Regional Planning & Development

Part III of VI Parts

Part III.

Regional Imbalances & Strategies for Balanced Regional Development in 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.

I dedicate these resources on Regional Planning to Kundrakudi Adigalar, the great sage of Tamilnadu, for his untiring efforts to promote Micro Level Planning, 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"**

Strategies for Balanced Regional Development

Regional Imbalance

Most of the countries of the world are faced with the problem of regional imbalances and regional inequalities. But it assumes a more acute and explosive form in the developing countries. The problem is assumed such a magnitude that their very political and economic stability is threatened. Rivalry and the search for maximal profits (including political advantage) engender the unevenness (disproportionately).
The primary causes of regional imbalance can be located in the region making process itself. i.e. geographic and physiographic characteristics, history and cultural experience. But there are much deeper causes as Lenin discovered, **"The law of unequal economic and political development under capitalism as a universal law characteristic of all stages of capitalist development and embracing all parts of the world capitalist economy".**

1) Whatever may be the causes, if marked differences in economic prosperity of different regions persists overtime, political discontent is bound to emerge sooner or later.
2) The problem becomes further complicated when economic disparities among regions overlap with differences in race, religion, language or culture of the people living in different regions.
3) Regional inequalities exist not only in the form of income or output levels among regions, but also in other forms such as unequal access of the people of different regions to economic and social services, employment opportunities or political power.
    1) eg. **Jharkand, Darjeeling, Rayalaseena, Telangana issues**.
    2) eg. North Eastern Part of our country, Cauvery issue.
    3) eg. Intra regional disparities existing in several states regarding industrial establishment, health services some regions are more represented in the cabinet.

Theoretical explanations

1. Classical Economist's view
2. Marxist view
3. Perrouxian view
4. Myrdal's view
5. Hirschman's view
6. Miscellaneous theories

1. Classical Economist's View:
The Classical economists hardly evince any interest in the spatial dimension of economic development. They believed that factor flows/ market forces would bring equilibrium automatically. They argued that wage and income levels among regions would not last long. They further argued that labor would flow from (migration) low wage region to high wage region, While capital will flow in the reverse direction (i.e., from high wage region to low wage regions). Classicalists view failed, and many economists started questioning the "Self Equilibrating Model" of the classical economists.

Regional disparities Social Service Indicators

Regional disparities
Social Service Indicators

States	Per capita expenditure on health	Per capita expenditure on education	Infant mortality per 1000 live births 1971	Life expectancy at birth 1971	Physical quality of life index
Andhra Pradesh	21.2	36.5	113.69	53.89	20.6
Assam	17.0	38.1	112.22	53.53	22.7
Bihar	12.2	27.7	103.62	54.70	23.4
Gujarat	22.9	47.9	152.20	55.33	24.0
Haryana	28.0	46.4	100	60.00.	52.1
Karnataka	19.9	43.1	100	50.52	37.6
Kerala	28.7	76.5	55.65	61.00	100
Madhya Pradesh	17.2	29.9	151.69	53.89	14.8
Maharashtra	24.2	51.6	97.32	58.72	57.6
Orissa	17.2	37.6	103.30	56.30	35.2
Punjab	30.6	58.8	103.29	61.23	61.6
Rajasthan	25.3	39.1	147.80	60.23	31.4
Tamil Nadu	20.9	45.9	117.20	55.00	36.4
Uttar Pradesh	11.7	27.7	159.26	54.29	5.3
West Bengal	22.0	43.2	100.25	57.26	45.8
All India	20.2	40.1	-------	--------	-------

Regional Disparities Infrastructure Indicators

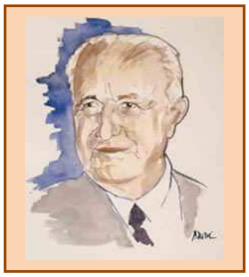
States	Power in kwh	Electrified % in 1980	Road length km	Railway length in km	No. of post offices	Literacy % in 1981	No of hospitals 1000 sq.km
Andhra Pradesh	95	63.4	38	17	31.3	29.9	2.1
Assam	34	20.8	73	28	16.1	------	0.7
Bihar	79	30.5	46	31	15.2	26	1.2
Gujarat	240	64.1	27	29	25.9	43.8	1.0
Haryana	250	100	67	33	19.7	35.8	1.9
Karnataka	153	64.4	55	15	26.6	38.4	1.8
Kerala	104	100	232	23	17.8	69.2	19.5
Madhya Pradesh	99	33.3	23	13	19.0	27.8	0.6
Maharashtra	223	73.8	53	17	18.6	47.4	2.5
Orissa	116	37.3	74	12	27.0	34.1	1.6
Punjab	328	100	90	43	23.6	40.7	2.9
Rajasthan	104	43.3	18	16	28.5	24.1	20.8
Tamil Nadu	181	99.0	130	29	24.9	45.8	2.9
Uttar Pradesh	96	35.7	63	30	16.8	27.4	2.4
West Bengal	113	35.4	158	42	14.2	40.9	3.9
All India	134	45.1	49	18	21.0	36.2	1.6

2. Marxist View:

Regional disparity is the characteristic feature of capitalism and is aggravated by rivalry and competition and the search of maximal profits is the very nature of capitalist relations of production any by the private ownership of the means of production.

3. Perrouxian View:

French Economist Perroux in his attempt to understand the modern process of economic development, discovered that,

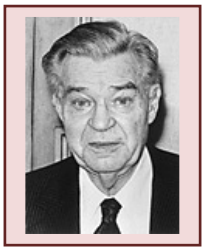


a. Growth does not appear everywhere at the same time.
b. It manifests itself in points or poles of growth with variable intensities.
c. It spreads by different channels and with varying terminal effects for the economy as a whole.

[Perroux heavily relied on Schumpeter's theory of economic development to explain why growth appears in a particular place. A/C to Schumpeter "development occurs as a result of discontinuous spurts in a dynamic world"]

According to Perroux once growth emerges in a particular place, it becomes centre of growing economic activities and in their turn induces growth in the dependent regions. A/C to Perroux the process of economic development is essentially unbalanced, and the centers of growth may give birth to other centers or it may become a centre of stagnation.

Myrdal's View:



The outstanding Swedish Economist Gunnar Myrdal was one of the first among western scholars to pay attention to the grave consequences, not only economic but political as well, which may result from the aggravation of disparities in economic development. In his book, "Economic Theory and Underdeveloped Regions" he presented the "**Cumulative Causation Model".**

According to this model, economic development having started in some advantageous place, continues to develop in that place and the play of market forces normally tends to increase rather than decrease inequalities between regions. Myrdal goes on to argue that once growth starts through historical accident in a locality, "**the ever increasing internal and external economies–(lower average costs of production from and increased rate of output, availability of trained workers, communication facilities, access to larger markets) tends to sustain the continuous growth at the expense of other localities and regions where instead relative stagnation or regression became the pattern".**

To read Gunnar Myrdal's Noble Lecture on 'The Equality Issue in World Development'
http://nobelprize.org/nobel_prizes/economics/laureates/1974/myrdal-lecture.html

Myrdal explains the impact of the growing region (nucleus) on rest of the economy with the help of two opposite kinds of forces, which he calls the **"Spread effect"** and **"Back wash effect".**

"The Spread effect"

"The Spread effect" – refers to all growth inducing effects i.e., inflow of raw materials, new technologies, demand for the agricultural products, If strong enough, these forces may start a cumulative expansionary process in the lagging regions.

"The Backwash effect"

"The Backwash effect" – refers to all adverse effects i.e., withdrawal of skilled labour from underdeveloped regions, capital and goods–all of which rush to the dynamic centre of development.

Due to the accumulation of concentration advantages, the backwash effect predominates. This of course, increases the relve backwardness of underdeveloped regions. Thus Myrdal made a synthesis of various elements involved in the process of regional growth including agglomeration economies, factor flows, social environment, and role of public policy.

Hirschman's View:

Albert Hirschman, an American Economic Professor, explained economic growth process in terms strikingly similar those of Myrdal. Hirschman felt that **" Inter regional inequality of growth is an inevitable concomitant and condition of growth itself"**. Hirschman explained his concept with the help of two terms i.e**.," Trickling–down effect**" and **Polarization effect"**. Trickling down effect (analogous to Myrdal's Spread effect) Polarization effect (analogous to backwash effect).

(Some economists criticized Hirschman's theory of **"economic transmission"** – for having created terminological confusion for the terms already accepted in the scientific language)

The extent of regional imbalances in India.

Problems associated with understanding regional Imbalances.

1) It is a misnomer to use the term **"regional imbalance**" in our country. It is advisable to use the term **'inter-state imbalances'** (states are analogous to regions but they are not regions in the strict academic sense) because information required to understand the spatial imbalances is available collected either at the state level or district level.
2) Even the data collected / information available are not comparable. Data / Information available in our country at their best can indicate the 'broad trends' only.
3) Absence of comparable data / information for all the aerial units (districts).
4) The problem of selecting indicators to highlight the imbalances, for example 'percapita' income is widely used to highlight the disparities in our country. But this indicator suffers from many weaknesses. What are they?

The problem of Comparison

1. Incomparability:

a. Price levels are different in different states.
b. The commodities included in the compilation of price level by different states are different.
c. Weights assigned to different commodities are different in different states.

Because of these reasons per capita income is incomparable

2. At times underdeveloped regions may possess better infrastructure and other preconditions for development compared with developed regions. Using percapita income may conceal other positive aspects.
3. Some parts of our country is still depending on barter exchange (exchange in kind). Economy

Economy is not fully monetized

Regional Plan
1.Concept of Region -
2.Classification and hier

is still not fully monetized. So it is unwise to use percapita income which is calculated based on money exchange.

So on account of all these considerations, percapita income alone cannot be a sufficient indicator of development.

If 'Per Capita Income' is not sufficient, what are the other Indicators?

1) Differences in Industrial Growth
2) Disparities in Agricultural Growth
3) Level of Literacy in different states
4) Percentage of Urban population to total population
5) Percentage of workers in manufacturing industries to total workers
6) Total Road length
7) Infant Mortality rate.

Which indicator to choose { Some value judgement about what is important & unimportant indicator. It depends upon availability of data } Indicator may be important, but data may not be available

Indicator may not be important, but data may be available

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Disparities in Industrial Growth:

Before Independence:

Our Country inherited a lopsided pattern of Industrial development with most of the industries concentrated at a few centers, and in some cases this concentration was not the result of natural advantages but was imposed by historical forces. This disparity is still continuing.

- Cotton industry showed a tendency to disperse that too in a limited sense. The centers of concentration shifted from Bombay to Ahmadabad and to Coimbatore.
- As far as soap industry is concerned Bengal & Bombay shared 86.3% of the workers.
- As far as woolen industry is concerned United Province, Punjab, Bombay shared 80.0% of the total workers employed.

Basis for identification of disparities

1. Productive capital employed, 2.Total no. of workers, 3.Value addition and
4. Gross output.

As per 1950 Information:

- The total share of capital employed was concentrated in West Bengal (24.65 %) and Western Region (34.60%). Western Regions include Bombay State, Kutch, Sourasthra, Goa, Daman, Diu their combined share was 59.25%.
- Both the regions (Western & West Bengal) accounted for 63.03% of the total persons employed.
- Both the regions accounted for 60.41% of the gross ex-factory value of output.
- They accounted for 63.95% of value added by manufacture
- The rest of India (excluding Bengal & Western region) accounted for

40.75% of the productive capital
36.97% of the total persons employed
39.59% of the gross ex factory value of output
36.05% of the value added by manufacture

As per 1960 Information:
(After 15 years of planned development no decline of concentration was noticed.), Maharashtra, West Bengal, Gujarat (combined population was 22.0% of the national population.

