Regional Planning & Development
Paper-II (INDIA)

~ Balanced regional growth is necessary for the harmonious development of a federal State such as India. India however presents a picture of wide regional variations, in terms of various economic and social indicators. Relatively speaking some States are economically advanced while others are relatively backward. Even within each State, some regions are more developed while others are almost primitive. The co-existence of relatively developed and economically depressed States and even regions within each State, is known as regional imbalance.

Indicators of Regional Imbalances :-

The development profile globally and nationally is underlined by wide social and spatial inequalities. It has been established beyond doubt that growth does not automatically trickle down as there are strong socio-economic, geographical or territorial constraints that need to be included in the development discourse. Aggregative indicators of developments must be supplemented by socially and territorially disaggregated indicators that could help in understanding the dynamics of development (or underdevelopment) better.

For example, one can say that India has made good progess on the field of educational enrolment at the primary stages, but it is also

there that there are social groups such as schedule tribes and castes who in spite of having registered increase in enrolment stand away behind the average enrolment rates. The primary objective of development indicators as it may vary depending upon the context, is to generate and innovate information tools in quantitative and qualitative terms to critically examine who gets what, where and how.

Indicators of Development Suggested by various Committees on Regional Backwardness :-

Planning Commission Study Group (1966-1971)

- total pop & density of pop
- Nos of workers engaged in agriculture including agricultural labourers as % of total workers
- Cultivable area per agricultural worker
- Net area sown per " "
- % of gross irrigated area to net sown area
- % of area sown more than once to net sown area
- per capita (rural pop) gross value of agricultural o/p
- Nos of workers per lakh of population employed in registered factories
- Mileage of surfaced roads
- Nos of commercial vehicles registered in a district.
- % of literate population
- % of school going children
- No. of seats per million pop for technical training
- Hospital beds per lakh of population.

Pande Committee :- (1968)

The first attempt to identify 'backward areas' was made by the 'Committee for Industrialisation of Backward Regions" (Pandey Committee) and on the basis of its recommendation backward areas were classified into several catagories : desert areas, chronically drought affected areas, hill areas including boarder areas, areas with high density of population and low level of income and employment.

According to this committee the indicator for selecting a backward region must include :-

- Total per capita income.
- Per capita income for industry and mining.
- Number of workers in registered factories
- Per capita annual consumption of electricity.
- Length of surfaced road in relation to pop & area of the state
- Railway mileage " " " " " " " " "
- Poverty as indicated by low per capita income starting from the lowest to 25% below the State average
- High population density in relation to utilisation of productive resources and employment opportunities.

Wanchoo Committee Report :- The Wanchoo committee was second working group appointed by NDC in 1968 to make a careful study of the issue of regional imbalance.

The committee recommended the following fiscal incentives for industries set up in backward areas -

i) Grant of higher development rebate
ii) Exemption from income tax including corporate tax for five years after providing the development rebate.
iii) Exemption from import duties on plant, machinery, and components
iv) Exemption from excise duties for 5 years -
v) Exemption from sales tax both on raw material and finished products for five years from the date of going into production
vi) Grants of transport subsidy for the dispatch of finished products for five years, in areas of difficult communication.

Pandey Comm (1968)
Wanchoo "
Sukhamoy Chak (1972)

Sukhamoy Chakravarty Committee :-

The erstwhile Planning Commission constituted a committee headed by Prof Sukhamoy Chakravarty in 1972, but it could not submit its final report. It observed, "the approach to the identification of backward areas has to be based on a set of what may be called partial indicators of development and underdevelopment. Only such indicators should be chosen which will best express relative variations in development among various area units." After examining comparable data available at the district level, the following variables were chosen for the analysis.

a) Density of pop per sq. km of area
b) % agricultural workers to total working force
c) Gross value of o/p of foodgrains per head of rural pop.
d) Gross value of o/p of all crops " " " " "
e) % of total establishment using electricity to total number of establishments (manufacturing and repair)
f) % of household establishments using electricity to total household establishments.
g) % of non household establishments using electricity to total household establishment.
h) No. of workers in registered factories per lakh of population
i) Length of surfaced roads per 100 sq. kms. of area
j) " " " " " lakh of population.
k) % of male literates to male population.
l) % of female " to female "
m) % of total " to total "

National Committee on the Development of Backward Areas :- The NCDBA was appointed by Planning Commission in 1978, under chairmanship of : B. Sivaraman. It recommended that the primary unit for identification of backward areas should be the development block. The committee recommended that the following types of problem areas should be treated as backward for the purpose of planning —
a) Chronically drought prone areas
b) Desert Areas
c) Tribal Areas
d) Hill Areas
e) Chronically flood affected areas
f) Coastal areas affected by Salinity.

The Criteria used by the Comm, include the following :-

Indicators of Social infrastructure :-
- No. of primary schools
- % of female literates
- No. of primary health/sub centres.
- No. of community health workers
- Infant mortality rate.
- % of villages having portable water supply.

Indicators of economic infrastructure :-
- % of villages with pucca roads
- No. of railway stations
- % of villages electrified
- % of villages with post offices
- Bank branches per lakh population
- Cropping intensity - Value of o/p per hectre
- % of villages engaged in non-agricultural activities

Inter-ministrial task group on redressing growing Regional imbalances :- (2005)

The preferred strategy of this task group had been different from earlier committees as it had a preferred a bottom up approach rather than a top down one. In its words "our focus is on creating a Backward Districts Fund, integrated with a district level budget / plan developed from below, through a system of village plans based on perceived needs and real capacities of backward areas."

It has considered the following parameters for selection of backward regions :-

(i) Unequal Resource Endowments :-

× Natural resources are distributed unevenly across the country giving some areas a natural advantage over others in terms of the scope for higher incomes, employment possibilities and more sustainable livelihoods. (1) Relevant indicators used to measure resource availability relate mainly to agricultural and mineral resources. Availability cannot be the sole criterion. (2) level of exploitation and ease and cost of exploitation are equally important.

(ii) Uneven Human Development :-

(1) Income : Variables considered are
- Preponderance of agricultural labourers in pop.
- level of agricultural wages.
- O/p per agricultural worker.
- Per capita credit and deposits

(2) Health: Variables considered are
- Infant mortality rate
- Crude death rate
- Full immunisation and institutional delivery are considered to be the most imp parameters.

(3) Education:
- Female literacy rate
- Gross enrolment ratio

(iii) Inadequate Infrastructure:-
- % of household without electricity
- % of rural household with drinking water sources at a distance greater than 500 meters
- % of household not availing bank services.

(iv) Poor Budgetary Resources:- The size and adequacy of revenue resources can severely constrain the capacity of govt to provid basic amenities to citi

For Reducing regional Imbalances:-

The committe emphasized into
- Centrally Sponsored Schemes
- Non plan transfer recommended by Finance comm
- Assistance from the Planning Commission.

Apart from these it suggested to set up a Backward District Grant Fund, to ensure that there is focus on less developed parts within states, even those that are otherwise considered developed.

Integrated Rural Development Programme (IRDP):-

The Integrated rural development programme signifies a programme for improving the living standards of the poorest of the poor living in rural areas and for making the process of rural development self-sustaining. Initiated in 1978-79, the programme has extended to all development blocks in the country in 1980-81.

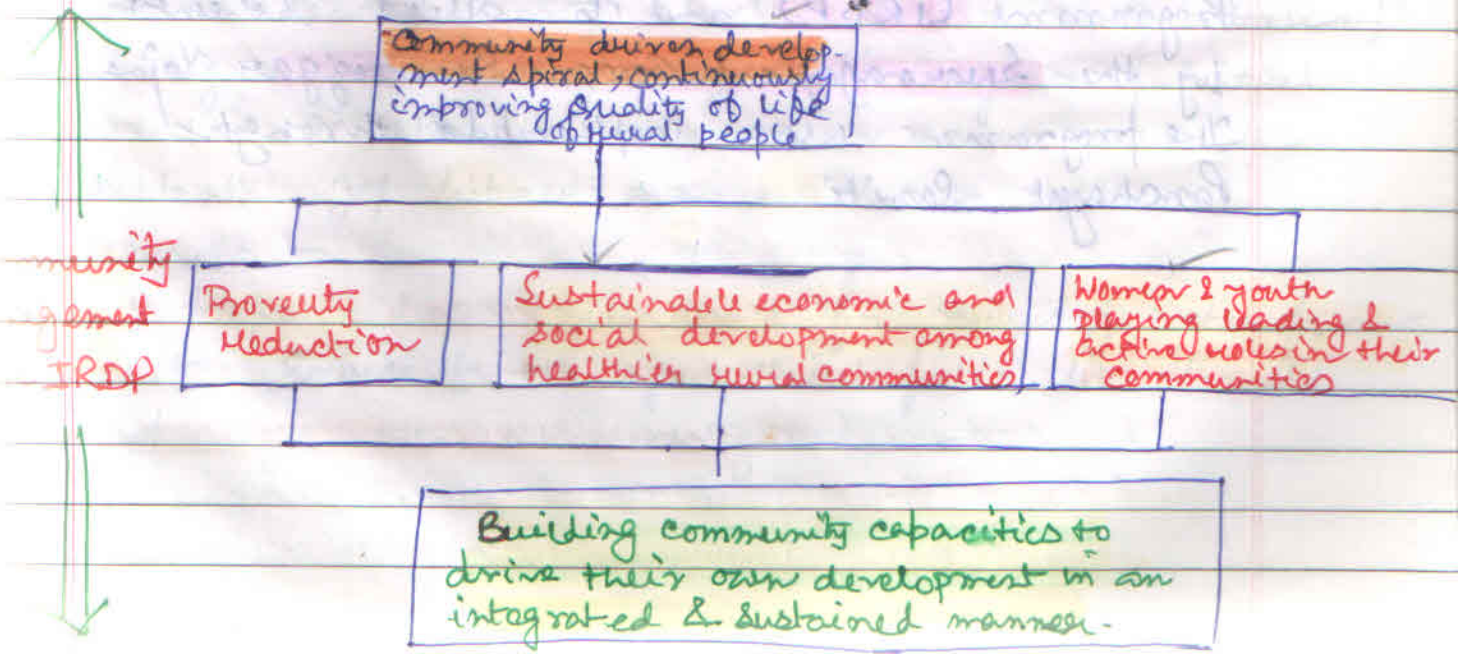
The main objectives of the programme were —

i) To provide assistance in self-employment opportunities.

ii) To give assistance to a target group of rural poor, belonging to the families below the poverty line, in the form of subsidy. The target group under IRDP includes labourers, artisans, scheduled castes, scheduled tribes, share croppers, marginal & small farmers.

iii) To take up measures for livestock and poultry development, fishery and social forestry in the village.

iv) To promote cottage industries in the village to enhance the per capita income of the targeted group and to raise the standard of living of weaker sections of the rural pop.



The Integrated rural Development Programme was implemented through District Rural Development Agencies (DRDAs) and Block level Agencies at the grass-root level. [The governing body of DRDAs include MPs, MLAs, Chairman of Zila-Parishad, Heads of District Development Departments, representatives of Scheduled Castes and Scheduled Tribes and Women.]

