



APPRAISAL AND SUSTAINABLE PLANNING FOR WATER RESOURCE (A CASE STUDY OF CHHITORGARH DISTRICT, RAJASTHAN)

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KEYWORDS :

Introduction

Resources may be defined as the means to attain desired ends both individual and social. Resources are material or tangible elements. According to Zimmerman - "Resources are functional concept and are in the forms of "neutral staff as long as they remain unexploited". They are exploited through man's increased knowledge of nature. Any material, which can be transformed in a way that it becomes usable, can be termed as a resource. Any material can be termed as a resource, provided an appropriate technology is available for its transformation into more valuable goods. Depending on their origin, expected life, level of utilization and the end use, resources can be put into different classes such as Biotic and Abiotic resources, Inexhaustible and Exhaustible resources, Potential and Developed resources etc.

Appraisal of resources means to estimate the worth of the various resources. In order to bridge the potential performance/utilization gap in different areas within the state, it is essential to have a local assessment of the problems, resources and of the potential or productive capacities. The local level assessment i.e. at district level gives a more realistic picture.

Sustainable Development and its need: The concept of sustainable development was largely developed by the World commission on Environment and Development, more commonly known as the "Brundlandt Commission" in 1987. According to the Commission's documents, "Our common future" sustainable development is defined as : "a dynamic process designed to meet today's needs without compromising the ability of future generations to meet their own needs". Sustainable development is a long term process whose central objective is to achieve a level of economic and social development that meet the needs of the present generation without compromising the ability to fulfill the needs of future-generation.

In defining 'sustainable development' a distinction needs to be made between its objectives, normative and procedural components. The objective component is the composition, structure and distribution of ecosystems which reflects the ways in which they exchange energy & materials. The normative component, the judgement on the 'desirable' combinations of consumption patterns and productive technologies that will be based on an understanding of the scientific assessment and social conditions, which will in turn determine the strategy that will be acceptable and to what extent. The procedural component includes requirements like transparency, capacity building, people centeredness and participation.

The aim of development planning is to get the best out of the available resources and minimise regional imbalances consequent on development process. For efficient and sustainable planning, we need qualitative and quantitative data, which are reliable, accurate and available within required time frame, so that result could be more meaningful. Depending upon the level of planning, the information's on various aspects at different level may have to consist predominantly of basic data on highly aggregated composite, both static as well as dynamic.

For this, not only proper development oriented data acquisition activities and systems are essential, but a proper information system and its constant updating is also a necessity, at all level of planning. The development generally results in changes to physical environments and have to ensure that such changes do not adversely affect better living or result in more problems. Broadly the process of sustainable development planning may consist of :-

- (i) A realistic appraisal of present situation, its good and bad points in all aspects.
- (ii) A brief account of causes leading to the present situation.
- (iii) Assessment about the future and consideration of alternatives against the conflicting interests as well as action of short and long term strategy.
- (iv) Continuous monitoring of status and changes beings affected in the situation.

District level planning, a concept of decentralized planning, is a area based sub-stage planning aimed at supplementing the state and regional plans with a more detailed examination of resources, constraints and potentials of local area. Drawing up a district plan requires, upto date reliable information on natural resources in spatial forms at desired scale. Arriving at an alternate planning scenario requires integration of various spatial data available from different sources which may be in different scales, format and projections.

To make these decisions wisely and to establish an order to priority for state efforts, through knowledge of our natural resources, their native and geographical distribution, magnitude, limitations, present stage of development and scope of better use is essential. Unfortunately, so far, there is no comprehensive account of these resources, their interaction, vulnerability and future possibilities for many states in India. It is in this context that resources inventories become a useful tool with great practical applications. It is development that provides economic, social and environmental benefits in the long term, having regard to the needs of living and future generations. Thus, the main objective is the satisfaction of human needs and aspirations taking all necessary precautions in the use of resources so that these could continue to serve the community in the long term. It involves the conservation of resources, its proper management and non-destructive use as well as preserving the ecology and environmental values.

