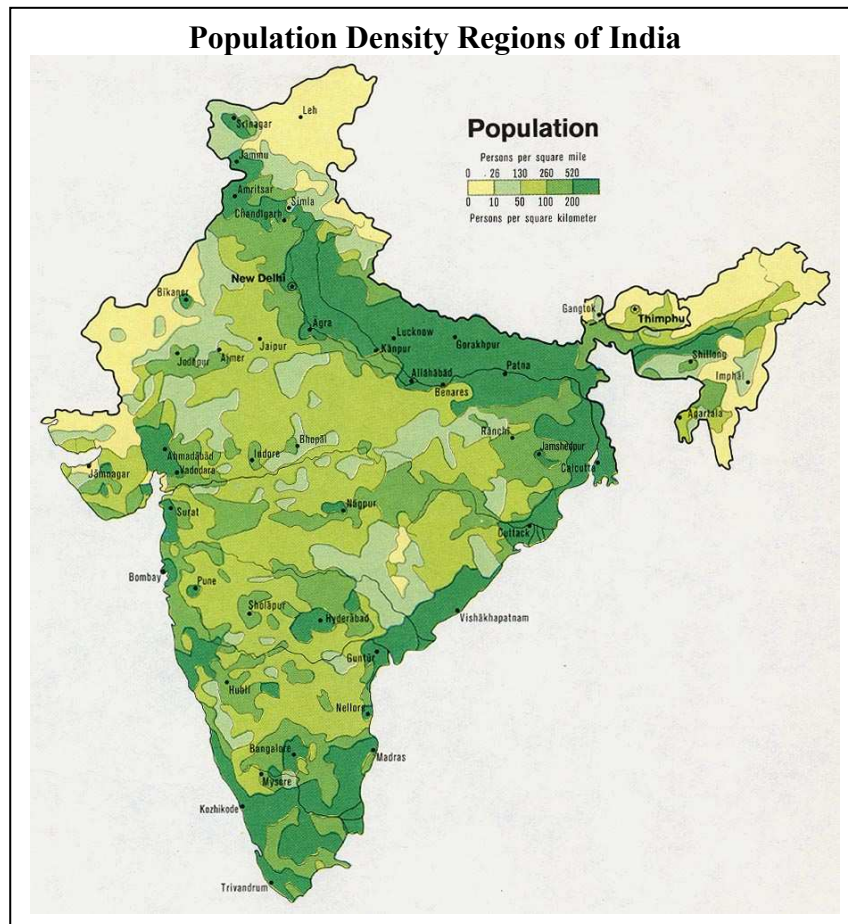
For e.g., if region A is the wheat region and the region B is the coal region, the weight of the wheat index will be the largest in the former, and the weight of the coal index will be the largest in the latter. This method is good when those criteria can be compared with each other. However in those cases where compatibility is not possible (e.g., in case where one feature is literacy and the other is steel production) it becomes necessary to employ the cluster method

The Cluster Method:

Cluster means grouping together. This concept is used to implement IRDP. This concept is used in the planning as a strategy to strengthen lateral links and to dissipate growing vertical links in the settlement system. Such a cluster while providing greater viability and threshold for development efforts will also create for themselves a greater bargaining power in bringing about reciprocity in exchange of goods and services.

Both at the macro and micro level clustering can be done by

- (1) superimposing of maps and
- (2) by developing a composite index of development



Delineation of Regions in India

Physiographic Regions



Attempts of Regionalization

1. The first attempt in classify natural regions or physiographic regions was made by **L. Dudley Stamp (1922)**

3 Major Natural Regions
22 Sub Regions
structure & } scheme based on the homogeneity of physiography,
climate

2. **JNL Baker** made second attempt (1928). It was similar to Stamp's

3. **Spate** (1957 & 1967) made another attempt based on Stamp's & Baker's work

3 Macro Regions {
The Mountain Rim
Indo Gangetic Plains
Peninsula

34 Regions of first order
74 Region of Second order
225 Subdivisions

4. **SP Chatterjee (1965)** scheme of classification is considered as a standard one and it is frequently quoted by others.