These three states accounted for
- 42.2% of the productive capital
- 50.1% of the total number of persons employed
- 53.1% of gross output

If we include Tamilnadu with these three states, the 4 states accounted for (29.3% of the national population)
- 58.8% of the total persons employed
- 61.6% of Gross output

Bihar, U.P. and Orissa accounted for
- 31.1% of the total population
- 21.3% of the productive capital
- 14.5% of the persons employed
- 17.6% of the gross output

As per 1975 information (after 25 years of planning)
Maharashtra, West Bengal, Gujarat and Tamil Nadu accounted for

- 29.81% of the total population
- 47.5% of the total factories
- 42.2% of the total fixed capital
- 53.1% of the total employment
- 57.0% of the total output
- 58.6% of the total value added.

The remaining 17 states (70.19% of the population) shared only 40% of the total output & value added.

Consumption of Electricity:

- Disparities in per capita industrial consumption of electricity. (KWh)

	1969 –70	1976-77
National average	57.5	68.4
Gujarat	88.6	119.8
Karnataka	64.1	107.8
Kerala	57.3	68.1
Maharashtra	114.0	120.4
Orissa	57.6	71.2
Punjab	138.5	143.5
Tamilnadu	74.5	76.8
West Bengal	86.3	78.8

Industrial Licensing Policy and Regional Imbalances:
A policy and a legislation was passed (Industries Regulation & Development Act 1951) with the objectives of

- To regulate industrial investment and production
- Protecting the small entrepreneurs
- To prevent the monopoly and concentration
- To reduce the disparities among regions

The purpose of this policy is to grant more licensees for establishment of industries in the lagging regions and controlling the establishment of more industries in the leading regions by denying licensees to them.

Regional Disparity Based on number of licenses issued.
Out of the 2293 licenses issued during the period 1953 – 1961

- **Bombay, Calcutta, Madras, got 1778 licenses (35.77%)**

- Maharasthra , West Bengal , Gujarat & Tamilnadu (1956-1966) accounted for } 59.31% of the applications, 62.42% of the licenses approved

- **Bihar and Orissa - 6.34% of the licenses approved**

- **Uttar Pradesh & Madhya Pradesh - 9.17% of the licenses approved**

- Out of the total licenses for issued for
  - Maharashtra → 51% gone to 3 districts Bombay, Thana Poona
  - West Bengal → 71% gone to Calcutta, Howrah & Hoogly
  - Tamil Nadu → 59% gone to Madras & Coimbatore.

In 1968 **Pande Working Committee** identified the backward areas of our country. Everyday expected that these areas would get more licenses based on that. What happened?

- The backward areas of relatively more developed states received more licenses.
- Out of the total 486 licenses issued during the period 1970 – 1974, 227 licenses were given to the backward districts located in Maharashtra, West Bengal, Gujarat and Tamilnadu.

The above facts demonstrate that industrial licensing policy has all along favored the already developed states while the claims of the backward states were ignored. Even when recommendations were made to grant more licenses to backward areas, the backward areas of the developed states received a preferential treatment. Even the licenses given to backward areas were not appropriate, since they did not possess sufficient spread effects and significant linkages.

Financial Institution and Regional Imbalances.
The Central financial institutions also favored the backward area of the development states in granting direct assistance on concessional terms.

Average per capita assistance extended by Financial Institutions	Rs. 126.12
Average per capita assistance extended to Tamilnadu	Rs. 188.26

Average per capita assistance extended to Punjab	Rs. 168.40
Average per capita assistance extended to Maharashtra	Rs. 255.54
Average per capita assistance extended to Karnataka	Rs. 163.43
Average per capita assistance extended to Haryana	Rs. 268.39
Average per capita assistance extended to Gujarat	Rs. 316.79
Average per capita assistance extended to Bihar	Rs. 56.41
Average per capita assistance extended to Uttar Pradesh	Rs. 75.22
Average per capita assistance extended to West Bengal	Rs. 98.93
Average per capita assistance extended to Madhya Pradesh	Rs. 65.45

Commercial Banks and Regional Imbalances:

Commercial banks gave a large proportion of their advances to the developed industrial states. A more serious allegation leveled against them is that they worked as channels through which funds from backward states kept flowing to the developed states. This situation has not changed even after the nationalization of banks in 1969.

Other Indicators of Disparities:

The choice of indicators should depend upon the value judgement and the availability of data. The chosen indicators should be relevant, objective and measurable and reflect the multidimensional character of development. Several attempts were made by persons like,

- Ashok Mitra V. Nath Hemalatha Rao Ganguli & Gupta.

Indicators to measure Development & under developemnt

- **Development Index for Agricultural Sector**

Agricultural output per lakh of population / per capita production of food grains.
Agricultural output per worker. Gross area irrigated as percentage of grass area sown.
Yield per hectare. Consumption of fertilizers per 1000 hectares of gross cropped area
Area under commercial crops / Mechanization index.

- **Index for Industrial Development**

Number of factories per lakh of population / 1000 km^2
Percentage of Industrial workers to total workers
High Voltage Industrial power consumption
Percapita gross output / Value addition

- **Index for Banking Development**

Number of banks per lakh of population
Deposits in banks per lakh of population
Percentage of bank offices to bank offices in the country
Percentage of deposits in the total deposits
Percentage of credits in the total deposits

- **Index for Educational Development**

Literacy rate
Percentage of school going children to total population
Percentage of college / university students to total population
Number of schools /Number of colleges per 1000 sq.km
Number of colleges /Number of teachers per lakh of population
Female Literacy rate

- **Index for Infra Structure Development**

Road length in Kms per 100 Sq.Km of area
Number of post, telegraph and telephones per 1000 sq.km
Number of post, telegraph and telephones per lakh population
Percentage of electrified villages to total villages inhabited
Per capita consumption of electricity.

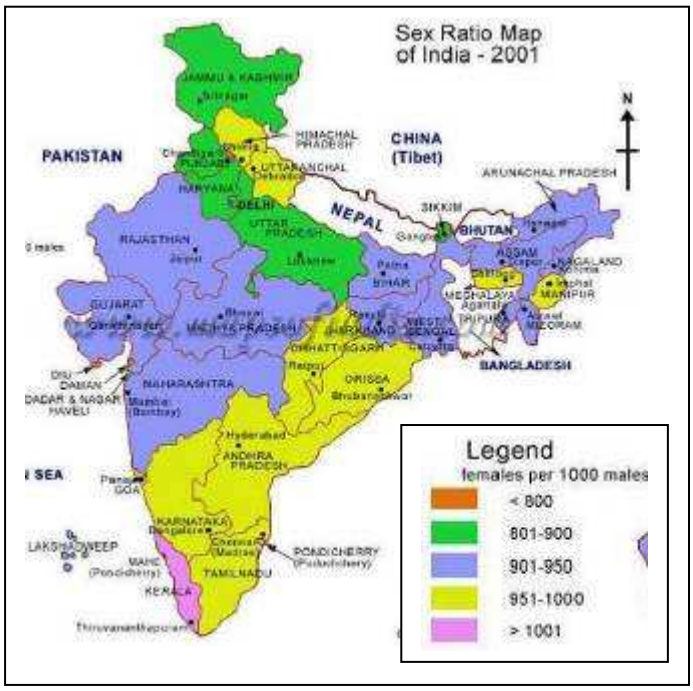
- **Index for Medical Services**

Number of Government / Private medical centers per lakh population
Number of hospitals beds per lakh of population
Number of professionals (Doctors/ Nurses) per lakh population.

New perspective in the regional disparities in development
The Indian view

The problem of regional disparities in development is not taken seriously and inconsistently dealt in the concept of development. **Regional disparities are the manifestation of spatial injustice and should be reduced for attaining the goal of just and egalitarian society**. But, in reality the regional disparities in development are more acute and quite persistent at global, national and international level. Therefore it would be a quite fruitful exercise to explore into the theoretical expositions and actual position in regard to regional disparities at the various scale of spatial units. The findings may be helpful in the plan formulation for the removal of regional disparities,

which is a main plank of contemporary development planning of all the developing countries.



Disparities in the development has been a theme of great academic interest and practical significance during the post world war 2nd period when a large number of colonies attained political independence and became conscious of the distressing disparity that existed between those colonies and their erstwhile colonial master. **The contemporary world consisted of two-different realms; one that of the west, immensely rich, industrialized, urbanized and with a history of steady development since the industrial revolution, the other of newly independent countries, abysmally poor, agricultural, rural and with an equally long history of exploitation and stagnation**. This dualism could not escape the concern of academicians, politicians and administrators.

Several studies were undertaken and numerous theories were postulated to explain the global duality of development and underdevelopment. **Hinderink and Sterkenburg (1978)** classified the studies dealing with regional disparities into three types:

- those which use space as a mere framework to describe regional differences in development;
- those which employ space, particularly in terms of physical space and built environment, as an explanatory variable to analyze spatial inequality; and
- those which adopt space with reference to the level and nature of its development, as a variable to be explained through historically developed politico-economic social structure.

Spatial theories of unequal development were also grouped by **Nash (1963)** into three categories of **spatial differentiation, spatial diffusion and spatial integration**. This classification was based on the mode of analysis adopted. An improvement upon it was suggested by **Browlet (1980)** who again offered a three-fold classification of various theories into those which deal with comparative analysis of development pattern, which make inductive study of development stages in a specific region, and which examine the

process of spatial diffusion of development. This grouping was done essentially in the context of diffusionist development paradigm which highlights the role of spatial interaction.

For a convenient understanding, theories, explaining development in spatial context may be divided into two categories;

- those which emphasized the play of intra-regional factors leading to development or underdevelopment, and
- those which stressed the role of spatial interaction between developed and underdeveloped regions, largely detrimental to the interest of the latter.

What explains development and underdevelopment spatially from the basis of this grouping?

Theory emphasizing intra-regional factors

Theories in this group assign importance to factors relating to natural resources, technical advancement, and social institutions that hindered or accelerated the process of development in any areas.

Nurkse's (1958) 'vicious circle theory'

Nurkse's (1958) 'vicious circle theory' presented an attractive idea that underdeveloped countries were trapped in a series of interlocking problems of poverty and stagnation. The starting point was poverty, which was an insurmountable obstacle to development. If this thesis was valid then it would be difficult to understand as to how the presently developed countries, which were not so always could make advancement.

Boeke

Boeke (1953) attributed underdevelopment in the oriental world to limited needs, backward sloping supply curves of effort and risk taking, and an absence of profit seeking attitude. He stressed that the eastern society was moulded by fatalism and resignation. His gloomy analysis was rightly questioned by a number of scholars including Lewis, Baner, and Yarney

McClelland

McClelland (1961) found a high association between a country's level of achievement motivation and rate of its economic development.

Hagen

Hagen (1962) postulated 'authoritarian theory' holding feudal bringing up of the children responsible for the economic development of a country, In his **'theory of social deviance', Hoselitz (1960)** assigned key role to 'deviants' in development. He defined deviants as the one who break traditions, adopt innovations and thereby accelerate the process of transformation from underdevelopment to development.

George

George (1981) accused the local elites of the third world countries as the real cause of underdevelopment in postcolonial situation. According to her these elites remained the natural friends of western developed countries and exploited the native poor for their own vested interest and retarded the process of development.

Berry

Berry (1969) underlined the development role of integrated urban hierarchy in which innovations filtered down from cities to towns and from both to their surrounding countryside.

Llyod and Dicken

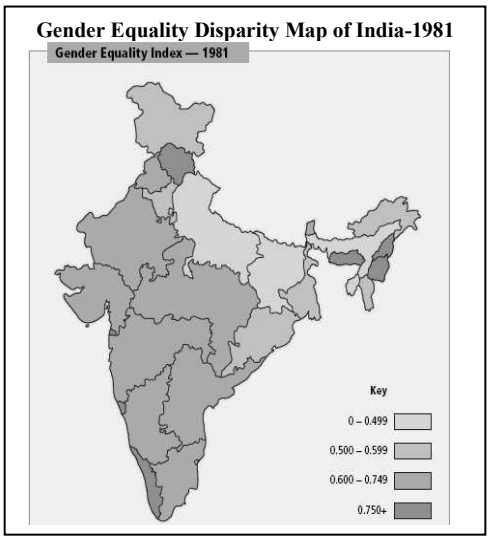
Llyod and Dicken (1972) observed that definable hierarchy of central places was a characteristic feature of an economically developed region.