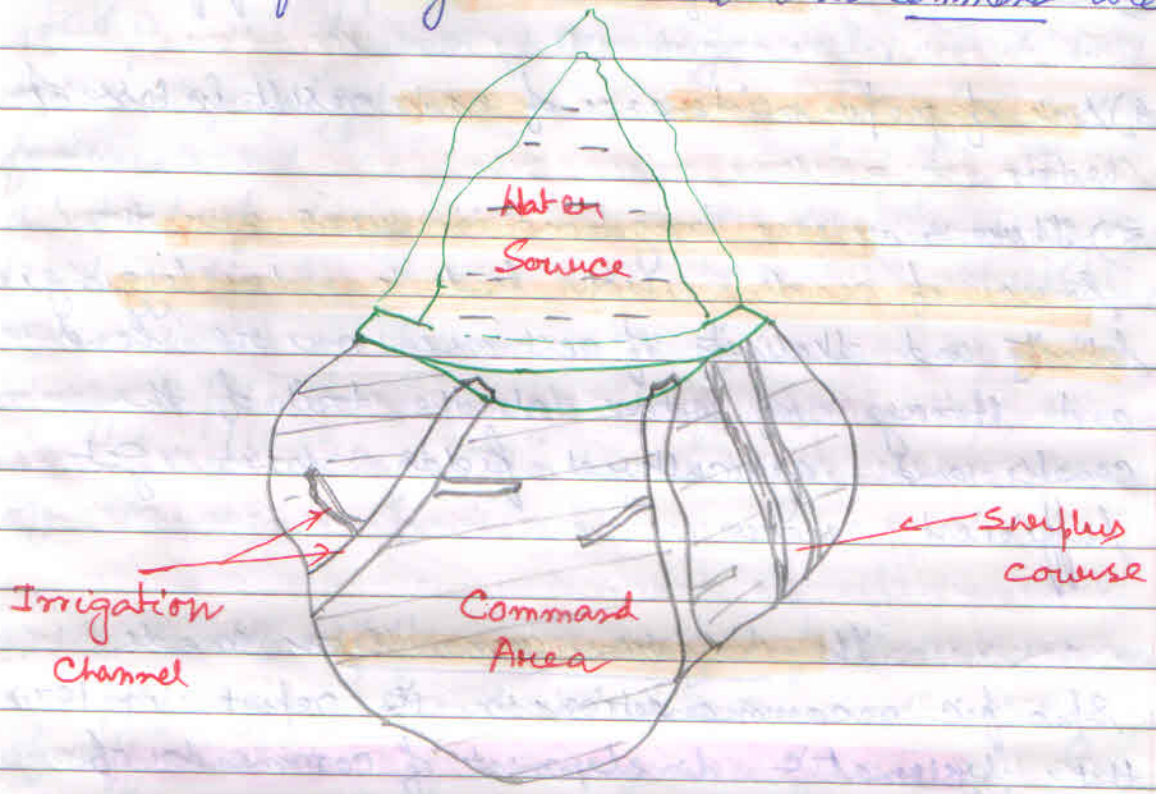
Some of the important integrated rural Development Programme includes -

- National Rural Development Programme (NRDP)
- National Rural Employment Programme (NREP)
- Minimum Need Programme (MNP)
- Training of Rural Youth for Self-Employment (TRYSEM)
- Development of Woman & Children in Rural Areas (DWCRA)
- Council for Advancement of People Action and Rural Technology (CAPART)
- Indira Awaas Yojna (IAY, 1985)

In 1999, government of India launched a restructured poverty alleviation programme for rural areas which replaced the Integrated Rural Development Programme (IRDP) and its allied schemes by the Swarnajayanti Gram Swarozgar Yojna. The programme was implemented through Panchayat Samiti

Command Area Development :

An area ~~reserved~~ covered by canals, wells, tube wells, tanks etc. for irrigation is known as command area.



The area which can be irrigated from a scheme and is fit for cultivation is known as cultivable command area.

During the post-independence a large number of irrigation projects were constructed for increasing agri production in the country. However during early seventies analysis of irrigation potential created & utilised revealed that there was a substantial gap between them, due to various reasons -

1) proper basic structures for carrying water from its source to the agricultural fields like channel, drainage etc. was lacking.

2) There was lack of proper agricultural system according to the ecological conditions

3) There was lack of awareness on part of farmers

4) Lack of proper maintenance of canals result in loss of water.

5) There was over irrigation in areas near the source of canals which leads to water logging, salinity and alkalinity of near area on one hand. and storage of water at the tail of the canals and agricultural fields donot get sufficient water.

The irrigation commission made specific recommendation in its report in 1972 that systematic development of commands of irrigation projects should be taken up in order to fully utilise the irrigation potential created. Subsequently, based on the recommendation of a committee of ministers set up by the then Ministry of irrigation and Power, a centrally sponsored Command Area Development Programme (CADP) was started in 1974-75 by GOI. to improve irrigation potential utilisation and optimise agricultural production from irrigated land through integrated and coordinated approach of efficient water management.

This prog. is implemented by Area Development Authority. Specialists from different departments work under this authority which makes

it easy to achieve the fixed targets.

Following are the main objectives of this programme:-

1) Influential farmers with large expanses of land at their disposal get the maximum benefit of irrigation facilities and a small and marginal farmers are often deprived of irrigation facilities which they rightly deserve. Warabandi was introduced to solve this problem. It is a rotational system which assures equitable and timely supply of water to all farmers irrespective of the size of their holdings. This prog. is implemented with the help of Panchayat Samities.

2) Construction of field channels and field drains to reduce the pilferages and mis-use of water and making sure of effective use of water for irrigation.

3) Land has to be levelled so that water is spread uniformly in the agricultural fields.

4) Giving proper shape to fields and their boundaries through consolidation of holdings so that the objective of optimum utilisation of water is achieved. Simultaneously provision of Chak roads is also essential.

5) Educating farmers thru demonstrations and imparting technical training for adopting new agricultural innovations and adopting cropping pattern according natural environment as well as improving farming practices and maintaining fertility of soil.

6) Preparing plan for supply of inputs, credit, seeds, fertilisers, insecticides and pesticides to the farmer.

7) Promoting ancillary activities such as animal husbandry, forestry, poultry, marketing and processing facilities.

8) Updating land records

9) Diversifying agriculture to make it more profitable.

10) To lay more emphasis on the cultivation of more remunerative crops like oil-seeds, pulses, green manure crops

11) To use ground water for compensating the shortage of surface water

12) Reclamation of the water-logged, saline and alkaline areas rendered uncultivable due to over irrigation by canals

13) To introduce participatory management of irrigation.

The Command Area Development Programme was restructured and renewed as Command Area Development and Water Management (CAD & WM) with effect from ~~2nd~~ April 2014. During XII th five year plan the scheme is being implemented as Water Management programme - 'Pariyassu' and Accelerated Irrigation Benefits Programme (AIBP).

Command Area has 3 components:-

a) Soil and land management

b) hydrology & channel management

c) Crop management.

The National water Policy, 2002, stresses on participatory approach in water resources management. There is a great realisation of the fact that participation of beneficiaries greatly enhance the optimal use of irrigation facilities and proper use of irrigation water. The participation of farmers in the management of irrigation would give responsibility for operation and maintenance, collection of water charges from the areas under the jurisdiction of Water Users Associations and redressal of petty grievances.

Reports from various states reveal that the CAD programme has made positive impact on some important indicators like increase in irrigated area, productivity and production, irrigation efficiency etc. In spite of all these efforts the problem of water logging has been reported in many irrigated commands.

Pradhan Mantri Krishi Sinchayee Yojana :-

Government of India is committed to accord high priority to water conservation and its management. To this effect Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) has been formulated with the vision of extending the coverage of irrigation 'Har Khet ko pani' and improving water use efficiency 'More crop per drop' in a focussed manner. [It aims to deliver end to end solution on source creation, distribution / management, field application and extension activities.] x

The major objective of PMKSY are as follows -

i) to achieve convergence of investments in irrigation at the field level.

ii) to expand cultivable area under assured irrigation

iii) improve on farm water use efficiency to reduce wastage of water. (drip, Sprinkler)

iv) enhance the adaption of precision-irrigation and other water saving technologies (More crop per drop)

v) Enhance recharge of aquifers and introduce sustainable water conservation practices by exploring the feasibility of reusing treated municipal waste water for peri-urban agriculture

vi) Attract greater private investment in precision irrigation system.

PMKSY has been conceived amalgamating ongoing schemes viz. Accelerated Irrigation Benefit Programme [(AIBP) of the Ministry of Water Resources, River Development & Ganga Rejuvenation (MOWR, RD & GR)], Integrated Water Shed Management Programme (IWMP) [of Department of Land Resources (DOLR)] and the On Farm Water Management (OFWM) [of Dept. of Agriculture and Co-operation (DAC)]. The Scheme will be implemented by Ministry of Agriculture, Water Resources & Rural Development.

Ministry of Rural Development is to mainly undertake rain water conservation, construction of farm pond, water harvesting structures, small check dams and contour building etc.

MOWR, RD & GR is to undertake various measures for creation of assured irrigation source, construction of diversion canals, field channels, water diversion / lift irrigation, including development of water distribution system

Ministry of Agriculture will promote efficient water conveyance and precision water application devices like drips, sprinklers, pivots, rain gun in the farm ('Jal Sinchan'), construction of micro irrigation structures to supplement source creation activities, extension activities for promotion of scientific moisture conservation & agronomic measures.

PMKSY will adopt 'decentralized state level planning and projected execution, based on District Irrigation Plan and State Irrigation Plan. It will operate as a convergence platform for activities including drinking water and sanitation, MGNREGA, application of science & technology etc. State Level Sanctioning committee (SLSC) chaired by Chief Secretary of the State will be vested with authority to oversee its implementation and sanction projects.

The prog. will be supervised and monitored by an Inter-Ministerial National Steering Committee (NSC) will be constituted under chairmanship of PM with union ministers from concerned ministries. A National Executive Committee (NEC) will be constituted under the Chairmanship of Vice Chairman, NITI Aayog

INDIRA GANDHI CANAL COMMAND AREA DEVELOPMENT PROGRAMME :-

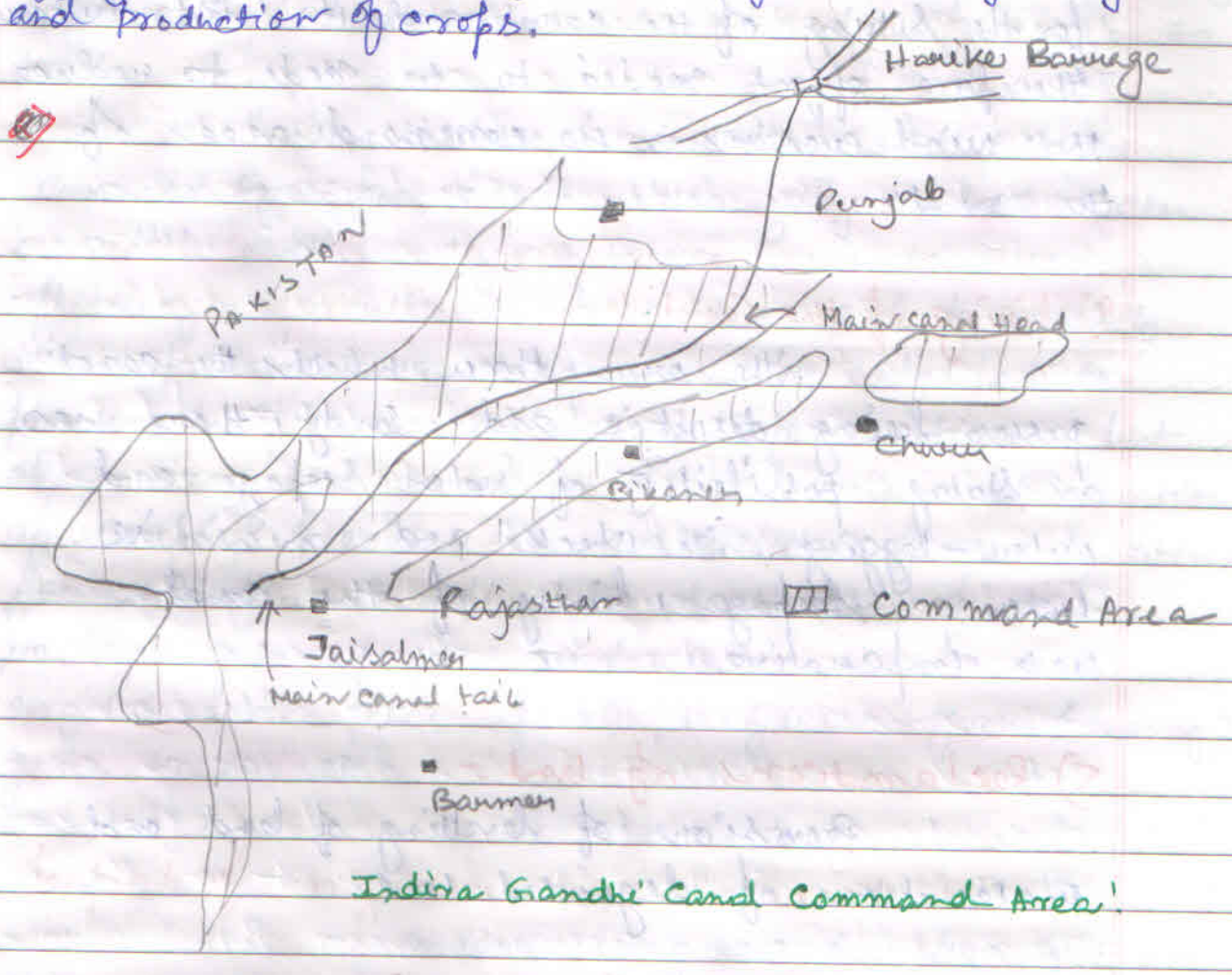
Indira Gandhi Canal Project is a living example of man's effort to transform a desert land into a green land of prosperity. It is one of the largest canal systems of the world. The command area is located in dry desert lands of Ganganagar, Bikaner, Jaisalmer, Barmer, Jodhpur, and Churu district in Rajasthan. It stretches over 23,725 sq. km having 525 kms length along the international boundary between India and Pakistan.

The canal originates from Harike Barrage near the confluence of Satluj and Beas Rivers in Ferozpur in Punjab. The canal does not do any irrigation in Punjab and known as Rajasthan feeder.

The head of the main canal is located near Masitanwali in Hanumangarh District. The tail is located near Mohangarh in Jaisalmer district. The command area of the canal is further extended till Gadra Road in Barmer District.