The Great Mountain Wall	Western Himalayas	Kashmir Himalayas Punjab Kumaan Himalayas
	Eastern Himalayas	Darjeeling Sikkim, Assam Himalayas Eastern Bodar Hills & Plateau
The Great Plain Sutlaj, Beas, Ravi Ganga, Upper Ganga Yamuna, BrahmaPutra	North Western	North Punjab, South Punjab, Rajasthan
	Upper Ganga	Ganga Yamuna, Rohilkhand, Avadh
	Middle Ganga Delta	
	Assam Valley	
The Great Plateau of Peninsular India	North Western Peninsular India	Aravalli Hills, Chambal Basin Bundelkhand upland, Malwa Vindhyan Scrap land
	North Eastern Peninsular Plateau	Baaghelkhand, Chattisgarh Basin Bastar Plateau, Orissa Hills, Chotnagpur Hills
	Maharastra	Western Ghats, Lava Plateau, Western Ganga Valley
	Karnataka Plateau	Malnad region, Maiden region
	Tamilnadu Plateau	
	Andhra Plateau	
Coastal Plains	West Coast	Kutch Peninsular, Kathiawar Peninsular, Gujarat Plains, Konkan Coast, Karnatic Malabur Coast
	East Coast	Tamilnadu Coast, Andhra Coast, Orissa Coast
The Island	Laccadive, Minicoy & Amindiv, Andaman & Nicobar Islands	

Economic Regionalization

Regionalization is an exercise of dividing regions of higher order into sub-regions or aggregating regions of lower order (small units) into those of higher order (regions). This is based on homogeneity in the selected characteristics or functional interdependence between the nodal centre and its hinterland or between the different functional centers of different hierarchic levels.

Application

1. Regionalization for Planning – A strategy for areal development.
2. Nodal Regionalization to create central places and functional intergration

Author	Title	Criteria used	No. Of regions
1. V. Nath	Resource development regions & divisions of india	Soil climate topography land use	15 regions
2. Bhat & Rao	Regional planning for india	Distribution of natural resources	11 regions
3. Sen Gupta & Galina dasyuk	Population resource regions	Population density, growth rate, resource potentiality, levels of socio-economic disparity	3 regions dynamic, prospective, problematic

4. K.I. Vij & Chandra	Energy resource regionalization	Energy & power	8 regions
5. Sri. Hasim	Inter regional linkages & economic regionalisation	Movement of 61 commodities	6 macro regions
6. Gidabhuly & Bhat	Economic regionalisation	Movement of 5 selected commodities	
7. Chandrasekara	Regional development & planning regions	Land & raw materials for industrial development	
8. Sengupta		Homogeneity, nodality, production specialization, energy resources	

Economic Regionalization in India.

Delineation of natural or physiographic regions helps us to understand the basic geography of the country. It describes the existing situation only. But, for the purpose of planning it is necessary to study the natural resources of regions in detail and also to find out areas of potential development and to trace inter linkages among them (and within them) in such a fashion as to promote maximum development of resources.

By combining physio geographical, economic and socio-cultural variables we can have different homogeneous regions.

Following classifications are frequently quoted in the books

- 1) The regionalization scheme proposed by V.Nath
- 2) The regionalization scheme proposed by Bhat & Rao
- 3) The regionalization scheme proposed by Sen Gupta & Galina Sdasyak
- 4) The regionalization scheme proposed by S.R. Hashim
- 5) The regionalization scheme proposed by Gidadhubly & Bhat
- 6) The regionalization scheme proposed by Sen Gupta
- 7) The regionalization scheme proposed by Town & Country Planning Organization.

1) The Scheme Proposed by V. Nath (1964)

Title: Resource Development Regions and Divisions of India

Objectives:

- 1) Providing a framework about the physical conditions & resource potential to planners both at the central & state level.
- 2) Based on such identification helping the planners in planning the programmes, adjustments in programmes, content & pattern.
- 3) Furnishing a scheme of homogeneous units within the state.

Variables Used: Physical – topography, soils, Geologic Formation and climate – Agricultural- Land use & cropping pattern.

This study based on the earlier studies

1. Census 1951
2. Spate scheme
3. Indian Statistical Institute

Nath classified the country into 15 Resource Development Regions (RDRs). It is further classified into 61 RDRs.