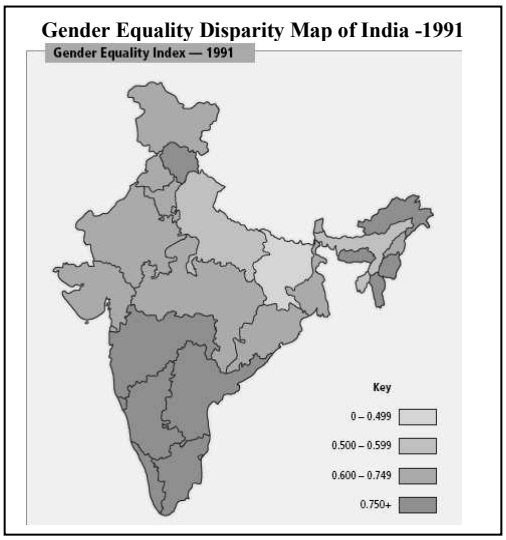
Johnson (1965) associated development inequality with varying access to urban market.

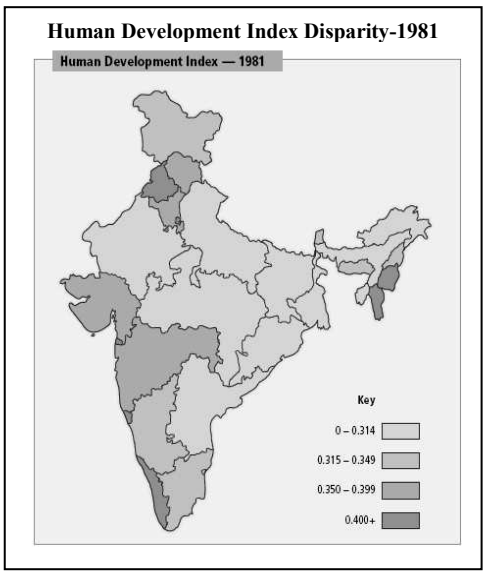
Some other theories described the sequence of development phases, and viewed the existing gap between developed and developing countries as a matter of time lag. The chief exponents of this historical thesis were German scholars namely list, **Brune, Hilderbrand, Bucher, Schmoller and Sombart.**

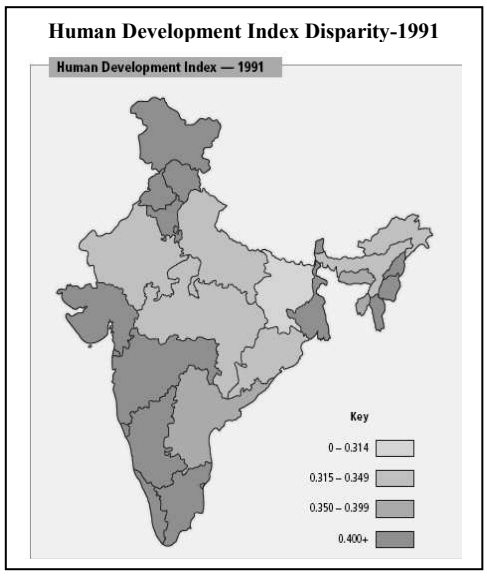
Rostow (1960) borrowing an analogy from the flight of an airplane noted five stages in economic transformation of a capitalist society: **traditional society precondition for take-off, drive to maturity and age of High Mass consumption.** The different countries of the world could be assigned to a particular stage a given point in time.

Theories reviewed above explained development and underdevelopment in an area and regional disparities accruing out of them through the intrinsic conditions. Role of social, psychological and spatial factors were emphasized. The historical perspective was strong in most of them.









Theory emphasizing spatial interaction

The second group of theories, with spatial interaction as the main analytical framework, viewed development and underdevelopment as the two facets of the same coin. Development in one region was at the cost of underdevelopment in some other due to operation of **'backwash effect.'** Western colonial power exploited the third world through direct control during the colonial period and through tied trade and by extension of their aid and model of development in postcolonial period. The developed world created third world and third world created fourth world in their own countries by the greed of elites, arrogance of bureaucrats, hypocrisy of politicians and of western trained pseudo planners and academicians

In just contrast some theories, such as **'Growth Pole'** of **Perroux, Boudville and Richardson**, **'Spatial Diffusion'** of Haggerstrand (1967): and **'Growth Foci'** of **Misra** et al. (1976) gave due recognition to spread effects of development. These theories envisaged that if metropolitan development is sustained at high level, differences between center and periphery may be eliminated, as the economic dynamism of the major cities trickle down to smaller places and ultimately into most tradition bound peripheral areas.

The spatial interaction theories derived their meaning from three different context of space economy; **free market mechanism, colonial setting and neocolonial situation**. Free market mechanism was always biased in favor of development areas. **'Core-Periphery Theory'** by **Friedmann (1966), 'Circular and Cumulative Causation Theory'** by **Myrdal** (1957) represented this context. These theories are well known and need no elaboration.

The second was **colonial setting** in which the imperial powers flourished at the cost of the their colonies siphoning off the latter resources. This was well illustrated by **colonial dependency theory** of **Kundu and Raza (1982)** and in the writing of Marxist scholars such as Davey (1975) and Pavlov et all, (1975).

The third context was **postcolonial situation** in which the newly independent developing countries remained dependent on developed countries and found it difficult to extricate themselves from the network of exploitation. **Amin (1974)** called this process **'Peripheral Capitalism'** and Santos used the term '**dependent capitalism'** (1978). The other exponents of this idea were Baram (1970), Frank (1972), Fanon (1963) and Potekin (1962).

Most of the scholars referred to above tried to explain multifaceted and multicausal phenomenon of development and regional disparities in development by a one-dimensional theory. This amounted to some distortion of the fact. Therefore to reach on a conclusive result an indepth analysis of ground realities in regard to development disparities in different regions and various countries of the world is needed.

Hypothesis on regional disparities

On the basis of study of trend and pattern of regional disparities in development in different regions and various countries of the world the four hypotheses were extended:

1. Spatial convergence

The first hypothesis was **spatial convergence** based on development experiences of the western developed countries. It was stated that regional disparities tend to lessen with the process of development. The hypothesis found its support in the '**Spread and Backwash Theory'** of **Myrdal (1957), 'Trickle Down and Polarization Effect Theory'** of **Hirschman** (1958), **Urban Hierarchy Thesis for Development Innovation** of **Berry (1969)**, **Growth Pole Theory** of **Perraux, Baudville and Richardson**, **Spatial Diffusion** of **Haggerstrand** (1967) and **Growth Foci** of **Misra** et al., (1976).

2. Spatial convergence hypothesis

The **spatial convergence hypothesis** was falsified in case of third world developing countries where regional disparities increased with the process of development. In these countries the self-perpetuation hypothesis was based on the findings of Latin American and African situation and found its support in colonial and neocolonial dependency theory of Frank (1972), Amin (1974) and Kundu and Raza (1982). Additional point that favoured this hypothesis was development planning based on the principle of techno-economic efficiency and demonstration effort. In the capital scarce third world countries the meager development resources were invested in economically efficient regions that accelerated the regional disparities.

3.Concentration cycle hypothesis

The third hypothesis, which was **concentration cycle hypothesis**, is a synthesis of convergence and divergence hypothesis. It is well known as inverted 'u' shape hypothesis of Williamson (1965). It denotes that regional disparities increases in the beginning of development process, remain constant for some time and ultimately decrease with the process of development. It may be true in case of very long duration of time. However, the experience of developing countries showed that there was no visible sign for the decrease of regional disparities in these countries.

Recently some novel facts in regard to regional disparities in development were disclosed:

- At the global level fourth world countries namely Afghanistan, Nepal and Ethiopia which were poorest pocket of the world (Dubey, 1984).
- The degree of regional disparities varied from one area to another within the same country (Tewari, 1985).
- The regional disparities in various components of development do no move with same intensity and some time moved in opposite direction (Singh and Dubey, 1985; Dubey, 1988).

All these facts lead to fourth hypothesis that there is no association between development and regional disparities. In short it may be stated as 'no trade-off hypothesis.' Now it would be better to investigate the position of regional disparities in India in the light of above discussed hypothesis.

REGIONAL PLANNING

Synopsis
Region
Planning
Regional Planning Definitions
Need for Regional Planning / objectives
Features of Regional Planning
Unit of Planning – meaning
Characteristics of planning region
Role of regional planning
Regional planning and five year plans
Regional planning / development policies (Three conceptualizations)

Region:
It means 'a tract of land; an area homogeneous with respect to announced criteria' "**larger than any single urban area i.e. 'supra urban' space'**.

Regional development is the provision of aid and other assistance to regions which are less economically developed. Regional development may be domestic or international in nature. The implications and scope of regional development may therefore vary in accordance with the definition of a region, and how the region and its boundaries are perceived internally and externally.

The word 'region' is also used to stand for a tract of land, which is smaller than the individual state but larger than its basic territorial unit, namely the district. This meaning has been recognized in governmental pronouncements as well. The planning commission, for instance, employs this term to convey such a meaning, but in none of the five-year plans, it has made this explicit.

Planning:
Planning means making decisions in advance Planning may be viewed as highly disciplined and formalized activity through which a society induces change in itself. It involves the application of scientific knowledge in order to solve the problems and achieve the goals of a social system. **Any social system, therefore, which has adopted planning, whether it is a firm, family, town or region may hope to determine its own future**. Further, in evaluating the steps taken to reach this future, it may learn and through learning it may engage in a continual process of self-realization.

Regional Planning
Regional Planning is essentially a process of orderly and systematic anticipation of the future of a region, involving recommendations of the necessary remedial and constructive actions by public and private agencies to achieve the objectives of the plan/regional community.

Regional planning may involve extensive areas that include one or more regions or more limited areas such as drainage basins or metropolitan areas.
eg :
Southern Regions (Tamilnadu, Andhra Pradesh, Karnataka, Kerala) European Economic Market, Colombo Plan, SAARC Damodar Valley, TVA, Vaigai Periyar Command Area Madurai Metropolitan Planning Area.

Regional planning on one hand is an extension of local planning at the municipal or country level and on the other hand is a part of national and international planning.

Why Regional planning: (Objectives)
Basically the purpose of Regional Planning is to correct the distortions in the planning process.
General objectives of Regional Planning are as follows:
1. The clash between **economic goals** (formulated in terms of outputs only) and the **social development objectives** and needs.
2. The concentration of industry and infrastructure in a few areas thus creating enclaves of modernization in the midst of growing economic stagnation.
3. Undue emphasis on heavy industry to the neglect of agriculture
4. Promoting a pattern of education unsuited to the needs of general masses
5. Problems of inadequate employment opportunities.
6. Problems of adequately exploiting resources in a particular area.
7. Overcoming limitations on agriculture through the use of most advanced technology.
8. The problem of improving access to and the distribution of the higher order type of social facilities.
9. The problem of insecurity in some newly acquired territorial addition to the state.
10. The problem of groups experiencing social economic or political disadvantages in some area of the 'nation state'.
11. The problem of experiencing physical discomfort through overcrowding and congestion.

Features of Regional Planning:
- Regional Planning is a bridge between national economic planning and local physical planning.
- Opportunity for the regional governments to order its own affairs.
- Regional Planning is holistic – i.e. economic, social and physical.

Unit of Planning:
The important question in regional planning is
"What should be the unit of planning"?
Planning Region (Unit)
(1) should be large enough to take investment decisions of economic size,
(2) should be able to supply its own industry with necessary raw materials and labour,
(3) should have a homogeneous economic structure,
(4) contain at least one growth point and
(5) **Have a common approach to and awareness of its problems**". – Klaussen

Planning region to be an area that is large enough to enable substantial changes in the distribution of population and employment to take place within its boundaries, yet which is small enough for its planning problems to be viewed as a whole – Keeble.