The command Area Development was introduced in INDIRA GANDHI CANAL COMMAND Area in 1974. The main objectives of this Command areas are to provide a holistic development effort for all stakeholders. The importance of command area development is more important in a desert region because of the following regions :-

1) To reduce water Pilferages of Canal Water :- The wastage of water results not only in under utilisation of water, but also leads to water logging and soil salinity, affecting adversely the yield and production of crops.



Indira Gandhi Canal Command Area.

2) Development of Social Amenities and Infrastructural Facilities :- Since the Indira Gandhi Canal Command Area was newly colonised, there was an urgency to provide civic amenities and infrastructural facilities to supply the necessary agricultural inputs to the farmers. Emphasis, therefore, was laid on the construction of roads, markets and storage facilities to enhance agricultural production.

3) Control of Wind Erosion :-

There was a serious menace of wind erosion in the Indira Gandhi Canal Command Area which was a potential danger for the silting of the canal and its distributaries. Therefore effort needed to be made to reduce the wind erosion in the command area of the canal.

4) Lining of the Canal :-

The area three which the canal passes being desertic and sandy, there was a strong possibility of water seepage and water-logging. To check and minimise water seepage, lining of the canal was imperative

5) Reclamation of land :-

Provision of levelling of land and reclamation of degraded land.

6) Afforestation and Pastures Development :-

Afforestation along the bank of the canal, its distributaries as well as along the new rural and urban settlements to stabilise the sand dunes. The migratory sand dunes not only damage the arable land and pastures but may also bury the orchards and settlement under sand.

7) Availability of Agricultural inputs :- Availability of modern agricultural inputs including ensuring supply of HYV seeds, chemical fertilizers, insecticides and pesticides and providing agricultural extension and training facilities to the farmers.

Implementation of the Indira Gandhi Canal Command Area has helped in bringing the land under irrigation rapidly, increase in water use efficiency, agricultural production and productivity. The improvement in irrigation not only led to phenomenal increase in agri production, but also introduced change in the pattern and rotation of crops. Due to the availability of canal water, farmers have adopted the cultivation of wheat, barley, groundnut, mustard, orchards and vegetables in place of Bajra, greeen-gram (Moong), gwar, Millets etc

Impact of irrigation on environment :-

Whereas irrigation has increased the agri production tremendously, it has resulted in environment degradation in the form of water logging and soil salinity. The ground water table is rising at an alarming rate of 0.8 meter per year in most parts of Stage I. About 25% of land under the command area near Ghaggar basin is critical area as the ground water level in this area is less than 6 meters below surface level. In a large part of the command area in Stage-I, soil salinity has arisen because of water logging and the presence of salt in the soils. This has adversely affected the soil fertility

and agri productivity.

This problem is more serious in the command area of Stage-II, where irrigation was introduced in mid-eighties. This part of the command area is underlain by hard pan of calcium carbonate and clay at a depth of few meters which causes pauched water table, water logging.

Measures for Promotion of Sustainable Development :-

The ecological sustainability of Indira Gandhi Canal project has been questioned by various scholars. These point of view has also been largely validated by the course of development this region has taken during the last four decades, which has resulted in degradation of physical environment. It is a hard fact that attaining sustainable development in the command area requires major thrust upon the measures to achieve ecological sustainability. Hence five of the seven measures proposed to promote sustainable development in the Command area are meant to restore ecological balance -

i) The 1st requirement is strict implementation of water management policy. The canal Project envisages protective irrigation in Stage-I and extensive irrigation in Stage-II.

ii) In general, the cropping pattern shall not include water intensive crops. It shall be adhered to and people shall be encouraged to grow plantation crops such as citrus fruits.

iii) The CAD programmes such as lining of water courses, land development and levelling and warabandi system (equal distribution of canal water in the command area outlet) shall be effectively implemented to reduce the conveyance loss of water.

iv) The areas affected by water logging & soil salinity shall be reclaimed.

v) The eco-development through afforestation, shelter belt plantation and pasture development is necessary, particularly in the fragile environment of Stage-II.

vi) The social sustainability in the region can be achieved only if the land allotees having poor economic background are provided adequate financial and institutional support for cultivation of land.

vii) The economic sustainability in the region cannot be attained only through development of agriculture and animal husbandry. The agricultural and allied activities have to develop along with other sectors of economy. This shall lead to

diversifications of economic base and ~~establishment of economic base and~~ establishment of functional between basic villages, agro-service centres and market centres.

NOTE :- The command area of Stage-I lies in Ganganagar, Hanumangarh and northern part of Bikaner districts. It has a gently undulating topography and its cultivable command area is 5.53 lakh hectres.

The command area of Stage-II spread over Bikaner, Jaisalmer, Barmer, Jodhpur, Nagaur and Churu districts covering cultivable command area of 14.10 lakh hectares.

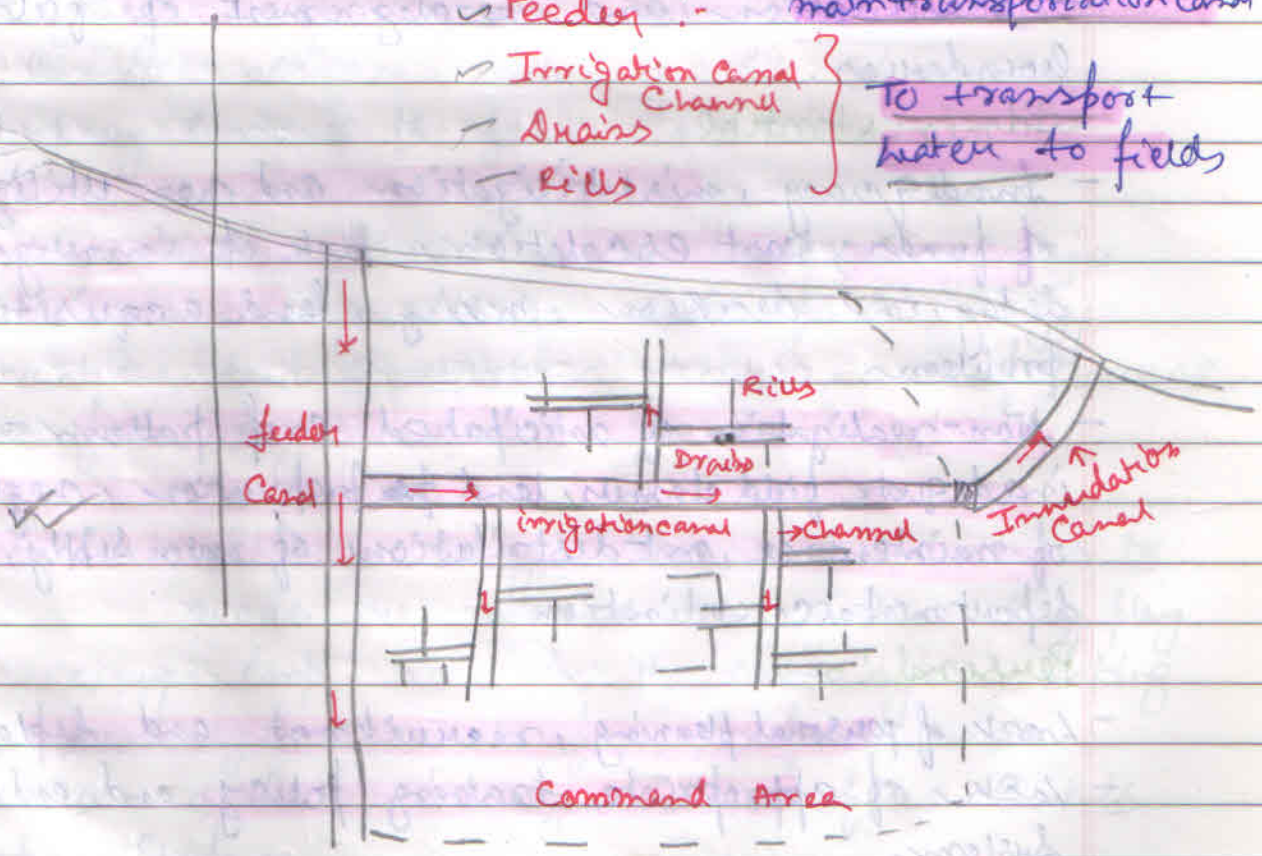
Command Area Development Prog. had two division :-

a) On firm development Project :- Soil preparations, Soil testing, Crop selection, soil Conservation and management, construction of channels and drains, crop management prog, use of modern inputs & technology, mechanisation prog, building construction of unmetalled roads for tractors, harvestors to reach the field.

b) Off firm development prog. :- Agricultural marketing, development of infrastructure, Rural electrificat, MSPs, subsidies, agri credits, training & awareness]

- Feeder :- main transportation canal
- Irrigation Canal / Channel
- Drains
- Rills

} To transport water to fields



Inundation Canal :- To remove extra water.

Problems in Command area Project :-

Legal :-
- on farm development requires legislation on re-alignment of farm boundaries, land leveling and land Shaping.
- implementation of appropriate cropping patterns requires legislative support
- Uniform legislation regarding irrigation control and regulation of groundwater is required to be enacted.

Technical :-
- Salinity problem and its control
- Seepage from canals
- Problems of water distribution at the tail end of canal
- Consolidation and re-alignment of field boundaries.

Administrative :-
- Inadequacy, misutilization and non-utilization of funds; cost escalation, lack of investigation, delay in decision making, land acquisition problem
- Non-realization of anticipated crop pattern - inadequate field channels, land preparation, neglect of maintenance, mal distribution of water supply, lack of departmental co-ordination.

Personal :-
- Lack of personal planning, recruitment and deployment.
- Lack of appropriate training policy and extension System.

Q What is a River? Where do river begin? What do Rivers provide?

A river is fresh water flowing across the surface of the land, usually to the sea. It flows in a channel. The bottom of the channel is called the bed and the sides of the channel are called banks.

Rivers begin in mountains or hills, where rain water or melting snow collects and forms tiny streams called gullies. Gullies either grow larger when they collect more water and become streams themselves or meet streams and add to the water already in the stream. When one streams meets another and they merge together, the smaller stream is known as a tributary. It takes many tributary streams to form a river.

Most settlements were built along major rivers. Rivers provide us with food, energy, recreation, transportation routes, and of course water for irrigation and for drinking!

Water :- Rivers carry waters and nutrients to areas all around the earth. They play a very imp role in the water cycle, acting as drainage channels for surface water. Rivers drain nearly 75% of the Earth's land surface.

Habitats :- Rivers provide a habitat and food for many of the Earth's organisms; their powerful forces create majestic scenery.

Transport :- Rivers provide travel routes for exploration, commerce and recreation.

Farming :- River valleys and plains provide fertile soils. Farmers in dry regions irrigate their cropland using water carried by irrigation ditches from nearby rivers.

Energy :- Rivers are an imp energy source. During the early industrial era, mills, shops and factories were built near fast-flowing rivers where water could be used to power machines. Today steep rivers are still used to power hydroelectric plants and their water turbines.

Watershed :-

Watershed refers to the geohydrological unit of planning which includes the service region of the river & its various streams till their common drainage point. Thus watershed is a common geomorphic unit, which include hydrological and ecological aspects of the catchment area and river basin. Watershed is a holistic concept, which includes not only the physiographical and environmental but also human ecology of the region. It integrates the land, the water, vegetation and the human of that area and watershed management refers to the conservation and protection of the three vital resources - Land, water and forest in a region.

It comprise of a catchment area (Recharge zone), a command area (Transition zone) and a delta area (Discharge zone)

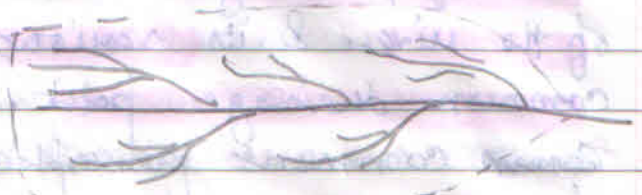
There are 2 types of watershed

1) Fan shaped :-

This is due to dendritic pattern of the network of streams. They have high density of streams and higher Stream order. Also known as rear Circular pattern.

2) Fan Shaped (or elongated):

The rivers with rectangular pattern of drainage network generally have fan shaped watersheds.



Peninsular rivers, Vindhyan rivers, watershed of Narmada are example of this catagory.

The All India Soil and Land Use Surveys (AIS & LUS) of Ministry of Agriculture, GOI, have finalised a nationwide system of delineation of watersheds -

i) Basin
ii) Catchment
iii) Sub-catchment
iv) Watershed.

The usually accepted five levels of watershed delineation based on geographical area of the watershed are :-

1) Macro Watershed (>50,000 Hectares)
2) Sub-Watershed (10,000 to 50,000 Hectares)
3) Mille - Watershed (1000 to 10,000 Hectares)
4) Micro - Watershed (100 to 1000 Hectares)
5) Mini - Watershed (1-100 Hectares)

Watershed Management :-

Watershed management is the participatory process of guiding and organizing land use and use of other resources in a watershed for a sustainable provision of desired goods and services to the people without adversely affecting soil and water resources.