- | | |
|------------------------------------|-------------------------------------|
| 1. Western Himalayas | 2. Eastern Himalayas |
| 3. Lower Gangetic plain | 3. Middle Gangetic Plain |
| 4. Upper Gangetic plain | 5. Trans Gangetic plane |
| 6. Eastern plateaus & Hill regions | 7. Central plateaus & Hill regions |
| 8. Western plateaus & Hill regions | 9. Southern plateaus & Hill regions |
| 10. East coast plains & Hills | 11. West coast plains & Hills |
| 12. Gujarat plains & Hills | 14. Western Dry regions |
| 15. The Islands | |

2) The Scheme of Bhat & Rao

Title: Regional planning in India.

Variables Used:

Distribution pattern of natural resources as represented in the maps and agricultural land use pattern on the basis of district wise data.

Methodology:

Major regions should have minimum disparities within and distinctiveness from their neighbours in respect of regional character and resources for development. While the regional development norm is common for the major region as a whole, sub - regions are identified depending upon the concentration of resources, problems for development and administrative convenience.

Scheme: 11 Major Regions 51 Sub regions.

- | | |
|----------------------|--------------------------|
| 1. West Coast Region | 2. Western Ghats |
| 3. Central Plateau | 4. Eastern Ghats |
| 5. East West | 6. North Eastern Plateau |
| 7. The Ganges Plain | 8. Assam |
| 9. Gujarat | 10. Rajasthan |
| 11. Kashmir | |

Bhat has made another attempt to classify our country based on the presence of power and metallurgical base.

Macro Economic Regions

1. Southern Region
2. Western Region
3. North Western Region
4. North Central Region
5. Eastern Region

Group of States

1. Karnataka, Tamilnadu, A.P, Kerala
2. Maharashtra, Gujarat
3. Punjab, Haryana, Rajasthan, J & K
4. Uttar Pradesh & Madhya Pradesh
5. Bihar, Orissa, West Bengal, Assam, Nagaland, Arunachal Pradesh, Manipur, Tripura etc.

3. The Scheme proposed by P. Sen Gupta & Galina Sdasyuk

Title: Population Resource Regions

Objective:

To understand the population characteristics in terms of territorial units like states, districts and thereby to assess the latent capacity of the country in supporting population.

Variables Used

Population (Density and growth rate), resource potentiality, and levels of socio-economic development.

Scheme: Three major regions and 19 sub regions.

1	Dynamic regions	1. Parts of W.B, 2. Gujarat, 3. Maharashtra, 4. Tamilnadu 5. Punjab	The Dynamic Regions supports advanced industrial areas and predominantly urban population.
2	Prospective regions	1. Northern Eastern Peninsula 2. Godavari Basin, 3. Aravalli Hills & Malwa Plateau. 5. Brahma Putra Valley	The Prospective Regions have immense resource potential but face socio – economic obstacles to technological transformation.
3	Problem regions	1. Parts of Bihar & U.P 2. Orissa Coast, 3. Kerala Coast 4. Laccadive Islands, 5. Konkan Coast in Maharashtra & Karnataka, 6. Rajasthan Desert 7. North Western Himalayas 8. East Himalayas, 9. Andaman Islands	The Problem Regions are those which show little promise of development in the near future

4. The Scheme proposed by K. L. Vij & C. K. Chandran

Title: Energy Resource Regionalization.

Methodology:

This scheme based on energy and power resources because those resources will play a dominant role in determining the distribution of industrial activities.

Scheme: Eight Macro regions.

5. The Scheme proposed by S.R. Hashim

Title: Inter-Regional Linkages & Economic Regionalization.

Variables Used: Movement of 61 commodities based on Inland (Rail & River borne) trade accounts.

Scheme: Six Macro regions

- 1) Assam, Manipur, Tripura, Nagaland.
- 2) West Bengal, Bihar, Orissa and Calcutta.
- 3) Uttar Pradesh
- 4) Punjab, Haryana, Himachal Pradesh, Delhi, Rajasthan, Jammu & Kashmir.
- 5) Gujarat, Maharashtra, Bombay.
- 6) Goa, Karnataka, Kerala, Tamilnadu, Andhra Pradesh

6. The Study of Gidadhuby and Bhat

Objectives: To analyze the inter and intra regional relationship.

Variables Used: Movement of five selected commodities i.e., Sugar, Cotton, Textiles, Cement, Coal, Iron and Steel.

7. The Scheme Proposed by Sen Gupta

Variables used & Methodology:

Keeping the natural regions of the country as a base and considerations of homogeneity, nodality, production, specialization, energy resources utilization etc in view and accepting the state boundaries, Sen Gupta suggested that within a frame work of meso regions that resource development of macro can regions take place.