In demarcating planning regions, administrative convenience assumes paramount importance, but for the sake of administrative convenience one should not forget about the homogeneity and nodality. So, homogeneity, nodality and administrative convenience should given equal importance.

Characteristics of a Planning Region:

1) Contiguity

Geographically it should be a contiguous unit, though could be sub divided into plain, hilly tract, coastal

2) Social cultural homogeneity

The people of the region should have social and cultural cohesiveness.

3) Separate data collection unit

The region should have a separate unit for data collection and analysis.

4) The region should have an economic existence, which can be assessed from statistical records.

5) People's participation

It should be small enough to ensure local people's participation in its development.

6) Span of control

It should be under one administrative agency.

7) Optimum size

It should not be too small. Its geographical size should be big enough to exploit resources and avoid duplication (by way of partially used capacity in neighbouring regions). This is as much relevant for new investments in capital for production as for technical training, medical facilities colleges etc. It should be big enough to permit the major part of labour requirements in any employing center to be met from within the region.

8) Minimum (or) narrow disparity

It should have fairly homogeneous economic structure, i.e. the variation in local proportions of employment and output in agriculture; industry and services should be within a narrow range. To this we may also add a minimum topographical homogeneity which ensures absence of seasonal or permanent breaks in road links.

9) Presence of growth point

It should have one or more growth points.

10) Consensus in defining problems and solving it

There should be common aspirations and approaches to their solution; it should permit and encourage competition but not rivalry or apathy between one area and the other.

Role of Regional Planning

The main purpose of regional planning is to ensure optimal utilization of space and optimal distribution pattern of human activities over the space. To achieve this, it plays either.

1) Passive or indicative role is to point out how the sectoral investments decision can be integrated at the regional level and the advantages there of.

2) Active or imperative role is formulating and then implementing measures to assist the growth of certain regions, while restraining the growth of others

Regional Planning and Five Year Plans

I FYP: A research committee was set up to study about the problem.

II FYP: The plan emphasized

a) Less developed areas should receive due attention
b) Keep the claims of underdeveloped regions in mind while deciding the location of new enterprises.

III FYP: There was a separate chapter on **"balanced regional development"**. The plan emphasized

a) Balanced development of different parts of the country,
b) Extension of benefits of economic progress to the less developed regions
c) Wide spread diffusion of industry

IV FYP: Attempts were made to identify the backward regions **(Pande Committee)** for the purpose of granting concessions and financial assistance to industries **(Wanchoo Committee)** was initiated and weight age given to backward states in allocation of central assistance.

V FYP: Emphasis was laid on as follows:

a) Resource / Problem based Area Programs: DPAP, CADP, HADP
b) Target Group Programs: SFDA, MFDA
c) Area Specific Incentive Programs: Sub Plan Approach for Hill / Tribal areas.

Other Five Year Plans …. Regional development policy-conceptualization

Considering the period of planning as a whole the policies adopted by the govt can be classified into either of the following categories.

CONCEPTUALIZATION OF REGIONAL DEVELOPMENT POLICIES IN INDIA

Conceptualization of regional development policies in India

1) Policies aimed at industrialization of lagging regions

eg. a) Location of public sector projects in backward regions

b) Use of industrial licensing policy to direct private investment in backward in backward areas.

c) Encouragement to prospective entrepreneurs to set-up industries in backward areas.

2) Policies for development of irrigation, agriculture & allied activities

eg. a) Command area, Drought prone Area, Hill Area development

3) **Policies aimed at providing infrastructural etc in facilities regions transport, communication, banking etc in backward regions**

4) **Transfer of resources from centre to state in the form of plan assistance, non plan assistance and discretionary grants in such a way so as to reduce regional disparities.**

5**) Special Programs for the development of backward and less developed regions**

II Dr.K.V. Sundaram's Conceptualization of Regional Development Policies

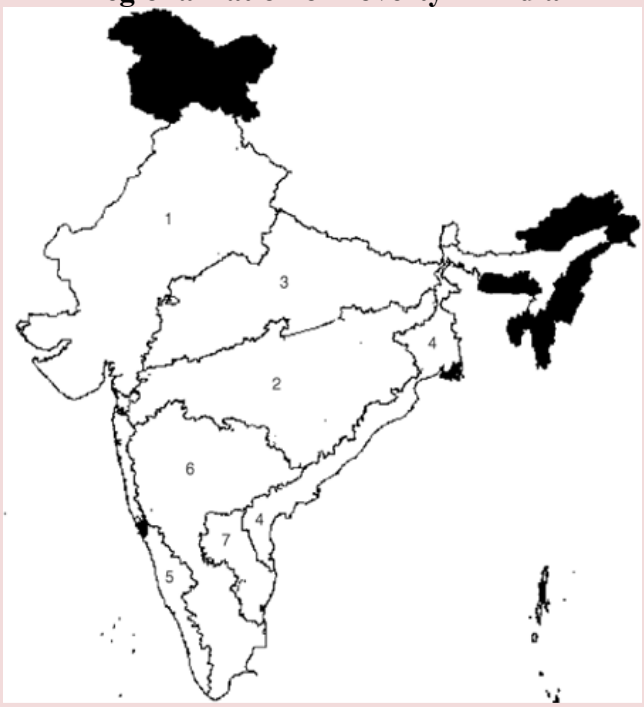
1. An inter-regional allocation policy for the distribution if central assistance / funds to State Governments governed by a formula tilted in favor of backward areas.
2. Incentive Policies designed to direct investments in the industrially backward districts.
3. Action planning based on area / regional development approach to tackle identified problem areas – tribal areas, hill areas, drought prone areas, desert and flood prone areas, problem region like north-east.
4. Integrated approach to local level planning focused on the district and the block.
5. A basic needs strategy oriented towards the provision of minimum needs, so that disadvantaged areas and groups may achieve parity with others in terms of social consumption.

III Policy measures to abolish regional in balance in India

1. Capital and Technology transfers.
2. Incentive policies for agricultural and industrial growth
3. Land development and resettlement with a package of incentives
4. Rationalization Strategy.
5. Integrated development focused on delimited small areas
6. Target group approaches
7. Bottom-up strategies and decentralized development
8. Comprehensive regional planning approach.

Regionalization of Poverty

Regionalization of Poverty in India



Region 1 is the most clearly demarcated – not only did it have the lowest incidence of poverty in 1999 (less than 6 percent) but also the steepest decline over the period considered. It stretches from the Western Plain, Kutch and part of Kathiwaar peninsular into the Northern Plain and central highlands, and further into the fertile irrigated areas of Punjab and Haryana.
Region 2 is the 'heart' of the poverty belt, which had been identified as early as the early 1970s accounting for substantial part of the rural poor in 1999. It covers the area of the Eastern (Chattisgarh) plateau and Eastern Ghats and extending into the central highlands and part of the Deccan plateau. This is a hot semi-arid region with limited scope for irrigation.
Region 3 is the medium-poverty region extending over Eastern UP, Bihar and into the Central Highlands. It had more potential for irrigation than Region 2 though the soil is less favorable for staple agriculture.
Region 4 is a more heterogeneous one stretching along the east coast of India. It includes the hot sub-humid to humid plains of Bengal and Assam and stretches north-east to include the area of the Eastern Himalayas, and further south into the semi-arid per humid area of the Eastern coastal plain.
Region 5 is the Western Gnats and Coastal Plain with red laterite and alluvium derived soils and humid to per humid ecological conditions.
Region 6 is the arid region of the Deccan, including parts of Telengana and the Eastern Ghats with red and black soil.
Region 7 is the Eastern Ghats and Tamil Nadu uplands the Karnataka Deccan plateau with red loamy soil.

Backward Area Development

Criteria to identify backwardness

Attempts to identify the poorest or most backward districts in the country have been made since 1960. A committee of the Government of India's Ministry of Rural Areas and Employment the previous name for the Ministry of Rural Development conducted one of the most elaborate exercises for the identification of backward districts in 1997. Headed by EAS Sharma, who was then Principal Advisor to the Planning Commission, the committee used a composite method with differing weights for parameters such as:

List of Backward Districts in India

Uttar Pradesh	**68**	**Madhya Pradesh**	**40**
Bihar	**37**	**Rajasthan**	**32**
Orissa	**18**	**Assam**	**17**
Jharkhand	**17**	**Arunachal Pradesh**	**13**
Chattisgarh	**12**	**Haryana**	**11**
J & K	**8**	**Karnataka**	**7**
Nagaland	**7**	**West Bengal**	**7**
Gujarat	**5**	**Maharashtra**	**5**
Manipur	**5**	**Meghalaya**	**5**
Uttaranchal	**5**	**Mizoram**	**2**
Punjab	**2**	**Andhra Pradesh**	**1**
Dadra & Nagar Haveli	**1**	**Sikkim**	**1**
Tripura	**1**	**Total**	**327**

- Incidence of poverty
- Education
- Health
- Water supply
- Transport and communications, and
- Degree of industrialization.

Sharma Committee List of backward districts

The Sharma Committee's list of 100 most backward districts included:

- 38 districts from undivided Bihar
- 19 from undivided Madhya Pradesh
- 17 from undivided Uttar Pradesh
- 10 from Maharashtra, and
- A smaller number of districts from other states

There were no districts from Gujarat, Goa, Kerala, Punjab, Andhra Pradesh and Tamilnadu. The committee did not consider the northeastern states and Jammu and Kashmir as it felt "they had problems which were specific and peculiar to them".

The desert, drought prone and backward areas (integrated development) Bill, 2006

''Backward areas'' include the desert and drought prone areas with very low or scanty rainfall and the areas which are economically, industrially, educationally and socially lagging behind from the rest of the country and so declared by Central Government by notification in the Official Gazette;

Criteria recommended by various committees for identification of backwardness can be summarized as follows:

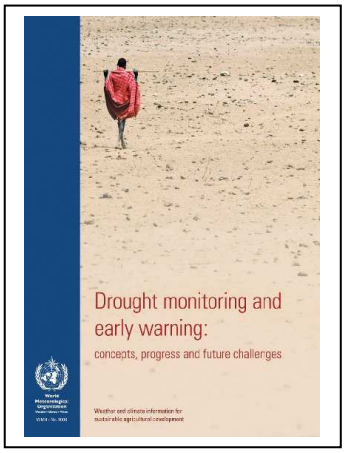
1. Density of population per sq.km. of area.
2. Percentage of agricultural workers to total workers.
3. Percentage of literate population.
4. Percentage of school going children.
5. Total per-capita income.
6. Per capita income from agriculture.
7. Sex ratio, industry and mining.
8. Availability of infrastructural facilities.
9. Per capita consumption of electricity
10. Chronically drought prone areas.

11. Chronically flood prone areas.
12. Length of surfaced roads per 100 sq. km. Of area.
13. Public health care system.
14. Safe drinking water facility.
15. Poverty rates.