Embedded in these concepts is the recognition of the interrelationship among land use, soil and water, the linkages between uplands and downstream areas and the interests of the different stakeholders and water users.

Haryali is a watershed development project sponsored by the central govt, which aims at enabling the rural pop to conserve water for drinking, ~~and~~ irrigation, fisheries and afforestation. The project is being executed by Gram Panchayats with People's participation.

Neeru-Meeru (Water & You) programme (in Andhra Pradesh) and Arravary Pani Sansad (in Alwar, Rajasthan) have taken up construction of various water harvesting structures thru people participation. Tamilnadu made water harvesting compulsory in the houses.

In watershed management there are 3 components -

a) Land management
b) Water management
c) Bio-mass management.

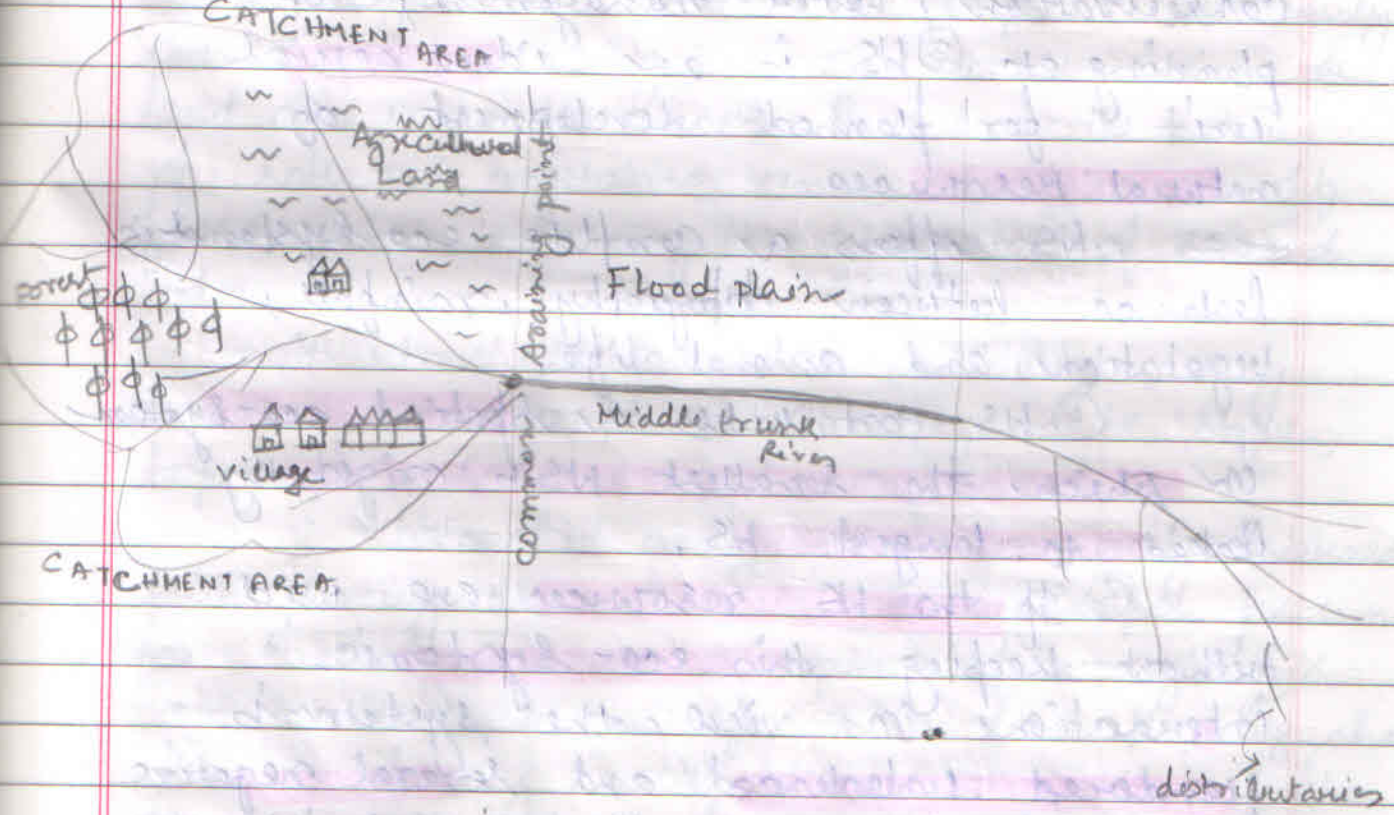
a) Land management :- It includes slope management, prevention of land slides, improving the terrain, improving infiltration & rate of water and land capability. [Watersheds have natural ecosystem like wetlands, grasslands, forested area, higher slopes, uneven topography and relief. Thus construction of contour bunds, contour terraces, contour trenches, channel walls, stream bank stabilisation are various methods of land management].

b) Water Management :- Water harvesting, recharging the acquifers, storage of water in natural tanks, river channels, managing the inflows like precipitation, ground flows, and the outflows like the running water. [It includes — Rain water harvesting, maintenance of water balance, controlling water pollution, optimum utilisation of water, and recharging the ground water.].

c) Biomass Management :- Conservation of forests, aforestation, reforestation programmes, biomass regeneration, plant protection, Social forestry, conservation of bio-diversity, Soil conservation and management.

It also includes:-

- Capacity development and training (human resource development, community development, institutional development, skill development
- Improving farming systems (Crop management, pasture, fodder development, livestock management)
- Sustainable rural livelihoods (farm and non-farm value addition activities)
- Conflict management (e.g among social groups, between upstream and downstream users)



Structure of Watershed

Watersheds as units of planning have several Advantages:-

① Edaphic changes in soil and vegetation reflect location within the watershed, as the physical features of a basin directly affect the hydrologic characteristics of the streams draining it. ② Watersheds, therefore form the appropriate units for intervention in flood control, navigation, hydroelectric power generation, soil conservation, water management, crop planning etc. ③ WS is an ideal areal unit for planned development of natural resources.

* WS offers a complete eco systematic balance between topography, rainfall, vegetation, and animal life.

④ WS contributes a spatial eco-system in which the smallest WS is originally linked to largest WS.

⑤ If the WS resources are used without keeping this eco-systemic interaction in view, the system is rendered unbalanced and several negative forces do not allow the rebuilding of resources like soil, vegetation etc.

Identification of watersheds for micro-level Planning :-

Watersheds can be different sizes depending upon the order of the stream. For example Cauvery basin - within it there is Kabini basin.

The optimum size of a microwatershed largely depends on the specific emphasis of the development program.

If the program aims at integrated area development as in the case with Drought Prone Area Programme (DPAP), the emphasis is clearly around optimum utilization and conservation of land and water resources. Based on the nature of soil and vegetative cover, surface runoff of the rain water may be quickened of slowed down.

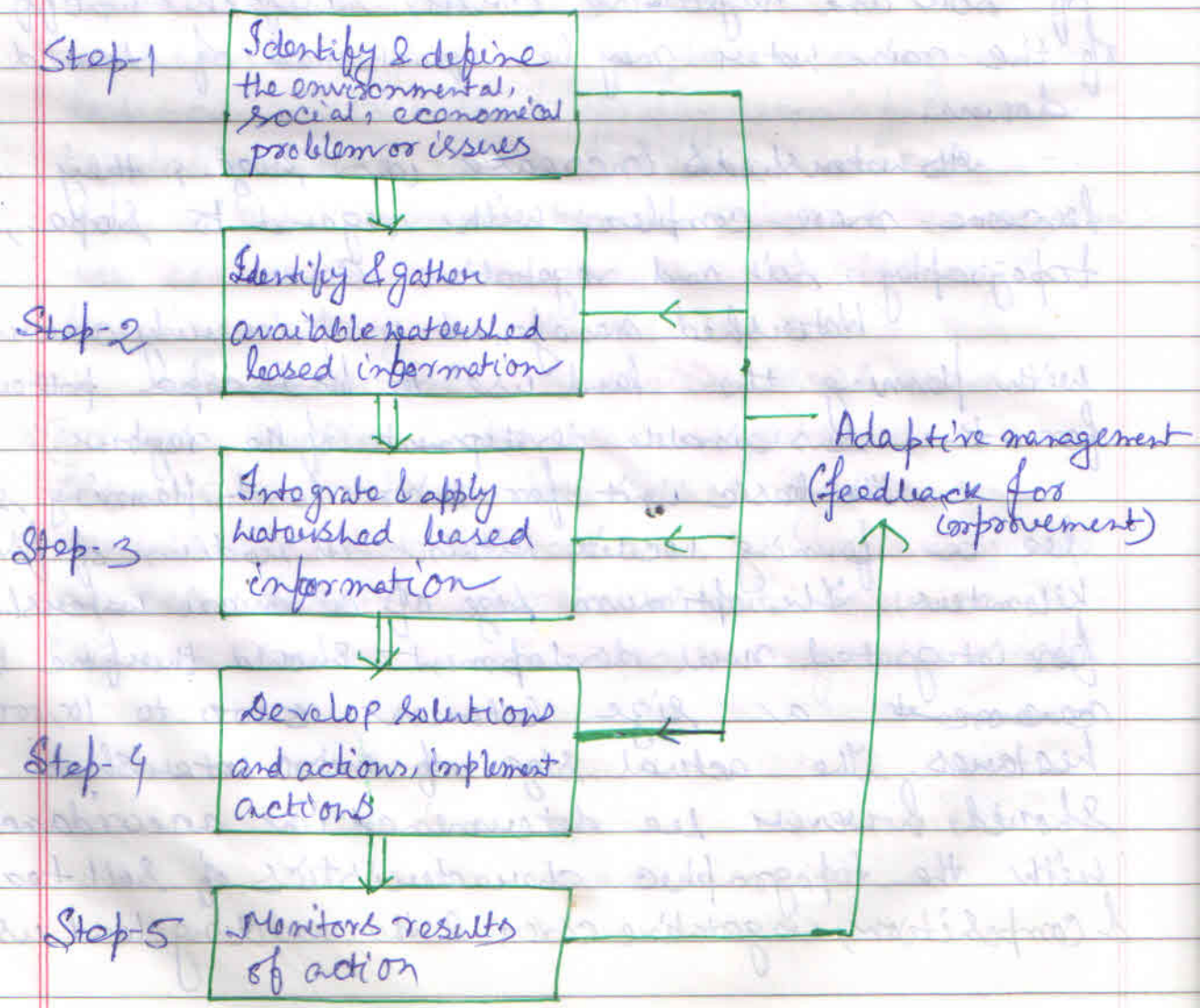
As watersheds increase in size, they become more complex with regard to slope, topography, soil and vegetative cover.

Watershed management is primarily concerned with planning the land use ~~to landscape~~ pattern for the sustainable development of the region.

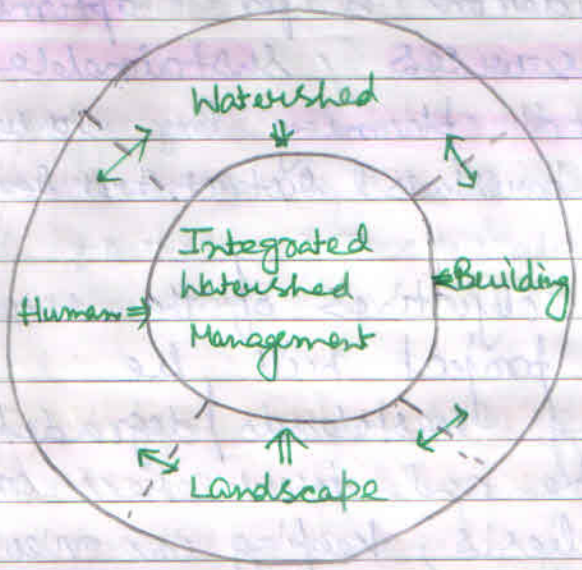
The basic unit for micro-level planning should be a farming locality within a radius of five kilometers. The optimum size of a micro watershed for integrated rural development should therefore be ~~reasonable~~ a size between 5000 to 10,000 hectares. The actual size of micro watershed should, however be determined in accordance with the topographic characteristics of soil texture & composition, vegetative cover & the existing land use.

As the ultimate purpose of the watershed management is to improve the quality of human life, the size of the population should also taken into account while determining the optimum size of the watershed. In areas of high population density, the lower area limit and in the area of sparse pop, the higher area limit, should be the deciding criteria.