Macro and Meso Regions of India – Sen Gupta’s Classification

Macro Region	Meso Region
North – Eastern Region (Assam, Manipur, NEFA Nagaland & Tiripura)	1. Upper Brahmaputra Valley, 2. Lower Brahmaputra Valley, 3. Mineralized Plateau, 4. Eastern and Northern Hills
Eastern region (West Bengal Bihar and Orissa)	1. Calcutta- Hoogly region, 2.Damodar Valley area, 3. Chotanagpur and Northern Orissa Plateau, 4. Southern Hills and Plateaus of Orissa, 5. Lower Ganga Plain, Deltas and Coastal plain 6. Darjeeling Hills and Sub mountain tracts (duara)
North Central Region (Uttar Pradesh)	1. Northern Himalayan Area, 2 West Ganga Plain, 3. Eastern Ganga Plain
Central Region (Madhya Pradesh)	1. Eastern Madhya Pradesh, 2. Western Madhya Pradesh, 3. Bastar area, Central Madhya Pradesh.
North Western Region (Rajasthan, Punjab, Haryana, Jammu & Kashmir and Himachal Pradesh)	1. Punjab Plain, 2. The Union territory of Delhi, 3. Western Rajasthan, 4.Eastern Rajasthan, 5. Himalayan Hills including Dun area, 6. Kashmir valley and its surrounding hills.
Western Region (Maharashtra Gujarat, Dadra and Nagar Haveli, Daman and Diu)	1. Bombay city and its sub-urban area, 2. Interventions area along the railway between Bombay and Nagpur, 3. Coastal part of Maharashtra, 4. Western Maharashtra mainly plateau area, 5. Eastern Maharashtra 5.Central Maharashtra, 7. Gujarat plain, 7.Sourashtra, 8. Kutch
Southern Region (Andhra Pradesh Mysore, Tamilnadu, Kerala, Pondicherry, Yanam, Goa, Andaman & Nicobar and Laccadive, Minicoy and Amindivi	1. Coastal Plain of Andhra Pradesh, 2.Telengana area, 3. Rayalaseema Area, 4.South Central Industrial Area, 5. South – Eastern Coast, 6. Aanaimalai, Cardamom and Nilgiri Hills,& WesternCoast,7. Malnad and WesternGhat, area, 8. Maidan area, 9. Coral Islands.
Macro Regions = 7	Meso Regions = 4 + 6 + 3 + 4 + 6 + 9 +10 = 42

8.The Scheme Proposed by the Town & Country Planning Organization

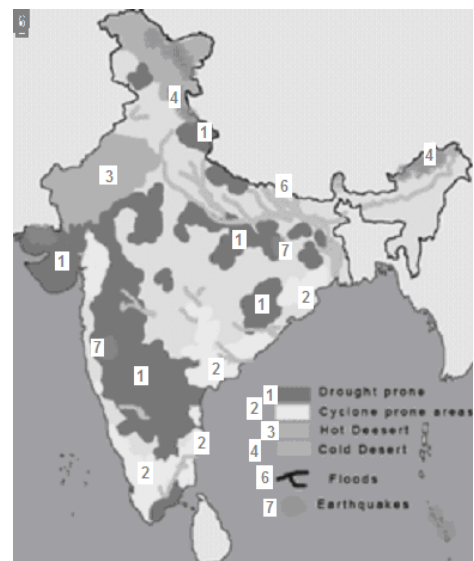
C.S. Chandrasekhara’s Scheme.

Title: Balanced Regional Development and planning regions

Variables & Methodology Used:

1) Land, 2) Raw materials for industrial development, 3) Power. These factors will enable each planning region to achieve a degree pf self-sufficiency in food, an employment potential in the agricultural and non agricultural sectors to meet.the needs of the region’s population and a power base which will serve the developmental needs of both agriculture and industry.

Scheme: 13 Macro regions divided into 35 Meso regions.



- 1) South Peninsula, 2) Central Peninsula, 3) Western Peninsula, 4) Central Deccan,
5) Eastern Peninsula, 6) Gujarat, 7) Western Rajasthan, 8) Aravalli Region,
9) Jammu & Kashmir, 10) Indo Gangetic Plain, 11) Ganga Yamuna Plains,
12) Lower Ganga Plains, 13) North Eastern Region.