List of Backward Blocks in Tamilnadu

Name of the District	Name of the Backward Blocks
1 KANCHIPURAM	1. Wallajnabad 2.Kancheepuram (Urban) 3.Lathur 4.Chitahamur
2 THIRUVALLUR	1. Poondi 2.Kadambathur
3 CUDDALORE	1. Portonovo 2.Melbhuvanagiri
4 VILLUPURAM	1. Melmalayanur 2.Vallam 3.Thirunavalkur 4.Kanai 5.Kandamangalam 6.Thagadurgam 7.Rishivandiyam 8.Kalrayan Hills
5 VELLORE	1. Arcot 2.Jolarpet 3.Kandhili 4.Nemili
6 THIRUVANNAMALAI	1. Cheyyar 2.Vembakkam 3.Polur 4.Chetput 5.Jawadhu Hils 6.Pudupalayam 7.Thandayampet
7 DHARMAPURI	1. Mathur 2.Veppanapalli
8 KARUR	Kadavur 2.Thogaimalai 3.Perambalur District 4.Uppiliyapuram 5.Andimadam 6.T. Palur 7.Alathur 8.Veppanthattai 9.Veppur 10.Sendurai 11.Thirumanur
9 TIRUCHIRAPALLI	1. Marungapuri 2.Vaiyampatti 3.Karur District
10 THANJAVUR	1.Thiruvonam 2.Sethubavachatram 3.Ammapettai 4.Thiruppanandal
11 THIRUVARUR	1.Madukkur 2.Kodavasal 3.Koradachery 4.Thiruthuraipoondi 5.Muthupettai 6.Kottur 7.Koothanallur (Urba)
12 NAGAPATTINAM	1. Sirkali 2.Kollidam 3.Keelaiyur
13 MADURAI	1. Sedapatti 2.Kottampatti
14 THENI	1. Chinnamanur 2.Cumbam 3.Kadamalaikundu 4.Myladumparai
15 DINDIGUL	1. Natham
16 RAMANATHAPURAM	1.Nainarkoil 2.Bogalur 3.Thirupullani 4.R.S. Mangalam 5.Kadaladi
17 SIVAGANGAI	1. S. Pudur 2.Kannangudi
18 THIRUNELVELI	1.Courtallam (Urban) 2.Kadayanallur (Urban) 3.Melaneelithanallur

Drought & Backwardness
What is Drought?
Understanding and Defining Drought

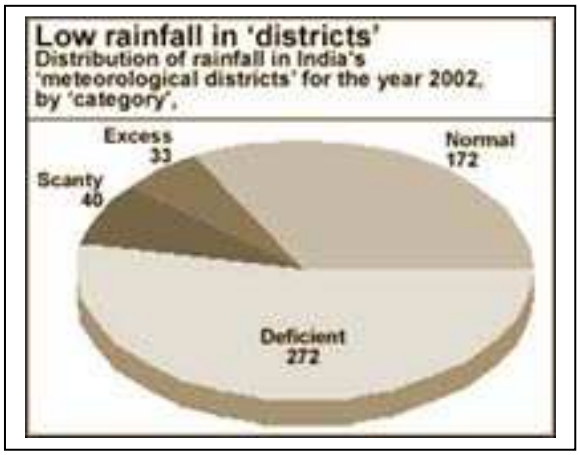


The Concept of Drought
Conceptual Definitions of Drought
Operational Definitions of Drought
Disciplinary Perspectives on Drought

The Concept of Drought

Drought is a normal, recurrent feature of climate, although many erroneously consider it a rare and random event. Drought is a temporary aberration; it differs from aridity, which is restricted to low rainfall regions and is a permanent feature of climate.

To know more about drought visit
http://indiagovernance.gov.in/droughtmanagement.php



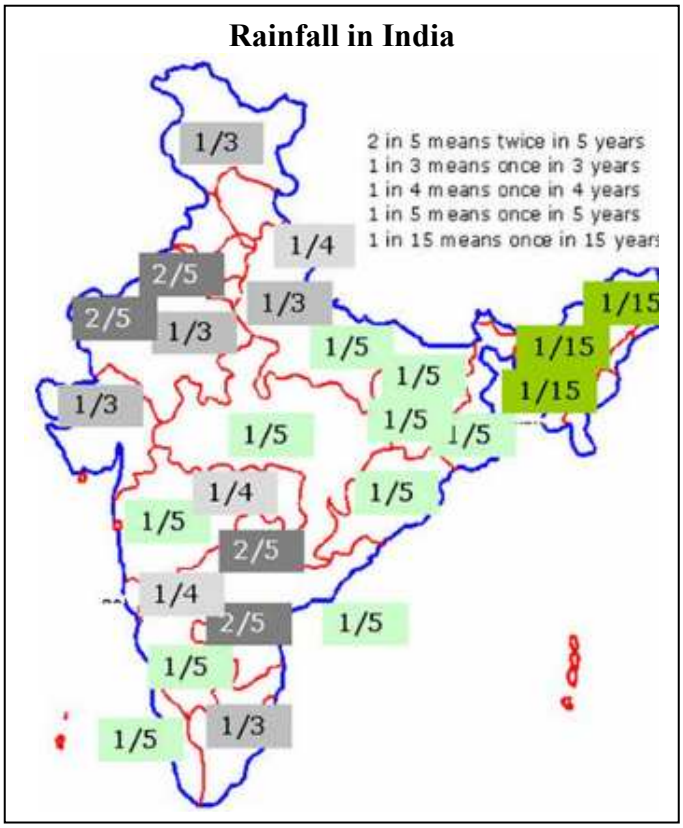
Drought is an insidious hazard of nature. it originates from a deficiency of precipitation over an extended period of time, usually a season or more. This deficiency results in a water shortage for some activity, group, or environmental sector. Drought should be considered relative to some long-term average condition of balance between precipitation and evapo transpiration (i.e., evaporation + transpiration) in a particular area, a condition often perceived as "normal". It is also related to the timing (i.e., principal season of occurrence, delays in the start of the rainy season, occurrence of rains in relation to principal crop growth stages) and the effectiveness (i.e., rainfall intensity, number of rainfall events) of the rains. Other climatic factors such as high temperature, high wind, and low relative humidity are often associated with it in many regions of the world and can significantly aggravate its severity.

Drought should not be viewed as merely a physical phenomenon or natural event. Its impacts on society result from the interplay between a natural event (less precipitation than expected resulting from natural climatic variability) and the demand people place on water supply. Human beings often exacerbate the impact of drought. Recent droughts in both developing and developed countries and the resulting economic and environmental impacts and personal hardships have underscored the vulnerability of all societies to this "natural" hazard.

There are two main kinds of drought definitions: conceptual and operational.

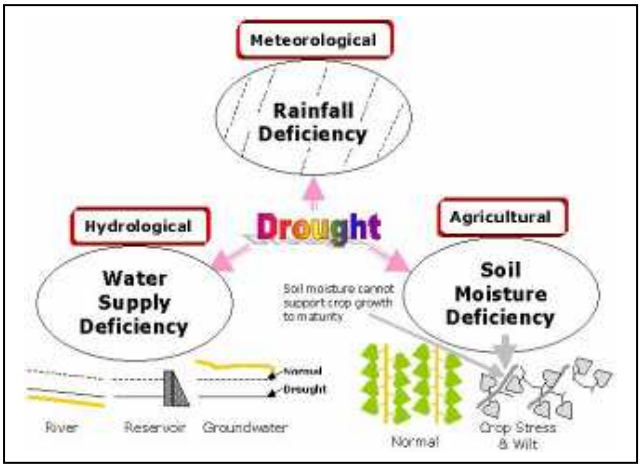
Conceptual Definitions of Drought

Conceptual definitions, formulated in general terms, help people understand the concept of drought. For example: Drought is a protracted period of deficient precipitation resulting in extensive damage to crops, resulting in loss of yield.



Conceptual definitions may also be important in establishing drought policy. For example, Australian drought policy incorporates an understanding of normal climate variability into its definition of drought. The country provides financial assistance to farmers only under "exceptional drought circumstances," when drought conditions are beyond those that could be considered part of normal risk management. Declarations of exceptional drought are based on science-driven assessments. Previously, when drought was less well defined from a policy standpoint and less well understood by farmers, some farmers in the semiarid Australian climate claimed drought assistance every few years.

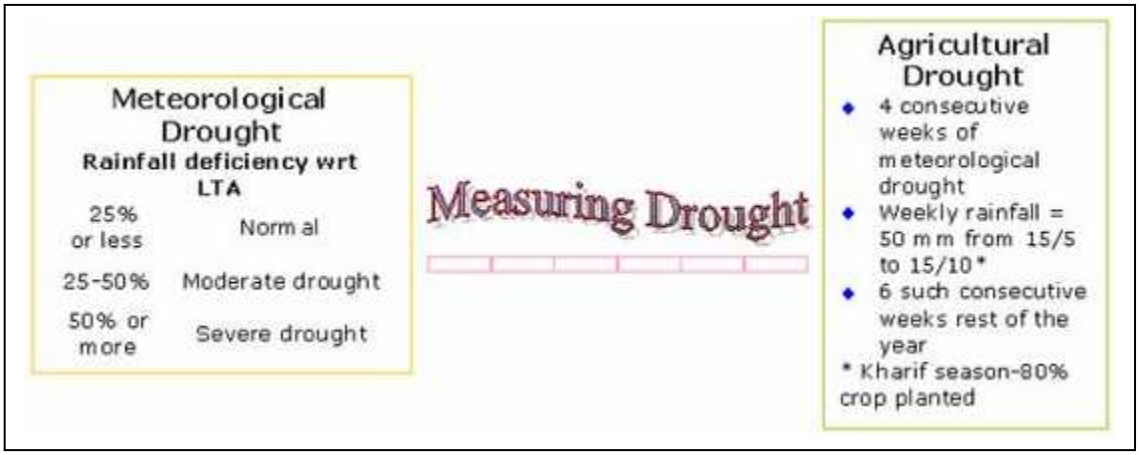
Operational Definitions of Drought



Operational definitions help people identify the beginning, end, and degree of severity of a drought. To determine the beginning of drought, operational definitions specify the degree of departure from the average of precipitation or some other climatic variable over some time period. This is usually done by comparing the current situation to the historical average, often based on a 30-year period of record. The threshold identified as the beginning of a drought (e.g., 75% of average precipitation over a specified time period) is usually established somewhat arbitrarily, rather than on the basis of its precise relationship to specific impacts.

An operational definition for agriculture might compare daily precipitation values to evapotranspiration rates to determine the rate of soil moisture depletion, then express these relationships in terms of drought effects on plant behavior (i.e., growth and yield) at various stages of crop development. A definition such as this one could be used in an operational assessment of drought severity and impacts by tracking meteorological variables, soil moisture, and crop conditions during the growing season, continually reevaluating the potential impact of these conditions on final yield. Operational definitions can also be used to analyze drought frequency, severity, and duration for a given historical period. Such definitions, however, require weather data on hourly, daily, monthly, or other time scales and, possibly, impact data (e.g., crop yield), depending on the nature of the definition being applied. Developing a climatology of drought for a region provides a greater understanding of its characteristics and the probability of recurrence at various levels of severity. Information of this type is extremely beneficial in the development of response and mitigation strategies and preparedness plans.

Disciplinary Perspectives on Drought
Meteorological, Hydrological, Agricultural and Socioeconomic



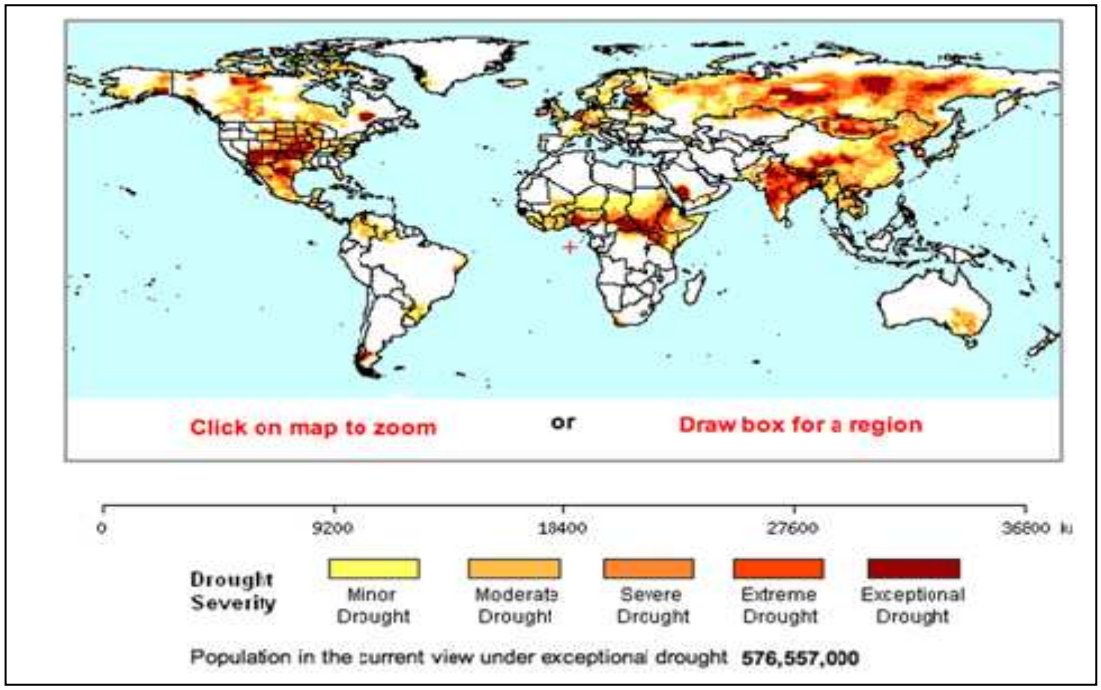
Meteorological Drought
Meteorological drought is defined usually on the basis of the degree of dryness (in comparison to some "normal" or average amount) and the duration of the dry period. Definitions of meteorological drought must be considered as region specific since the atmospheric conditions that result in deficiencies of precipitation are highly variable from region to region. For example, some definitions of meteorological drought identify periods of drought on the basis of the number of days with precipitation less than some specified threshold. This measure is only appropriate for regions characterized by a year-round precipitation regime such as a tropical rainforest, humid subtropical climate, or humid mid-latitude climate