Steps in Watershed Planning :-



Integrated Watershed Management Programme (IWMP)



Now renamed as 'Neeranchal' as the watershed components will be of PMKSY, developed with collaboration with World Bank

Development of rainfed / degraded areas through participatory watershed approach is the focal area of the govt of India. [Erstwhile planning commission and National Rainfed Area Authority (NRAA) framed common guidelines, 2008 for watershed programmes for all ministries / Departments {based on Parthasarathy Committee Report, other Committee's observation and past experiences. The provisions in the common Guidelines and the observations of Parthasarathy Committee have necessitated modifications in the watershed Schemes of Department of Land Resources. [Accordingly, Drought Prone Area Programme (DPAP), Desert Development Programme (DDP) and Integrated watershed development Wasteland Development Programme (IWDP) of the department of Land Resources have been

integrated and consolidated into a single modified programme called Integrated Watershed Management programme (IWMP). This consolidation is for optimum use of resources / sustainable outcomes and integrated planning. Prog. will be implemented mainly thru Zilla parishads & District Rural Dev. Agencies.

Objectives:-

The objectives of the watershed development project will be

i) Developing wastelands / degraded lands, drought prone and desert areas on watershed basis, keeping in view the capability of land, site conditions and local needs.

ii) Promoting the overall economic development and improving the socio-economic condition of the resource poor and disadvantaged sections inhabiting the programme areas.

iii) Mitigating the adverse effects of extreme climatic conditions such as drought, and desertification on crops, human and livestock pop for their overall improvement.

iv) Restoring ecological balance by harnessing, conserving and developing natural resources i.e land, water, vegetative cover.

v) Encouraging sustained community action for the operation and maintenance of assets created and further development of the potential of the natural resources in the watershed.

vi) Simple, easy, and affordable technological solutions and institutional arrangements that make use of, and build upon, local technical knowledge and available materials.

vii) Employment generation, poverty alleviation, community empowerment and development of human and other economic resources of the village.

Role of Panchayati Raj Institutions (PRI) :-

i) The programme will be implemented mainly through Zilla parishads and District Rural Development Agencies.

ii) At village level the implementation of the prog. will be carried out out by Gram Panchayat.

Role of Gram panchayat –

a) Community organisation & training programmes
b) Encouraging formation of self help groups & User groups.
c) Operation and maintenance of the assets created during projects.
d) Review and discuss the progress of watershed development programme.
e) provide all information in respect of action plan.

iii) Ensures convergence of various programmes ~~[illegible]~~ of various ministries like Rural development, Education, Agriculture, Health & Family welfare etc.

iv) Capacity building, basic training (involving skill upgradation, and orientation on the technical and organisational aspects of the watershed area.

v) Participatory Rural Appraisal, as a part of confidence building exercise, before finalization of action plan.

vi) Formation of Watershed Association, Watershed committee, and engaging Watershed Secretary and Watershed volunteers

vii) Taking help of various NGOs for Research & development, to adopt low cost technologies, indegenous technical knowledge, monitor and review the overall project implementation and further development of the assets created during the project period.

Impact Assesment Studies of Watershed Projects:-

A study entitled 'Comprehensive Assessment of Watershed Programmes in India" has been assigned to International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Hyderabad to asses the impact of various watershed development programmes in India, which among other things, gave the following report:-

- Soil loss of 1.1 tonne/hectare/year was prevented
- Additional water storage capacity of about 38 hectare metre was created in 9500 hectare watershed.
- The area under irrigation increased by 52% and the cropping intensity increased by 35.5%
- Low income regions were more benefited than high income regions.
- Benefits were more in areas receiving between 700 mm and 1000 mm of annual rainfall with the available technologies
- People's participation produced better result.
- The macro & watershed (area more than 1000 hectares) performs better than micro watersheds (area below 500 hectares)

⊛ Not mentioned in syllabus

Objectives & Functions of River Valley Planning ⊛

1) Promotion and operation of schemes for irrigation water supply and drainage.

2) Generation, transmission and distribution of electrical energy.

3) Flood control

4) Promotion and control of navigation in the river and its tributaries and Channels.

5) Promotion of afforestation and control of soil erosion.

6) Promotion of public health, agricultural, industrial, economic and general well being of the river valley and its area of operation.

The Damodar Valley Corporation :

Flowing thru the states of JH & WB, the Damodar River is 541 km long, also known as Deonadi in its upper reaches. It rises in western JH. in the hills of Chotanagpur and drains areas in the Ranchi / Hazaribagh, Dhanbad & Santhal Parganas of JH & Bankura & Burdwan

districts of WB. After its confluence with Barakar River, it enters WB. Flowing thru Bankura & Burdwan, it finally merges into the Hugli River opposite to Falta. Bokaro, Barakar, Konar are its imp tributaries.

Damodar valley runs thru the middle of Chotanagpur plateau in JH. It lies between the plateaus of Chotanagpur & Hazaribagh in the north and of Ranchi in the south. The Damodar valley is a rift valley or sunken trough, bounded by broken and tilted edges of the plateaus. As there are sudden descents from one level of plateau surface to the other, the whole topography of the surrounding area has an undulating nature. The break points, where tributary streams join the main Damodar river, have provided suitable sites for power houses.

Problems in Damodar Valley :-

The erratic monsoonal rainfall and heavy downpour due to tropical cyclones poses serious problem of floods. The rocks suffer weathering in the hot and humid climate causing much erosion over sandstone and slates. This adds to the load of debris which often chokes the channel and aggravates the flood situation. As soon as the total drainage converges and crosses thru a narrow bottleneck amidst the rocks at Asansol and emerges on the plains near Burdwan, the heavy amount of sediments choking its peak flow is let out open. Thus the R. Damodar

became notorious for its floods and was known as 'Sorrow of Bengal', 'River of Sorrow' or even 'Sorrow of region'. Between 1862 and 1872 floods in Damodar River caused a malaria epidemic and almost one third of the population on the left bank of the river died of what came to be known as 'Burdwan Fever'. The sediments brought by the Damodar create the problem of sedimentation in Hugli, which in turn, endangers the Kolkata Port.

DVC :- In order to control the floods and other related problems, the central govt in consultation with the State govts worked out a unified development project on suggestion of 'Damodar Flood Enquiry Committee'. DVC was established in 1948 to execute Damodar Valley project. The original plan was to construct seven major dams. But DVC has constructed only four dams -

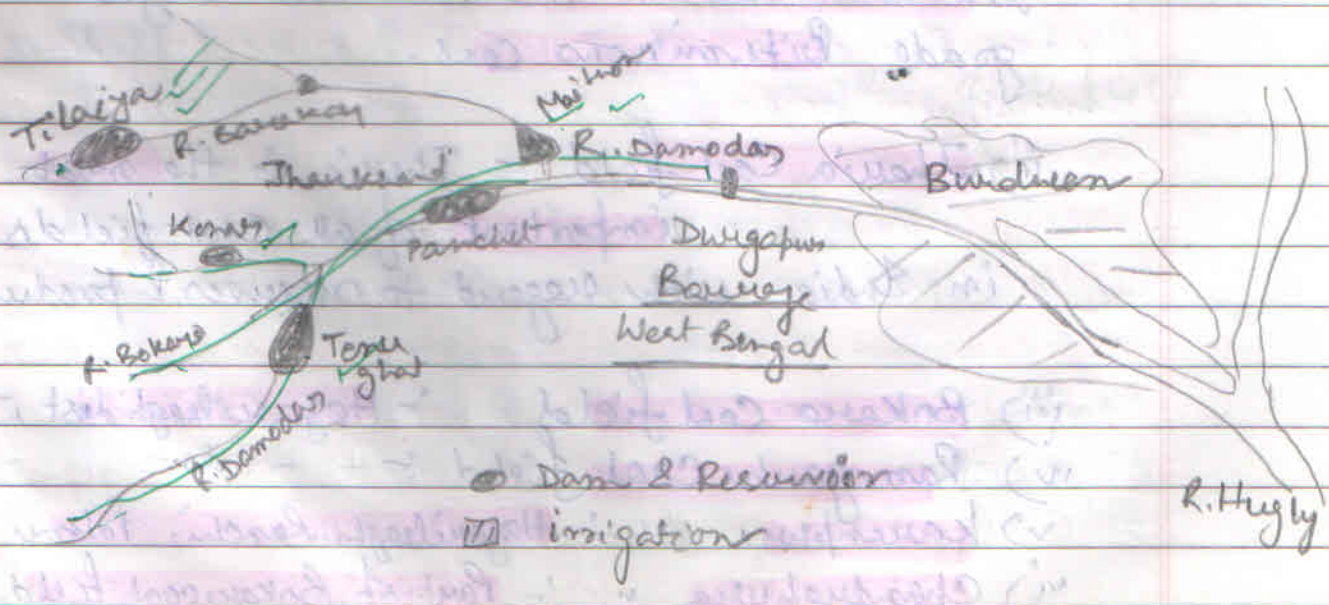
1) Tilaiya - on Barakar river, JH
2) Maithon - on Barakar river, JH (Dhanbad)
3) Konar - on Konar river, Hazaribagh, JH.
4) Panchet Hill Dam - on Damodar, @ Dhanbad, JH

Durgapur Barrage :- for storage of irrigation water.

Benefits from the Project :-

Damodar valley Project is a big landmark in the economic dev. of this region. Following are the main benefits drawn from the project

i) Flood control in the flood prone areas of JH & WB
ii) Irrigation facilities to about 5.15 lakh hectares of land.
iii) Installed capacity of 2,60,000 KW of hydro-electricity at various dam sites.
iv) Check on soil-erosion thru regulated flow of water.
v) Additional land reclamation for agriculture
vi) Navigation in Damodar River, its tributaries & channel
vii) Promotion of Public health thru control on malaria and other diseases as a result of proper drainage of water.
viii) Encouragement to fishing in the reservoir & other water bodies



ix) Promotion of tourism
x) The project has provided a broad industrial base to the area.

Mineral Resource Base :-

The Damodar valley region is the most mineralised region of the Country. As a matter of fact, the Chotanagpur Plateau in which this valley is located is known as the mineral heartland of India'.

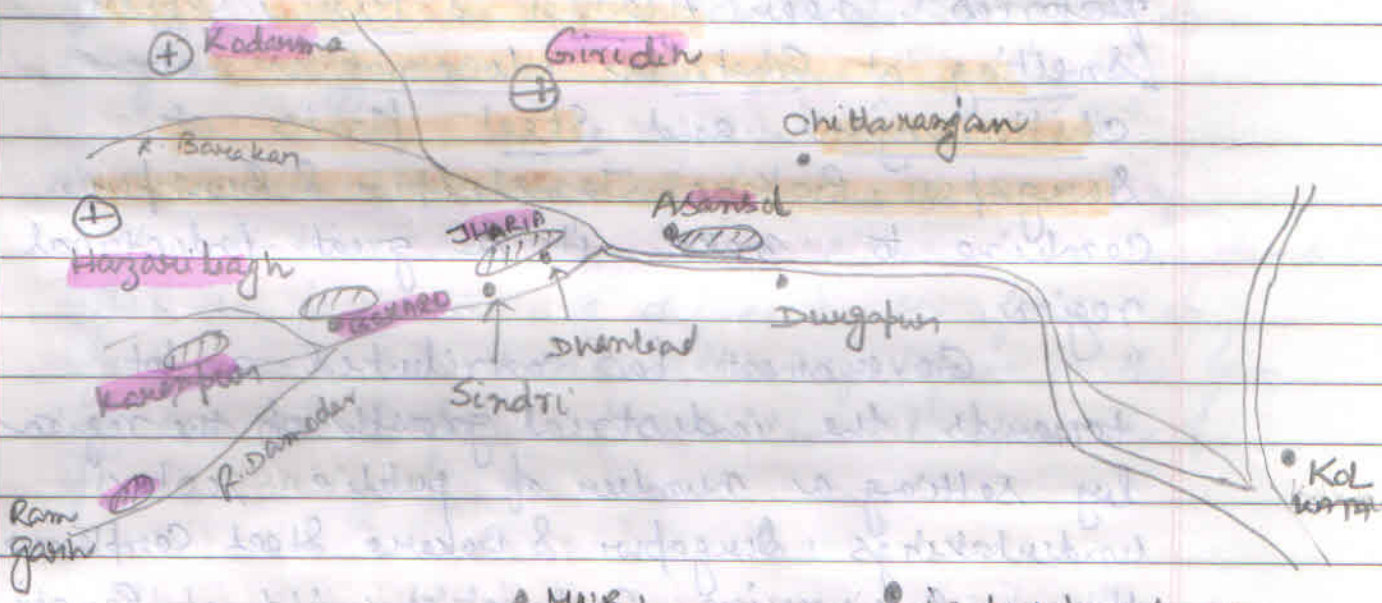
Coal :- The Gondwana sedimentary rocks in the valley contain rich coal deposits. The Damodar valley has about 60% of the country's reserves of medium grade coal and produces about half the output of coal in India.

i) Raniganj Coal-Fields :- spreads of 1500 sq km across Burdwan, Purulia, and Bankura in WB. It has high grade Bituminous coal.

ii) Jharia Coal field :- Jharia is the most important of all coal-fields in India with regard to reserves & production.

iii) Bokaro Coal field :- Hazaribagh dist, JH
iv) Ramgarh Coal field :- - do -
v) Karanpura " :- Hazaribagh, Ranchi, Palamau
vi) Chandrapura " :- Part of Bokaro coal field.