Agricultural Drought
Agricultural drought links various characteristics of meteorological (or hydrological) drought to agricultural impacts, focusing on precipitation shortages, differences between actual and potential evapotranspiration, soil water deficits, reduced ground water or reservoir levels, and so forth. Plant water demand depends on prevailing weather conditions, biological characteristics of the specific plant, its stage of growth, and the physical and biological properties of the soil. A good definition of agricultural drought

should be able to account for the variable susceptibility of crops during different stages of crop development, from emergence to maturity. Deficient topsoil moisture at planting may hinder germination, leading to low plant populations per hectare and a reduction of final yield. However, if topsoil moisture is sufficient for early growth requirements, deficiencies in subsoil moisture at this early stage may not affect final yield if subsoil moisture is replenished as the growing season progresses or if rainfall meets plant water needs.

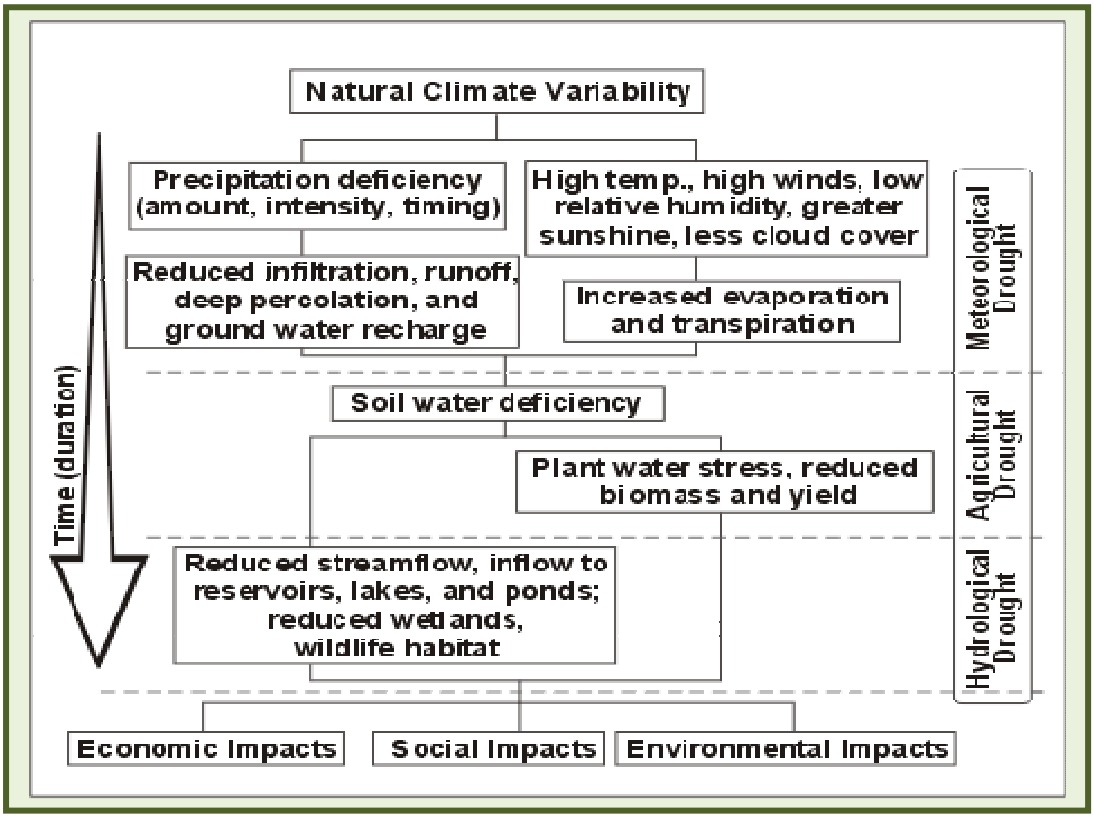
Hydrological Drought

Hydrological drought is associated with the effects of periods of precipitation (including snowfall) shortfalls on surface or subsurface water supply (i.e., stream flow, reservoir and lake levels, ground water). The frequency and severity of hydrological drought is often defined on a watershed or river basin scale. Although all droughts originate with a deficiency of precipitation, hydrologists are more concerned with how this deficiency plays out through the hydrologic system. Hydrological droughts are usually out of phase with or lag the occurrence of meteorological and agricultural droughts. It takes longer for precipitation deficiencies to show up in components of the hydrological system such as soil moisture, stream flow, and ground water and reservoir levels. As a result, these impacts are out of phase with impacts in other economic sectors. For example, a precipitation deficiency may result in a rapid depletion of soil moisture that is almost immediately discernible to agriculturalists, but the impact of this deficiency on reservoir levels may not affect hydroelectric power production or recreational uses for many months. Also, water in hydrologic storage systems (e.g., reservoirs, rivers) is often used for multiple and competing purposes (e.g., flood control, irrigation, recreation, navigation, hydropower, wildlife habitat), further complicating the sequence and quantification of impacts. Competition for water in these storage systems escalates during drought and conflicts between water users increase significantly.



Hydrological Drought and Land Use

Although climate is a primary contributor to hydrological drought, other factors such as changes in land use (e.g., deforestation), land degradation, and the construction of dams all affect the hydrological characteristics of the basin. Because regions are interconnected by hydrologic systems, the impact of meteorological drought may extend well beyond the borders of the precipitation-deficient area. For example, meteorological drought may severely affect portions of the northern Rocky Mountains and northern Great Plains region of the United States. However, since the Missouri River and its tributaries drain this region to the south, there may be significant hydrologic impacts downstream. Similarly, changes in land use upstream may alter hydrologic characteristics such as infiltration and runoff rates, resulting in more variable stream flow and a higher incidence of hydrologic drought downstream. Bangladesh, for example, has shown an increased frequency of water shortages in recent years because land use changes have occurred within the country and in neighboring countries. Land use change is one of the ways human actions alter the frequency of water shortage even when no change in the frequency of meteorological drought has been observed.



Sequence of Drought Impacts

The sequence of impacts associated with meteorological, agricultural, and hydrological drought further emphasizes their differences. When drought begins, the agricultural sector is usually the first to be affected because of its heavy dependence on stored soil water. Soil water can be rapidly depleted during extended dry periods. If precipitation deficiencies continue, then people dependent on other sources of water will begin to feel the effects of the shortage. Those who rely on surface water (i.e., reservoirs and lakes) and subsurface water (i.e., ground water), for example, are usually the last to be affected. A short-term drought that persists for 3 to 6 months may have little impact on these sectors, depending on the characteristics of the hydrologic system and water use requirements.

When precipitation returns to normal and meteorological drought conditions have abated, the sequence is repeated for the recovery of surface and subsurface water supplies. Soil water reserves are replenished first, followed by stream flow, reservoirs and lakes, and ground water. Drought impacts may diminish rapidly in the agricultural sector because of its reliance on soil water, but linger for months or even years in other sectors dependent on stored surface or subsurface supplies. Ground water users, often the last to be affected by drought during its onset, may be last to experience a return to normal water levels. The length of the recovery period is a function of the intensity of the drought, its duration, and the quantity of precipitation received as the episode terminates.

Socioeconomic Drought

Socioeconomic definitions of drought associate the supply and demand of some economic good with elements of meteorological, hydrological, and agricultural drought. It differs from the aforementioned types of drought because its occurrence depends on the time and space processes of supply and demand to identify or classify droughts. The supply of many economic goods, such as water, forage, food grains, fish, and hydroelectric power, depends on weather. Because of the natural variability of climate, water supply is ample in some years but unable to meet human and environmental needs in other years. Socioeconomic drought occurs when the demand for an economic good exceeds supply as a result of a weather-related shortfall in water supply. For example, in Uruguay in 1988–89, drought resulted in significantly reduced hydroelectric power production because power plants were dependent on stream flow rather than storage for power generation. Reducing hydroelectric power production required the government to convert to more expensive (imported) petroleum and stringent energy conservation measures to meet the nation's power needs.

In most instances, the demand for economic goods is increasing as a result of increasing population and per capita consumption. Supply may also increase because of improved production efficiency, technology, or the construction of reservoirs that increase surface water storage capacity. If both supply and demand are increasing, the critical factor is the relative rate of change. Is demand increasing more rapidly than supply? If so, vulnerability and the incidence of drought may increase in the future as supply and demand trends converge.

Drought-II

Meaning & Explanation

A drought is defined as an extended period of abnormally dry weather that causes water shortages and crop damage. A drought starts when total rainfall is well below average for several months. Other signs of drought include: unusually low river flows, low ground water and reservoir levels, very dry soil, reduced crop yields or even crop failure, and algae blooms in reservoirs and lakes. Groundwater is not replenished because not enough rain is falling to wet the soil's entire surface area and to be absorbed properly.

A **drought** is a period of time when there is not enough water to support agricultural, urban, human, or environmental water needs. A drought usually refers to an extended period of below-normal rainfall, but can also be caused by drying bores or lakes, or anything that reduces the amount of liquid water available. Although what is considered "normal" varies from one region to another, drought is a recurring feature of nearly all the world's climatic regions. The effects of drought vary greatly, depending on agricultural, urban and environmental water needs. Water companies, farmers, and ranchers are those that suffer the worst as a result of drought.
Conceptually, there are three main types of drought:

- **Meteorological drought** is brought about when there is a prolonged period with less than average precipitation. Meteorological drought usually precedes the other kinds of drought.

- **Agricultural drought** is brought about when there is insufficient moisture for crop or range production. This condition can arise, even in times of average precipitation, owing to soil conditions or agricultural techniques.
- **Hydrological drought** is brought about when the water reserves available in sources such as aquifers, lakes, and reservoirs falls below the statistical average. This condition can arise, even in times of average (or above average) precipitation, when increased usage of water diminishes the reserves.

Drought conditions lead to increased growth of algae in lakes, ponds and other slow-moving bodies of water. The water is no longer a safe place for fish and other aquatic life. Animals that drink from the rivers or streams can become sick and die; swimmers in affected waters may become ill. The ecology of an area may be affected by the drying of wetlands, with wading birds dying out. Crop production will be lower than usual; trees may die. Wildfires spring up; lack of irrigation can lead to famine and disease.

Sociological consequences of drought range from social unrest to relocation of populations to war.

Consequences

Periods of drought can have significant environmental, economic and social consequences.

The most common consequences are:
- Wildfires (called Bushfires)
- Ground drag and Desertification.
- Loss of agricultural production
- Disease
- Thirst
- Famine due to lack of water for irrigation
- Social unrest
- Migration or relocation of those impacted
- War for water and foods.

The effect varies according to vulnerability. For example, subsistence farmers are more likely to migrate during drought because they do not have alternative food sources. Areas with populations that depend on subsistence farming as a major food source are more vulnerable to drought-triggered famine. Drought is rarely if ever the sole cause of famine; socio-political factors such as extreme widespread poverty play a major role.

Drought can also reduce water quality, because lower water flows reduce dilution of pollutants and increase contamination of remaining water sources in that

Main mitigation strategies

The main mitigation strategies are as follows-

- **Drought monitoring--** It is a continuous observation of rainfall situation and comparison with the existing water needs of a particular sector of a society.
- **Water supply conservation--** We can conserve water through Rain Water Harvesting which can be used for agricultural purposes.
- **Land use--** Crops which needs less water should be grown in a drought prone area.
- **Livelihood planning-** A section of a society which is least affected by the droughts should be advised to live there.

1900, India
250,000 to 3.25 million people died from drought, starvation and disease.
1928-30, Northwest China
Famine resulted in over 3 million deaths.
1936, Sichuan Province, China

This was the worst drought in the modern history of the area. 34 million farmers were displaced and 25 million people starved

Planning Commission's list of 100 backward districts for RSVY program

Name of state	Name of district
Andhra Pradesh	Adilabad Warangal Chittor Mahbubnagar Vizianagaram
Chhattisgarh	Bastar Dantewada Kankar Bilaspur
Gujarat	Dangs Dohad Panchmahals
Haryana	Sirsa
Jharkhand	Lohardagga* Gumla* Simdega Saraikela West Singhbhum* Goddha
Karnataka	Gulburga Bidar Chitradurga Davangere
Kerala	Palakkad Waynad
Madhya Pradesh	Mandla* Barwani West Nimar Seoni* Shahdol Umaria Balaghat* Satna Siddhi
Maharashtra	Gadchiroli* Bhandara Gondia Chandrapur Hingoli Nanded* Dhule Nandurbar Ahmednagar
Punjab	Hoshiarpur
Rajasthan	Banswara Dungarpur Jhalawar
Tamil Nadu	Tiruvannamalai Dindigul Cuddalore Naggapattinam Sivgangai
Uttar Pradesh	Sonbhadra Rae Bareli* Unnao* Sitapur* Hardoi* Banda Chitrakoot Fatehpur* Barabanki* Mirzapur Gorakhpur Kushinagar Lalitpur*Jaunpur Hamirpur* Jalaun* Mahoba Kaushambi Azamgarh Pratapgarh*
West Bengal	Purulia 24 South Parganas Jalpaiguri West Midnapur South Dinajpur Bankura North Dinajpur Birbhum
Assam	Kokrajhar North Lakhimpur Karbi Anglong Dhemaji North Cachar Hills
Arunachal Pradesh	Upper Subansiri
Himachal Pradesh	Chamba Sirmaur
Jammu and Kashmir	Doda Kupwara Poonch
Manipur	Tamenlong
Meghalaya	West Garo Hills
Mizoram	Lawngtlai
Nagaland	Mon
Sikkim	North Sikkim
Tripura	Dhalai
Uttaranchal	Champavat Tehri Garhwal Chamoli

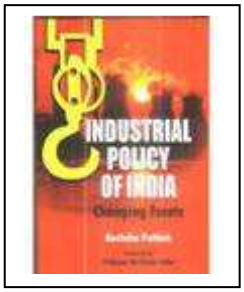
Industrial Policy for Balanced Regional Development

Government of India - Ministry of Industry

Statement on Industrial Policy

Policy objectives

Policy Objectives
Industrial policy should address the vision of our nation i.e.
Rapid agricultural and industrial development of our country,
Rapid expansion of opportunities for gainful employment,
Progressive reduction of social and economic disparities,
Removal of poverty and attainment of self-reliance



In 1954, immediately after Independence, Government introduced the Industrial Policy Resolution. This outlined the approach to industrial growth and development. After the adoption of the Constitution increase in production and ensuring its equitable distribution. After the adoption of the Constitution and the socio-economic goals, the Industrial Policy was comprehensively revised and adopted in 1956. To meet new challenges, from time, it was modified through statements in 1973, 1977 and 1980.

The Industrial Policy Resolution of 1948 was followed by the Industrial Policy Resolution of 1956 which had as its objective the acceleration of the rate of economic growth and the speeding up of industrialization as a means of achieving a socialist pattern of society. In 1956, capital was scarce and the base of entrepreneurship not strong enough. Hence, the *1956* Industrial policy Resolution gave primacy to the role of the State to assume a predominant and direct responsibility for industrial development.

The Industrial Policy Statement of 1973, inter alia, identified high priority industries where investment from large industrial houses and foreign companies would be permitted.
The Industrial Policy Statement of 1977 laid emphasis on decentralization and on the role of small scale, tiny and cottage industries.

A number of policy and procedural changes were introduced in 1985 and 1986 under the leadership of Shri Rajiv Gandhi aimed at increasing productivity, reducing costs and improving quality. The accent was on opening the domestic market to increased competition and readying our industry to stand on its own in the face of international competition. The public sector was freed from a number of constraints and given a larger measure of autonomy.

Government has decided to take a series of initiatives in respect of the policies relating to the following areas.
A. Industrial Licensing.
B. Foreign Investment.
C. Foreign Technology Agreements.
D. Public Sector Policy.

E. MRTP Act.
A package for the Small and Tiny Sectors of industry is being announced separately.

A. Industrial Licensing Policy
Industrial Licensing is governed by the Industries (Development & Regulation) Act, 1951. The Industrial Policy Resolution of 1956 identified the following three categories of industries: those that would be reserved for development in the public sector, those that would be permitted for development through private enterprise with or without State participation, and those in which investment initiatives would ordinarily emanate from private entrepreneurs. Over the years, keeping in view the changing industrial scene in the country, the policy has undergone modifications. Industrial licensing policy and procedures have also been liberalized from time to time. A full realization of the industrial potential of the country calls for a continuation of this process of change.

B. Foreign Investment
While freeing Indian industry from official controls, opportunities for promoting foreign investment in India should also be fully exploited. In view of the significant development of India's industrial economy in the last 40 years, the general resilience, size and level of sophistication achieved, and the significant changes that have also taken place in the world industrial economy, the relationship between domestic and foreign industry needs to be much more dynamic than it has been in terms of both technology and investment. Foreign investment would bring attendant advantages of technology transfer, marketing expertise, introduction of modern managerial techniques and new possibilities for promotion of exports. This is particularly necessary in the changing global scenario of industrial and economic co-operation marked by mobility of capital. The Government will, therefore, welcome foreign investment which is in the interest of the country's industrial development.

C. Foreign Technology Agreements
There is a great need for promoting an industrial environment where the acquisition of technological capability receives priority. In the fast changing world of technology the relationship between the suppliers and users of technology must be a continuous one. Such a relationship becomes difficult to achieve when the approval process includes unnecessary governmental interference on a case to case basis involving endemic delays and fostering uncertainty. The Indian entrepreneur has now come of age so that he no longer needs such bureaucratic clearance of his commercial technology relationships with foreign technology suppliers. Indian industry can scarcely be competitive with the rest of the world if it is to operate within such a regulatory environment.

D. Public Sector Policy
The public sector has been central to philosophy of development. In the pursuit of our development objectives, public ownership and control in critical sectors of the economy has played an important role in preventing the concentration of economic power, reducing regional disparities and ensuring that planned development serves the common goods.

It is time therefore that the Government adopt a new approach to public enterprises. There must be a great commitment to the support of public enterprises which are essential for the operation of the industrial economy. Measures must be taken to make

these enterprises more growth oriented and technically dynamic. Units which may be faltering at present but are potentially viable must be structured and given a new lease of life. The priority areas for growth of public enterprises in the future will be the followings:

- Essential infrastructure goods and services.
- Exploration and exploitation of oil and mineral resources.
- Technology development and building of manufacturing capabilities in areas which are crucial in the long term development of the economy and where private sector investment is inadequate
- Manufacture of products where strategic considerations predominate such as defense equipment

At the same time the public sector will not be barred from entering areas not specifically reserved for it.

E. Monopolies and Restrictive Trade Practices Act (MRTP Act)

The principal objectives sought to be achieved through the MRTP Act are as follows:-

i. Prevention of concentration of economic power to the common detriment, control of monopolies.
ii. Prohibition of monopolies and restrictive and unfair trade practices.

F. Decisions of Government
A. Industrial Licensing Policy
Procedural Consequences
B. Foreign Investment
C. Foreign Technology Agreements
D. Public Sector
E. MRTP Act

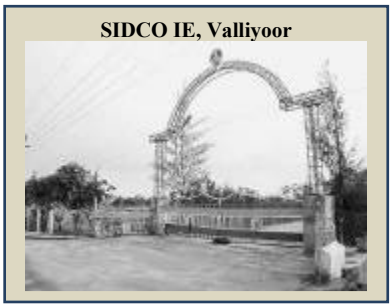
List of industries reserved for the public sector

1. Arms and ammunition and allied items of defense equipment, Defense aircraft and warships.
2. Atomic energy.
3. Coal and lignite.
4. Mineral oils.
5. Mining of iron ore, manganese ore, chrome ore, gypsum sulphur, gold and diamond.
6. Mining of copper, lead, zinc, tin, molybdenum and wolfram.
7. Minerals specified in the Schedule to the Atomic Energy (Control of Production and Use) Order, 1953.
8. Railway transport.

Industrial Estates - The Concept

The Concept

The term "industrial estate" is often used interchangeably with industrial district, industrial park, industrial zone, special economic zone, eco-zone etc. An Industrial Estate (IE) is a self contained geographical area with high quality infrastructure facilities, which house businesses of an industrial nature. An industrial estate is administered or managed by a single authority that has a defined jurisdiction with respect to tenant companies. The authority makes provisions for operation and management; enforcing restrictions on tenants and planning with respect to lot sizes, access and utilities. The IEs offer industrial, residential and commercial areas with developed plots/ pre-built factories, power, telecom, water, sanitation and other civic amenities such as hospital, sewerage and drainage facilities, security etc.The main targets of Industrial Estates are the high value adding small and medium scale industries, which do not have the wherewithal to invest in developing their own basic infrastructure facilities, but have the capacity to pay for the services provided to them. Hence, Industrial Estates are regions where infrastructure facilities are provided for and thus a conducive environment is created to attract small and medium scale industries. Advantages of Industrial Estates Industrial Estates can positively influence the socio-economic development and industrialization of the region by:


SIDCO IE, Valliyoor

• Attracting investments
• Generating employment
• Leveraging on raw material sources, skilled manpower resources, proximity to end-use markets, etc.
• Adding to and improving social infrastructure in terms of healthcare and educational facilities Industrial Estates have led to the development of large urban regions especially in the States wherein large-scale city/ town development has taken place. Bharuch, Vapi and Valsad in Gujarat and Nashik and Nagpur in Maharashtra are examples of such developments.

Industrial Estates can be developed either as a:

• General Industrial Park (GIP) which caters to all types of industries, an example of the GIP being the Industrial Model Township at Manesar (Haryana) which has facilities to house different types of industries like auto and auto components, high precision industries, textiles, pharmaceuticals, software etc. or
• Special Industrial Park (SIP) which focuses on a specific industry like software, textiles, plastics, etc. The Software Technology Park at Whitefield in Bangalore is one such example

Industrial Estates – The Issues Involved

Location

One of the most important factors contributing to the success of an industrial estate is its location. The main criteria that should be considered while deciding the location of an Industrial Estate are as follows:

Natural competitive advantage of the region
Potential for forming industrial clusters in the region to ensure the economic viability of Industrial Estates
Presence of transportation nodes in the region in the form of airports, railway terminals and road networks both from raw material sources and to end-use markets
Presence of technological research institutions and training facilities such as universities, colleges, etc., which would add value to the growth of these Estates
Fiscal incentives applicable for setting up the Industrial Estate in a particular region
Proximity of the region to important markets
Proximity of the region to important raw material sources
Connectivity of the region to other regions
The formation of industrial clusters would in turn, make the Industrial Estates commercially viable. As is evident, determination of potential location of an industrial estate requires a comprehensive and scientific analysis.