Other Minerals:- Apart from coal this region produces a large variety of other minerals, such as iron-ore, bauxite, copper, lead, mica and manganese. Fire clay is an imp mineral, capable of resisting high temp and a raw material for the manufacture of fire bricks and other refractories. This region produces about 10% of India's total production. Graphite in Dhanbad, sands in Damodar, crystalline limestone in western parts are also imp.



Industrial Development :-

The rich mineral resources of the region have provided a solid base for the rapid and widespread industrialization of the area. The valley is full of large and medium-sized factories. The Sindri fertilizer factory and cement factories at Sindri and Khalari, Coal washeries in Dhanbad, engineering works at Kumardhubi, refractory works at Dhanbad, Asansol, Aluminium factories near Asansol & Muri, Copper smelting at Ghatsila, locomotives at Chittaranjan, and Steel plants at Durgapur, Bokaro, Jamshedpur & Burnpur, combine to make it a great industrial region.

Government has contributed a lot towards the industrial growth of the region by setting a number of public sector undertakings. Durgapur & Bokaro Steel Complexes, Heavy Engineering Corporation Ltd. at Ranchi, Sindri Fertilizer plant and Indian Explosives near Hazaribagh provide some examples.

Six industrial complexes have emerged over time in Damodar Valley Region.

a) Durgapur Industrial complex
b) Asansol - Kulti - Burnpur Industrial Complex
c) Dhanbad - Sindri - Jharia industrial area
d) Bokaro - Chandrapura industrial area

e) Ramgarh - Patratu area with Indian explosives and thermal power plant

f) Ranchi Industrial township with HEC, HMT

Problems of Damodar Valley Region :-

i) The Damodar valley Project was primarily conceived for flood control and this target has not been achieved fully, Heavy floods did occur afterwards, though their ferocity has been much reduced.

ii) Only four dams have been constructed in place of original suggestion of seven dams

iii) The over utilisation of forest and lack of afforestation have aggravated siltation in the dams. Thus the first line of defence in the form of forests and the second line of defence in the form of dams have failed to eliminate the problem of floods all together.

iv) Hydroelectricity is to be supplemented by thermal electricity because the flood-control dams can not be taken as power-generating dams in view of the creation of flood cushion before monsoon every year.

However, the DVC has been an imp example of integrated regional development. Its efficiency can be improved with better management & foresight.

Comparision of Damodar Valley with Ruhr valley :-

There are so many similarities between Damodar Valley of India & Ruhr valley of Germany. Damodar valley produces about 60% of India's coal & Ruhr valley provides 80% of Germany's coal. Both the areas have high level of growth of coal based industries. The other industries are also fairly developed. Transport facilities in the shape of railways, roadways & waterways are abundantly available to both the areas. Looking at these similarities, the Damodar river basin is often called 'Ruhr of India'.

National Capital Region

Delhi, the National Capital of India, has registered a phenomenal growth in pop in the twentieth century, especially after independence. The vast economic opportunities available in Delhi have attracted large number of migrants not only from its immediate neighbourhood but also from the far off places in the country. This large-scale influx of people has put heavy strain on infrastructural facilities of the city which include among other things, housing, employment, transport, electricity, water, sewerage, education, medical treatment etc.

In order to overcome the problems of rapid growth of pop & stresses on infrastructure, the hinterland of Delhi was included in its Master Plan (1962), which is known as National Capital Region (NCR). The National Capital Board was constructed in 1973 to co-ordinate the urban and general development of the National Capital Region.

However, it was only in 1985 that a statutory organisation, named as National Capital Region Planning Board could be instituted through NCPRB Act, with a view to plan, implement, and supervise regional development planning in the NCR.

NCR is a unique example of inter-state regional planning and development with NCT-Delhi as its core. The National Capital Region as notified covers the territorial jurisdiction of National Capital Territory of Delhi, portions of Haryana,

UP & Rajasthan. Sub-region wise area details of NCR are as under:

Haryana : Faridabad, Gurgaon, Mewat, Rohtak, Sonepat, Rewari, Jhajjar, Panipat, Palwal, Bhiwani, Mahendragarh, Jind & Karnal (13 districts)

UP : Meerut, Ghaziabad, Gautam Budha Nagar, Bulandshahr, Hapur, Baghpat and Muzaffarnagar (7 dist)

Rajasthan :- Alwar & Bharatpur (2 dist)

Delhi :- Entire NCT Delhi

Major Problems of the National Capital Region :-

The National Capital Region faced innumerable problem of serious nature. The problems got accentuated during the last sixty years because of unplanned development of the city. Some of the important problems of Delhi are

1. In migration :- The large scale in-migration from both within & outside the NCR
2. Inadequacy of essential services :- The gap between the demand and supply of the essential services like water supply,

power supply, transport, waste disposal, waste treatment & management of solid waste is steadily increasing.

③ Congestion:- The city is becoming congested and there is mushrooming of urban slums.

④ Increasing Employment opportunities:- The job opportunities in Delhi are increasing, which is working as a 'pull factor' and attracting more people from the surrounding areas in to the capital

⑤ Heavy stress on Infrastructure:- There is almost complete collapse of its service infrastructure due to perennial inflow of pop into Delhi

⑥ Deteriorating quality of life:- Rapidly deteriorating quality of life in the National capital is a cause of concern for all the planners.

⑦ Increase in Crime rate:- Crime against property and Crime against women are on increase.

Aims and objectives of National Capital Region Planning Board:-

The aims and obj of NCRPB can be summed up in the following points:-

i) to contain the growing pop of Delhi within the manageable limits thru integrated development of all the components of the NCR.

ii) To divert the pop to ring towns like Faridabad, Ghaziabad, Gurgaon, Sonepat, Narela, Loni, etc.

iii) To re-model the pattern and functional character of the settlement within the NCR thru guided growth so as to enable them to play a constructive and co-operative role in the planned development of the NCR.

iv) To decentralise economic activities through proper development of ring towns and also thru certain checks in the Delhi Metropolitan area

v) To make arrangement for dispersal of industries and decentralisation of public undertakings including govt offices from Delhi to the ring towns

vi) To provide cheap and efficient transportation system for dispersal of pop and economic activities

vii) To accomplish a balanced and harmonious growth of urban and rural component of the NCR.

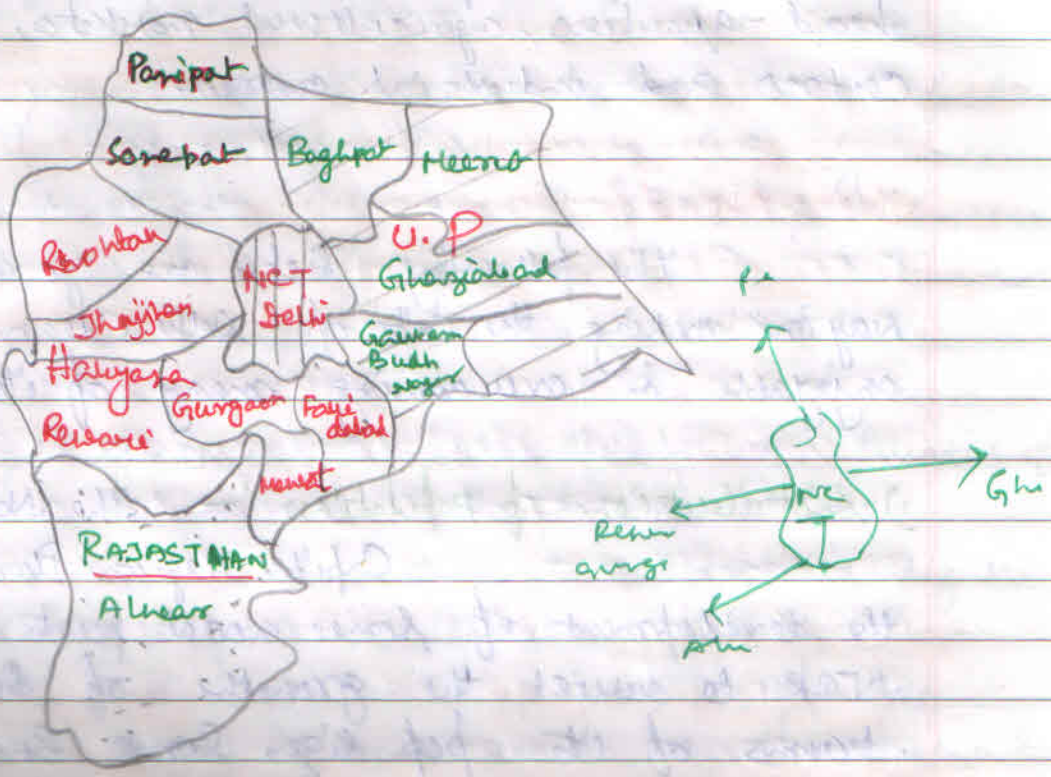
Planning Strategies and Proposal :-

i) To decelerate the growth of Delhi city

ii) To control the growth rate of Delhi Metropolitan area.

iii) To develop regional centres with infrastructure and adequate network of services.

NATIONAL CAPITAL REGION



iv) To bring down the pop growth rate of NCR to 1.2% per anum from the existing 3 to 4% per anum.
v) To diversify the functional character of other towns of the NCR.
vi) To select priority towns and develop them on priority basis for a balanced development of the NCR.
vii) To integrate rural-urban development process within NCR.
viii) To develop selected Regional Centres namely Meerut, Bulandshahr, Panipat, Rewari, Alwar, Khurja Complex, Rohtak, Palwal, Kaithal, Jind etc. to accomodate Delhi-bound potential migrants by creating employment opportunities and the secondary and tertiary sectors in these regional centres.

iv) To develop a number of sub-regional centres at focal points as such divisional head-quarters, agricultural markets, service centres and industrial centres.

Task Ahead :-

The following steps can go a long way in making the city of Delhi clean and enjoyable & overcoming many of its problems.

1) Distribution of Population :- The National Capital Region Plan envisages the development of some nodal points in the NCR to arrest the growth of Delhi in terms of its pop size. Some such nodal points are Meerut, Hapur, Bulandshahar, Khurja, Palwal etc.

2) Dispersal of Economic Activities :- The NCR plan envisages the dispersal of economic activities to ring town to reduce the pressure of pop on Delhi. These activities are location of industries, dispersal of Central Government and Public Sector offices and dispersal of wholesale trade & commerce.

3) Transport Sector :-

Urban transport is one of the key elements of urban infrastructure Realising the fast deteriorating condition of transport

sector, the regional plan for the NCR came out with many specific proposals for transport sector. An integrated road & rail network with last mile connectivity provided by e-rickshaws, autos, cabs, feeder buses are available. The Delhi Metro Rail System, technically known as Delhi Mass Rapid Transport System (MRTS) is the heart of communication between Delhi-Gurgaon-Noida.

4) Development of Urban Infrastructure :- The process of growth and urbanisation has gathered considerable momentum in the NCR during the last five decades and this has put urban infrastructure under severe strain. There is a need to provide uninterrupted supply of clean drinking water, electricity, transport and efficient sewage system.

5) Rural Development :- various strategies and proposal on rural development aimed -
i) to provide more specialised infrastructure and services such as banks, markets etc even in isolated villages
ii) To provide a transport system linking all villages with higher order settlements
iii) to provide marketing facilities for agricultural, dairy and poultry goods in villages
iv) to create job opportunities in non-agricultural sectors in country side & to arrest out migration.
v) to provide infrastructure for vocational education to rural youth.
vi) To promote emergence of community organisation

for participating in the decision making process of regional development programmes of NCR.

6) Employment opportunities :- Three major areas of creating job opportunities identified for the NCR includes –
i) Govt & public sector offices
ii) Wholesale trade
iii) industries.

7) Housing :- Regional plan for NCR grant top priority to the problem of housing and proposes →
i) to identify areas for housing development with proper planning.
ii) To make more land available for urban expansion.
iii) To constitute land use zoning authority.