Configuration and Design

Usually, an industrial estate is configured around three zones- the industrial, the residential and the commercial zones.
The industrial zone encompasses industrial units catering to both domestic and export markets
The residential zone provides for housing facilities, and
The commercial zone comprises of support facilities like banks, post office, hospital, shopping centres, clubs etc. While designing an Industrial Estate, a mix of industrial, residential and commercial zones must be kept in mind.

Government's Role and Policies

Promotion of industrial parks was given a boost by the Government of India towards the end of the first five-year plan (1952-57) when the 'Industrial Estates Development Program' was initiated. The role of the Central Government in the establishment and upkeep of Industrial Estates in India has been mainly that of laying down the guidelines for the State Governments. The responsibility for the selection of sites, development of areas, construction of infrastructure facilities etc., has been the mandate of the State Governments.

Private Sector Participation

Private sector participation is being encouraged by all the States to ensure a more commercial approach to the entire exercise of setting up and managing Industrial Estates. Private sector participation would lead to:


IT Park Chennai

A better choice of location, design and infrastructure facilities
Better collection of revenues
Professional and innovative management
Greater accountability and responsibility
Fund mobilization to bridge the infrastructure investment gaps

Institutional Arrangements with Private Participation

So far the Government has been the sole promoting, investing, implementing and operating agency in this sector. Participation of the private sector requires changes in institutional arrangements. This would lead to increase in the number of players and

would encompass:
• The State Government
• A promotional agency set up by the State like the State Industrial Development Corporation (SIDC) or a State Industrial Estate Promotional Authority (SIEPA)
• The Private Sector
• Financial Institutions

Land Acquisition
Land acquisition is considered to be a major hindrance in setting up any industrial estate on account of two main reasons:
• Inability to acquire contiguous land due to reluctance of some owners to sell the land
• Problems in fixing the compensation price of the land

Sustainability
The quality of Infrastructure of the Industrial Estates is India is deteriorating, thereby defeating the purpose of their creation. Sustainability of the Industrial Estates is therefore becoming an important issue, with the State Government finding it difficult to maintain the infrastructure facilities in these estates. Deterioration of infrastructure facilities affects the performance of the industrial units, which in turn affects the revenue source for the estates. Hence, a vicious cycle is created, leading to the failure of the industrial park.

Fiscal Concessions
Tamilnadu --Industrial Development

TOTAL POPULATION

	Total population in Million	
YEAR	TAMILNADU	INDIA
1941	26.27	318.66
1951	30.12	361.09
1961	33.69	439.23
1971	41.20	548.23
1981	48.41	683.33
1991	55.86	846.30
2001*	62.11	1027.02

* Provisional

DENSITY OF POPULATION (Per Sq. Km)

YEAR	TAMILNADU	INDIA
1941	202	103
1951	232	117
1961	259	142
1971	317	177
1981	372	216
1991	429	267
2001*	478	324

* Provisional

State Industries Promotion Corporation of Tamilnadu Limited

The key areas of **TANSIDCO**'s activities are as follows:
Development of industrial estates with infrastructure facilities and provision of work sheds & developed plots.
Raw Materials Supply Scheme Marketing Assistance Scheme
Export Assistance Scheme Guidance to Entrepreneurs

Industrial Parks & Complexes

INDUSTRIAL PARKS & COMPLEXES

Govt. of Tamilnadu has promoted more than 120 Industrial Parks/Estates all over Tamilnadu. Developed Industrial plots endowed with sound infrastructure support like, water supply, electricity, road link, communication facilities etc. besides social amenities are available to investors. Further, Govt. of Tamilnadu provides an attractive package of incentives to investors locating their projects in these Industrial estates/parks.

Industrial Parks - Supply analysis

Integrated Industrial Parks (IIPs) concept originated with "Guindy Industrial Estate" in 1956.

Tamilnadu has at present:

SIDCO Industrial estates
SIPCOT Industrial complexes
TACID growth centres & parks
Chennai Export Processing Zone (MEPZ)
Co-operative Industrial estates
Dte. of Industries industrial estates
Many private Industrial estates.

Total area developed so far: about 15,000 acres.

State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT) was established in the year 1971, under the Companies Act. The main objective of the Corporation is to promote medium and large scale Industries in Tamil Nadu. SIPCOT is striving to achieve the objective through the following activities:

(a) Developing, Marketing and Maintaining Industrial Complexes / Parks and Growth Centers;

(b) Implementing Infrastructure Development Schemes.

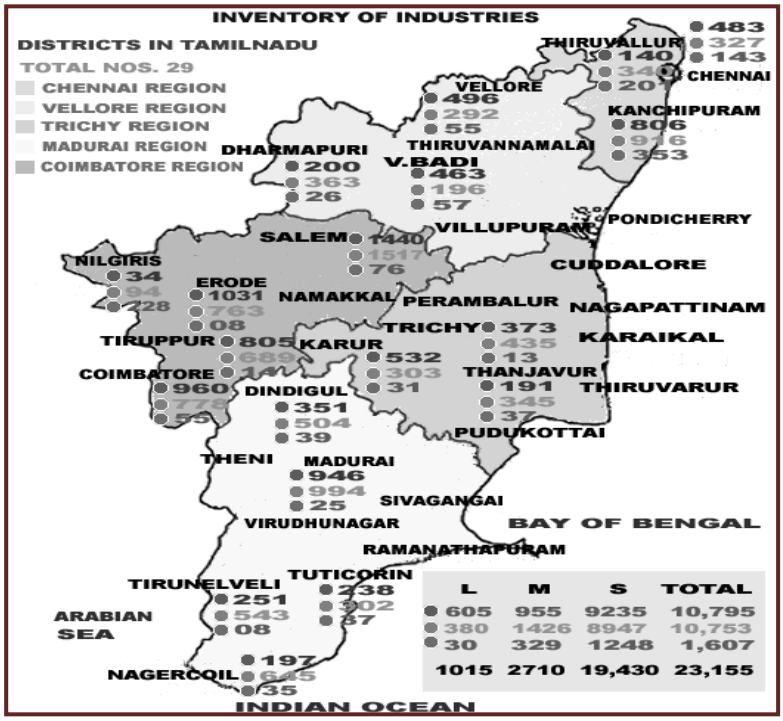
The details of area acquired, developed and sold upto 31.3.04 are given below -

	In acres
Total area acquired	21,343.73
Total allottable area	15957.29
Total area allotted	6,764.26
Number of units allotted	1,131
Area Development expenditure incurred so far	Rs.31645 lakhs.

I. SIPCOT Industrial Complex / Parks/Growth Centres:

The Corporation has developed 17 Complexes/Parks/Growth Centres in 12 districts in Tamil nadu. The locations and area of the complexes are given below:

S.N	Location of complex/park/growth centre	Name of District	Area in acres
1.	Ranipet	Vellore	1663.97
2.	Hosur	Krishnagiri	2410.71
3.	Pudukottai	Pudukottai	421.10
4.	Manamadurai	Sivagangai	492.07
5.	Gummidipoondi	Tiruvellore	1257.08
6.	Thoothukudi	Thoothukudi	2707.86
7	Cuddalore Cuddalore Industrial Park	Cuddalore	712.27 1266.00
8	Irungattukottai	Kanchipuram	1843.68
9	Sriperumbudur	Kanchipuram	2469.00
10	Siruseri (Information Technology Park)	Kanchipuram	980.00
11	Nilakottai	Dindigul	386.21
12	Bargur	Krishnagiri	1348.00
13	Export Promotion Industrial Park, Gummidipoondi.	Tiruvellore	224.11
14	Perundurai	Erode	2751.98
15	Gangaikondan	Tirunelveli	2038.33
16	Oragadam	Kanchipuram	2043.00
17	Cheyyar	Thiruvannamalai	631.00



II. Infrastructure Development Activities in industrial estates:

Infrastructure Rank of Tamilnadu in India.

* Social Infrastructure	Second
* Physical Infrastructure	Third
* Proximity to Port	Second
* Airport Facilities (Network)	Second
* Labour Availability	Second
* Cost of Labour	Second
* Labour Relations	Second
* Proximity to Market	Third
* Availability of Raw Material	Third
* Power availability & Cost	Third
* Road Transport Infrastructure	Second

SIPCOT is implementing the following special infrastructure development schemes:

(A)Govt.of India Schemes:
Food Park, Nilakottai, Dindigul district:

SIPCOT is promoting a Food Park in the SIPCOT Industrial Complex at Nilakottai over an extent of 100 acres at a cost of Rs.13.00 crores.

Apparel Park-Irungattukottai, Kanchipuram district:
SIPCOT is developing an Apparel Park in association with Apparel and Handlooms Exporters Association (AHEA). The cost of the project is Rs.24.00 crores.

Development of Coir Cluster and Leather Cluster:
SIPCOT will facilitate development of critical infrastructure for leather and coir industries by combining the funds of the Government of India and the beneficiary bodies under Public-Private partnership. The project proposals for development of the Leather Cluster at Ambur and Coir cluster covering Salem and Dharmapuri districts have been forwarded to Govt.of India for approval.

(b)Govt.of Tamilnadu Schems:
Eco-Entreprises Park, Nilakottai, Dindigul district.
SIPCOT has set apart 50 acres in the SIPCOT Industrial Complex at Nilakottai to establish an Eco Enterprises Park at a cost of Rs.5.00 crores. The Eco Enterprises Park is conceived to promote industries in the field of herbal, horticulture, bio - technology and renewable sources of energy.

Integrated Knowledge Industry Township at Siruseri Information Technology Park
In line with announcement made in the budget 2003-04, SIPCOT had identified M/s Lee Kim Tah Holdings Ltd, a consortium of Singapore Companies to develop an Integrated Knowledge Town Ship with in the Information Technology Park (ITP) Siruseri near Chennai.

Hazarduous Industrial Waste Disposal Project at Melakottaiyur in Kancheepuram District.
A suitable site of 68.92.0 hectares has been identified in Melakottiyur, Kanchipuram district.

Existing Industrial Estate Upgradation:
SIPCOT will improve the infrastructure in the select industrial estates which have high potential for investors, involving the Industries Association in the management of the estates on a participatory basis.

Economic Reforms - Tamilnadu
- ✓ Abolition of industrial licensing, except in few 'strategic sectors'
- ✓ Foreign Direct Investment up to 100% allowed in most sectors under the 'Automatic Route'
- ✓ Rationalization of both indirect and direct tax structure
- ✓ Portfolio investments by foreign institutional investors
- ✓ allowed in both equity and debt markets
- ✓ Rupee made fully convertible on trade account
- ✓ Removal of quantitative restrictions on imports
- ✓ Financial sector reforms and decontrol of interest rates
- ✓ The Fiscal Responsibility and Budget Management (FRBM) Act enacted in 2003

Institutions Associated with Industrial Development in Tamilnadu
Director of Industries & Commerce
Chepauk, Chennai - 600 005

Electronics Corporation of Tamilnadu Limited (ELCOT)
692, MHU Complex, Anna Salai, Nandanam, Chennai - 600 035
Industrial & Technical Consultancy Organization of Tamilnadu Ltd. (ITCOT)
50-A, Greams Road,Chennai - 600 006
Tamilnadu Small Industries Development Corporation Ltd. (SIDCO)
SIDCO Office Complex, Paulwels Road, Kathipara Junction, Chennai - 600 016
State Industries Promotion Corporation of Tamilnadu Limited (SIPCOT)
19-A, Rukmani Lakshmipathy Salai, Chennai - 600 008
Small Industries Service Institute (SISI)
65/1, GST Road, Chennai - 600 032
Tamilnadu Adi Dravida Housing Development Corporation Ltd. (TAHDCO)
TNHB Shopping Complex, Thirumangalam, Chennai - 600 101
Tamilnadu Corporation for Development of Women Ltd.
No.100, Anna Salai, Guindy, Chennai - 600 032
Tamilnadu Industrial Development Corporation Ltd. (TIDCO)
19-A, Rukmani Lakshmipathy Salai, Chennai - 600 008
Tamilnadu Industrial Guidance and Export Promotion Bureau (Guidance)
19-A, Rukmani Lakshmipathy Salai, Egmore, Chennai – 600 008.