8) Institutional structure :- Regional plan do not exist in vacuum. These remain utopian ideas unless executed and implemented on time with commitment. Keeping the inter-state ... mind, NCRPB proposes ... Special planning cell for ... ons of NCR ... onitoring unit ... of the progress made in ... the plan and in each

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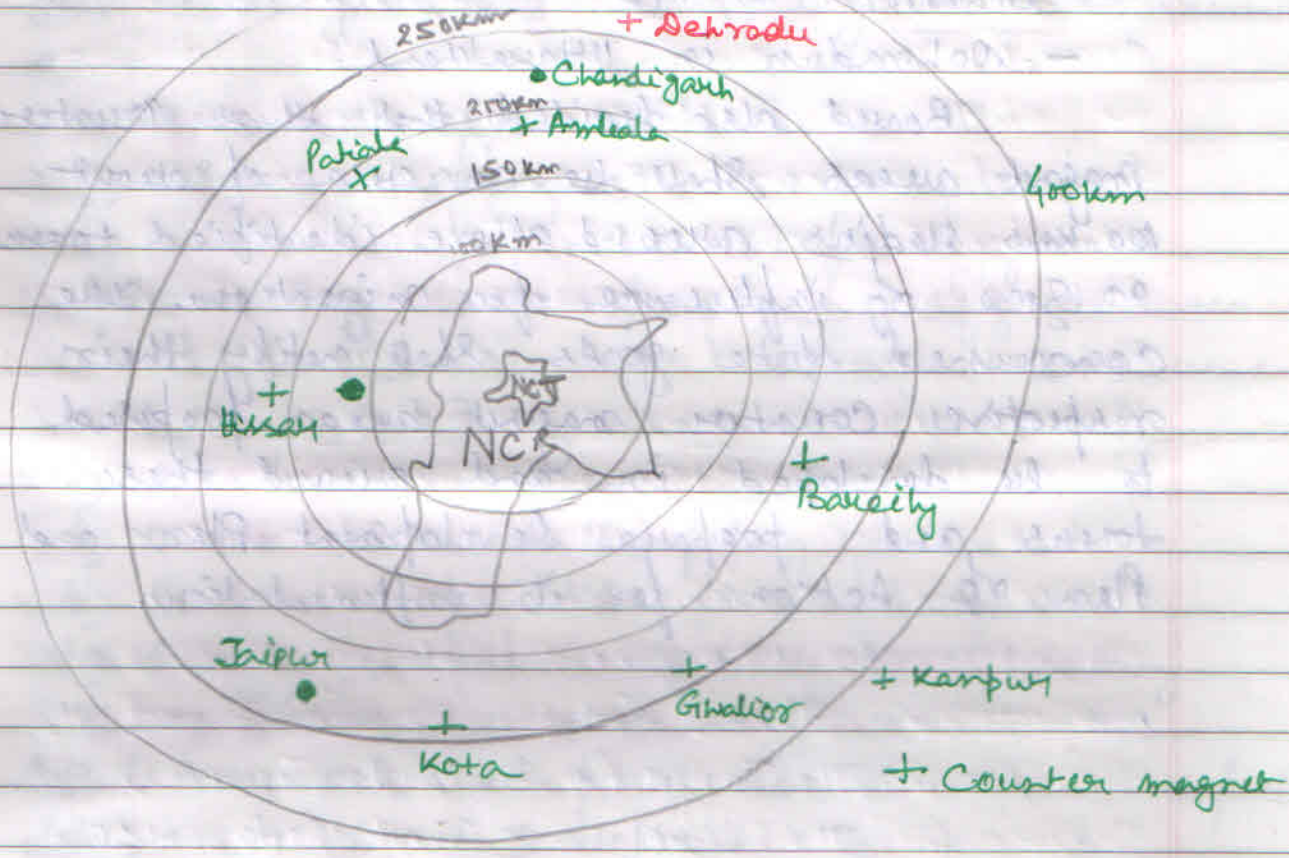
8) Institutional structure :- Regional plan do not exist in vacuum. These remain utopian ideas unless executed and implemented on time with commitment. Keeping the inter-State nature of NCR, in mind, NCRPB proposes
i) The Creation of Special planning cell for each of the Sub-regions of NCR
ii) Creation of monitoring unity
iii) Quarterly review of the progress made in each segment of the plan and in each Sub-region of NCR.

Counter Magnets:

Counter magnet towns are identified as those that can be developed as alternative centres of growth and attract migrants to them rather than Delhi. Promoting growth of counter magnet towns are the principal components of the strategy to reduce both migration and population explosion in the Delhi Metropolitan area.



The NCR planning Board Act, 1985 under section 8(f) empowers the Board to select any area outside the NCR having regard to its location, population and potential for growth as a 'Counter Magnet Area' in consultation with the State government concerned with view to achieve the objectives of the Regional plan.

At present the NCR Planning Board has identified the following nine counter magnet areas to NCR

- Hissar and Ambala in Haryana
- Bareily and Kanpur in UP
- Kotah and Jaipur in Rajasthan
- Patiala in Punjab
- Gwalior in MP
- Dehradun in Uttarakhand.

Board also decided that these counter magnet areas shall be an area of about 120 kms radius around above identified towns as zone of influence for migration. The concerned state govts shall notify their respective counter magnet areas proposed to be developed in and around these towns and prepare Development Plan and Plan of Action for its implementation.

Development of Island Territory

In 1986, on the recommendation of Panth Committee Island Development Authority (IDA) was established, under the chairmanship of Prime minister. But until 2003-04, the project was in cold box. A.B. Vajpayee as PM & Chairman of IDA, revived it. The basic goals were set up by Panth Committee as —

a) Tribal development
b) Resource development
c) Conservation & protection of ecology
d) Developing the prospects of energy resources.

In 2003-04, New dimensions were added —

i) Eco-tourism
ii) Marine resources like fishing.
iii) Biotic resources like forest resources
iv) Energy resources specially the oscillatory water column or wave energy.

Other than resource perspective development aspects like — i) Tribal Development
ii) Coastal management from Tsunami & Tide
iii) forest conservation & management.
iv) Safeguarding or protection of bio-diversity
v) for Lakshwadeep & A&N, protection of choral reef.

India has two groups of islands which are treated as Union Territories. In the Bay of Bengal are the Andaman and Nicobar Island, while the Lakshadweep islands are located in the Arabian Sea.

The Union Territory of Andaman and Nicobar.

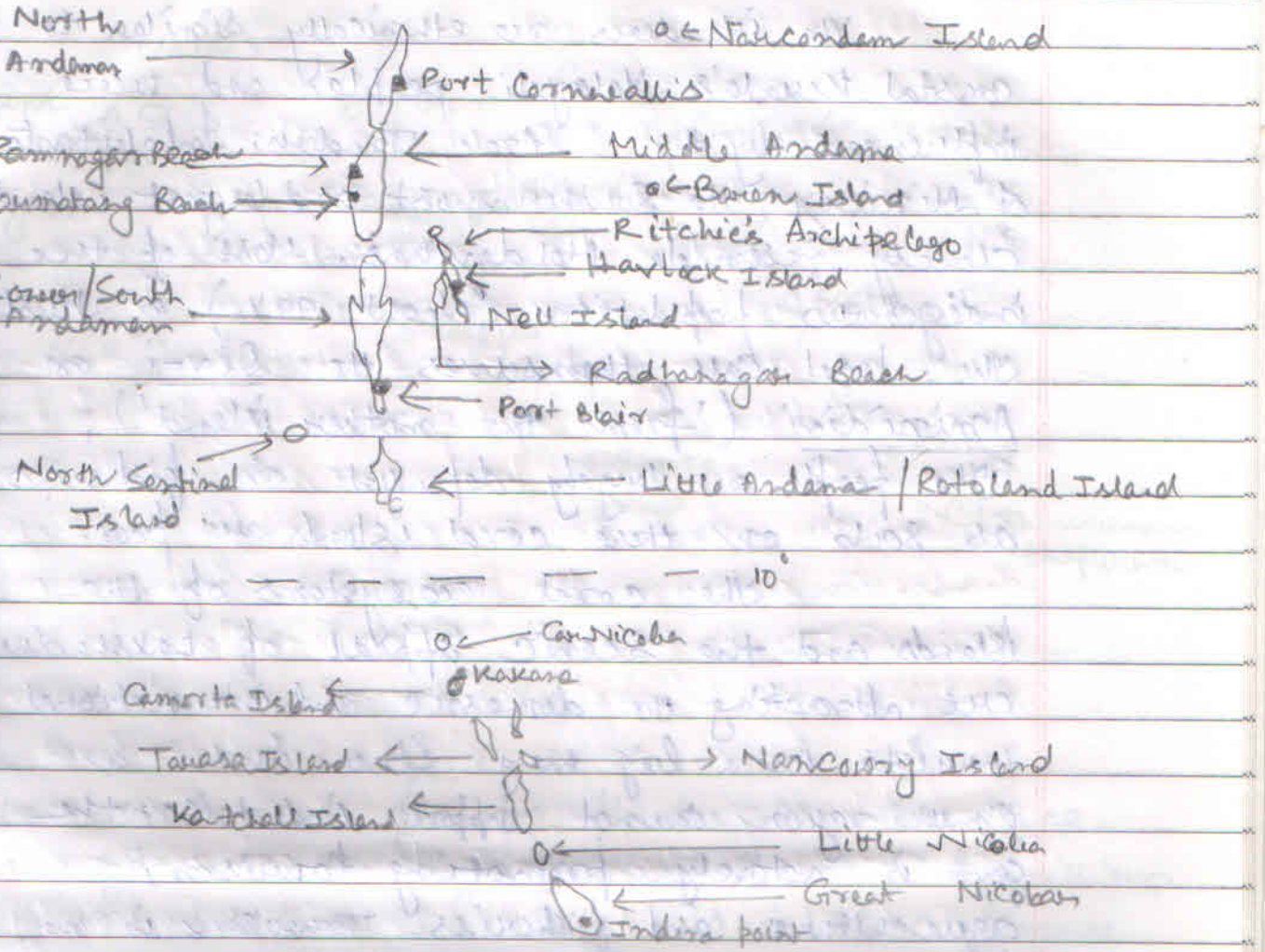
There are 572 islands in the Union Territory of Andaman and Nicobar Islands. Out of these 36 are permanently inhabited. Most Islands are in the Andaman group, 26 of which are inhabited. The Andaman and Nicobar Islands are separated by Ten Degree Channel.

The A & N islands are endowed with tropical rainforest. These forests consists of a mixed flora with elements from Indian, Malaysian and Myanmarese floral strains. Andaman forest is rich in timbers species like Gurjan and Padauk. Mount Harriet National Park is one of the richest areas of butterfly and moth diversity of these islands.

The indigenous people of Andamans are — i) The Jarwa
ii) The Jangil (or Rutland Jarawa)
iii) The Onge v) Great Andamanese.
iv) The Sentinelese (most isolated)

The indigenous people of Nicobar are :—
i) Nicobarese
ii) Shompen - restricted to the interior of great Nicobar.

Paddy, the main food crop, is mostly cultivated in Andaman group of islands. Coconut and arecanut are the cash crops. Pulses, oilseed, and vegetables are also grown.



Lakshadweep :-

Consisting of 12 atolls, 3 reefs, and 5 submerged banks, with a total of 43 islands, the Lakshadweep is located about 200 to 300 km off the coast of Kerala in the Arabian Sea. The total land area of the territory is 32 Sq. km. Eleven of the islands are inhabited. The main islands are :- i) Agatti ii) Pitti iii) Androth iv) Kavaratti v) Kalpeni vi) Suheli Par vii) Investigator Bank viii) Minicoy Island

Kavaratti is the capital of Lakshadweep.

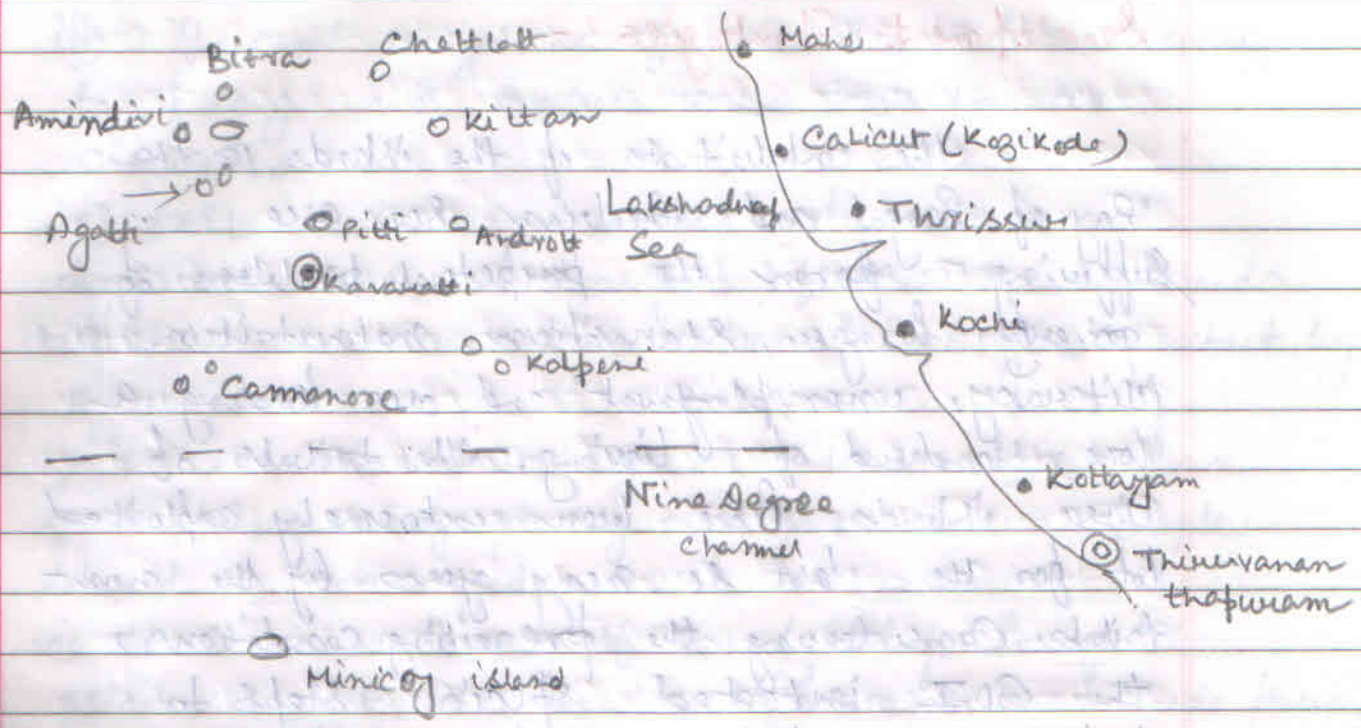
The islanders are ethnically similar to coastal Kerala's Malayali people and were influenced by the Arab Traders. Inhabitants of Minicoy, the Southernmost and largest island, closely resemble Maldivians. Most of the indigenous population (about 99%) is Muslim. The local call themselves the Div-i or Aminidivi ('from the mother island'). The people are hugely dependent on fisheries, as soils on these coral islands are poor.

The coral ecosystems of the islands and the scenic appeal of Lakshadweep are attracting the domestic and international tourists in a big way. Since such a small region cannot support industries, the govt is actively promoting tourism, aquaculture and fisheries. Tourism is one of the important economic activities in these islands. These islands have been recognised as an important eco-tourist place of India as a source of income.

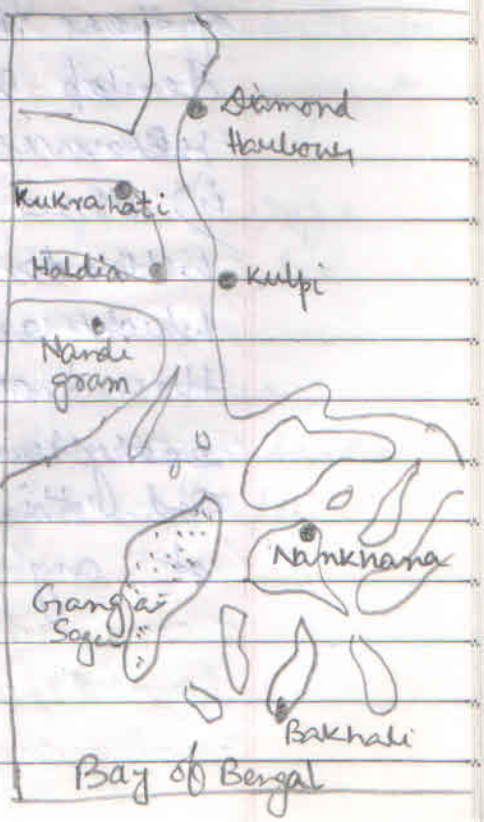
Sagar Island :-

Sagar Island also known as Gangasagar, lies on the continental shelf of Bay of Bengal, about 150 km South of Kolkata. The island stretches over 300 sq. km and has 43 villages with a population of over 1,60,000.

The island is the home of endangered Royal Bengal Tiger. It is also rich in mangrove swamps, waterways and small rivers.



The island is a famous Hindu Pilgrim place. Every year on the day of Makar Sankranti 6 millions of Hindus gather to take holy dip in the confluence of Ganga and offer Puja in Kapil Muni Temple. The Kolkata port trust has a pilot station and a light house on this island. The govt of West Bengal is planning to connect Sagar Island with mainland with a 3.3 km bridge.



Development Strategies :-

The inhabitants of the islands in the Bay of Bengal and Arabian Sea are suffering from the perpetual problem of poverty, hunger, starvation, malnutrition, illiteracy, unemployment and are leading a low standard of living. The tribals of these islands have been extremely exploited lot for the last so many years by the non-tribals. Considering the prevailing conditions, the GOI initiated special steps to improve the living conditions of these people. Some major steps are described as under :-

i) Most of the people living especially in the A&N island are tribals who heavily depend on forests. As such it is necessary to conserve the forest wealth of these islands. Also it is necessary to develop more national parks and biosphere reserves.

ii) There are mangrove swamps and wetlands in the creeks and inland waters which are facing great threat due to the increasing interference of man. These ecosystems are in a delicate balance and this balance has to be maintained at any cost.

iii) The coral ecosystem of the islands both in the Bay of Bengal and Arabian sea need to be conserved.

iv) Soils are at great risk of erosion and degradation due to heavy rainfall in these islands. This problem can be solved to a great extent by afforestation.

v) Forest based cottage industries, which have great potential of proving employment to local people, should be encouraged.

vi) The natural beauty of these islands has great potential to attract tourists from far and wide places, both domestic and foreign. This potential should be harnessed to its maximum so that the living standard of the local people is improved.

vii) Earthquake proof building should be made as A&N islands lies in the highest Seismic risk zone - V.

viii) Coastal creeks, atolls, bays offer great opportunities to fisheries, which can provide large scale employment to local people.

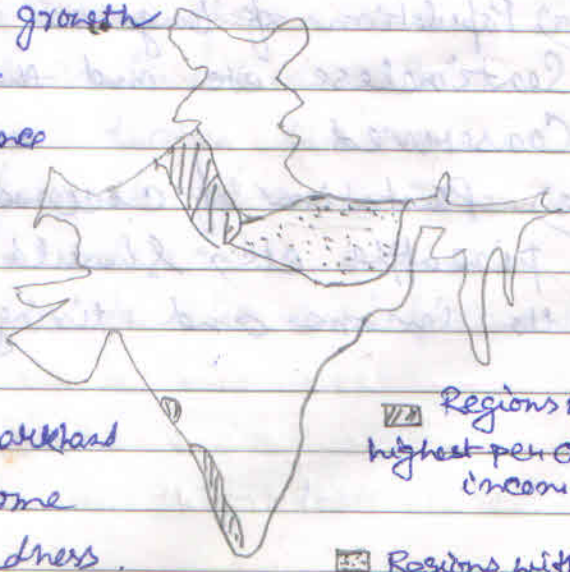
ix) Population of large no. of tribes such as Jarwas, Onge, Sentinelese etc and their ethnicities should be Conserved.

x) Plantation of coconut, arecnut, cashew, tea, pineapple etc, should be encouraged as they enhance the income and living standard of these people.

Q2 Briefly discuss about the various indicators and causes of Regional backwardness in India.

For last fifty years various studies had been made, under the guidence of erstwhile Planning commission to decide various indicators of regional backwardness in India. First such attempt was made by Pandey Committe, followed by Wanchoo committee, Sukhamoy Chakravarty Committee, National Committee on the development of Backward Areas and finally Inter-ministry task group on redressing growing Regional imbalances in 2005. Considering the reports of various committees, the various indicators of regional imbalance/backwardness can be consolidated as follows:-

① **Per Capita Income**:- It is commonly used in assessing the economic position of States. Inter-state disparities in levels of agriculture growth and industrial development have contributed to difference in the growth of per capita income. For e.g- States like Punjab, Haryana, Goa have highest per capita income, while Bihar, UP, Jharkhand have lowest per capita income causing regional backwardness.



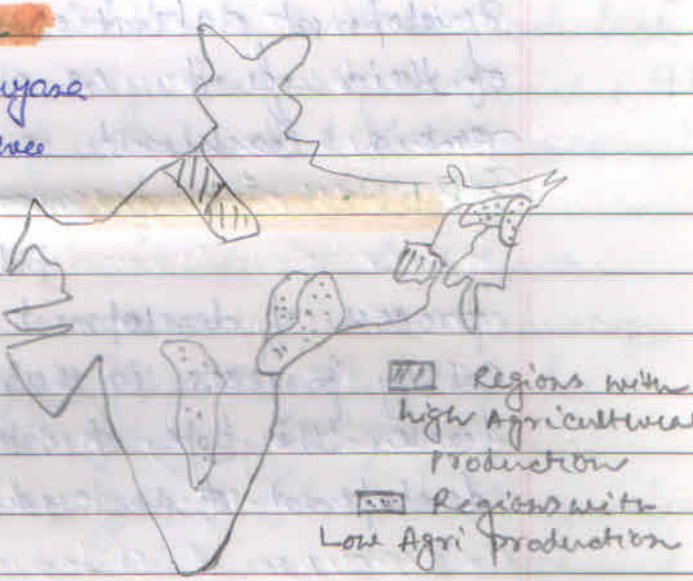
Regions with highest per capita income.

Regions with lowest per capita income

② **Population Below Poverty Line** :- The population below poverty line also creates regional imbalance and ultimately lead a region to backwardness. For e.g- Orissa, Jharkhand, Madhya Pradesh.

③ **Electrification** :- Power is necessary pre-requisite for development and the states in which the power development process is not proper, they find obstacles in growing rapidly. For e.g, States like Assam, Bihar, Rajasthan and Arunachal pradesh are lagging behind in this field.

④ **Agriculture Output per Capita** :- States like Punjab, Haryana have progressed in agriculture production while States like Assam, Orissa and Nagaland still use primitive methods of production



⑤ **Urbanisation** :- It is an imp indicator of economic development. Percentage of Urban pop is higher in States like Maharastra, Tamil Nadu, Gujrat and Karnataka and lower in States like Orissa, Assam, Nagaland. and Himachal Pradesh

⑥ **Transport and Communication, Health, Education** :- Another important indicator of regional imbalances is disparity

found in availability of facilities relating to transport and communication, banking, health, education. Koraput, Bolangir, Kalahandi (KBK) region of Orissa, Bundelkhand region of UP, lags heavily in these facilities.

(7) **Industrialisation** :- The level of industrialisation attained by different states is also different. In Bihar, Orissa, MP, Rajasthan share of industries in total income is low, rendering regional backwardness.

(8) **Lack of Finance** :- Financial institutions feel shy to finance various development activities on account of non-recovery of their fund, as a result backward region remain backward.

(9) **Political Interference** :- It has been observed that political parties interfere in the process of development. Infact they want to bring catchy projects in their area only to influence the vote bank. This type of interference hinders the needy development of an area.

Causes of Economic Backwardness :-

There are certain different factors which come in the way of rapid development of a region. Let us now analyse some of these factors :-

(1) **Historical Factor** :- Historically regional imbalances in India started from its British regime. British industrialists mostly

preferred to concentrate their activities in two states like West Bengal and Maharashtra and more particularly to three metropolitan cities like Kolkata, Mumbai and Chennai.

The uneven pattern of investment in industry as well as in economic overheads like transport and communication facilities, irrigation, and power made by British had resulted uneven growth in some areas, keeping the other areas totally neglected.

(2) Geographical factor :- The difficult terrain surrounded by hills, rivers and dense forest ~~to~~ leads to increase in the cost of administration, cost of development project, besides making mobilization of resources particularly difficult leading to low agricultural productivity and lack of industrialization. Most of the Himalayan States of India, i.e., HP, Northern Kashmir, hill districts of UP & Bihar, & NE states remained mostly backward.

(3) Inadequacy of Economic Overheads :- Economic overheads like transport, communication, power, technology, banking & insurance etc are considered very imp for the development of a region. Due to inadequacy of such economic overheads, some regions of the country, viz., NE region, HP, Bihar etc remain much backward as compared to other regions.

(4) Failure of Planning mechanism :- Although balanced growth has been accepted as one of the major objectives of economic planning in India, since ~~the~~ Second plan onwards but it did not make much headway in achieving this object. The Backward States like Bihar, Assam, Orissa, UP have been receiving smallest allocation of per capita plan outlay widening the regional disparities.

(5) Marginalization of Impact of Green Revolution to certain Regions :- Benefit of green revolution is very much restricted to the states like Punjab, Haryana and plain districts of UP. This has made the well-off farmers much better off, whereas the dry land farmers and non-farming rural population remain totally untouched. Thus it has aggravated regional imbalances due to lack of all-embracing approach.

(6) Lack of growth of Ancillary Industries in Backward States :- GOI has been following a decentralized approach for development of backward region through public sector industrial enterprises located in backward areas like Rourkela, Bokaro, Bhilai, Bongaigaon etc. But due to lack to trickle down effect and lack of growth of ancillary industries, the surrounding area of these growth centres remained backward.

(7) Lack of motivation on the part of Backward States :- While the developed states like Maharashtra, Punjab, Haryana, Gujrat, TN etc are trying to attain further industrial development, but due to lack of motivation the backward states, have showing their interest on political intrigues and manipulation instead of industrial development.

(8) Political Instability :- Political instability in the form of unstable govt, extremist violence, law and order problem etc. have been obstructing the flow of investment into these backward regions beside making flight of capital from these backward states. Thus this political instability prevailing in some backward regions of the country are standing as a hurdle in the path of economic development of these regions.