The planning process in India has remained highly sectoral in which the planning activity concentrates only on one of the sectors of economy say agriculture, industry, transportation, communication etc. These development plans have led to the sectoral shifts significantly.

In the process of development, the sole motto of getting optimum benefits out of the available natural resources was dominant which resulted into their huge exploitation and depletion. The soils were exploited by chemical fertilizers, minerals were dug out in uncontrolled manner, trees in the forest areas were cut erratically. All these resulted into the problem of resource depletion and environmental degradation, specially in the backward hilly and forested areas. Under the above conditions, the planners, environmentalists and other scientists in the all over world gave due consideration to normalise the above worsening situation. The sustainable development approach is the only remedy to deal with the above problems as it involves a visionary approach so that development may sustain for longevity. Sustainable development planning approach is a comprehensive planning concept for integrated assessment of an area. In the process it involves assessment of all the existing resources and needs of the community and thereafter working out a policy document for further development of the area covering all the aspect and all round development approach.

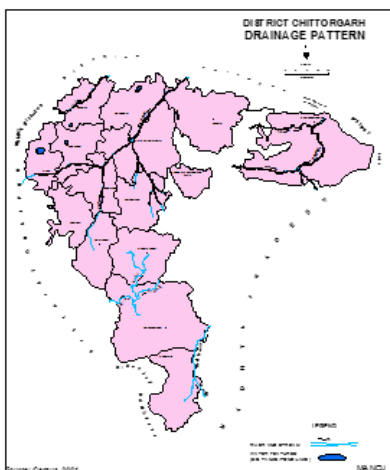
Sustainable planning for water Resource

All the civilizations of the world are situated near the banks of the rivers or lakes. Since water is the essential necessity for life. It is an important factor that affects the life at a region, its prosperity and development. The study of Chittorgarh district shows that there are

many water resources like rivers which are perennial and are source of water for the district. The main rivers flowing through the district are the Chambal, the Banas, the Berach, Gambhiri, Gunjali, Bamini, Jakham, Wagon. The Chittorgarh district area falls in the Banas Catchment (52%), Chambal Catchment (27%) and Mahi Catchment (21%).

On studying the rainfall pattern it was found that the climate of the district is generally dry except during the southwest monsoon season. And the rainfall predominates from June to September and August is the rainiest month. There is good rainfall in the district which increases the surface and sub-surface water table. Overall study of the water resources and rainfall pattern shows that Chittorgarh district is rich in its water resources. Increase in rainfall has shown increased productivity in the region. But many a times proper utilization of the water resources is not done which affects the development of the region. It is postulated that the proper care of the water resources can really improve the productivity and Biotic reserves of the region. So following water strategy could be planned and implemented.

- (1) Catchments treatment for the Chittorgarh water reservoirs should be planned & implemented. Region that can be irrigated by the catchments area could be increased also with proper planning.
- (2) Artificial water reservoirs in villages should be made in order to recharge the ground water Reservoirs.



- (3) Recycling and reuse of the waste water should be done by constructing waste water treatment plants. Waste water generated by the industries of the region could be treated and reused.
- (4) Water conservation in irrigation, drinking / domestic and industrial sectors should be promoted. Proper methods should be developed to conserve the water which could be used fully for the irrigation, domestic or industrial sectors for eg. the irrigation canal systems should be made. For conservation of water more dams should be built in the region. Artificial ponds should be drilled so that rain water could be stored and used even after the rainy season.
- (5) To save water in fields the technical education should be given to the farmer like Drip irrigation, Sprinkler irrigation, Pot Method etc. These methods should be used with emphasis for the sustainable planning of water resources.
- (6) Water demand management should be effectively planned and implemented.
- (7) Efficient planning and implementation of watershed development & management.
- (8) Numerous small dams should be constructed in the region instead of large and medium dams as they occupy more space and this is generally opposed by the local people.
- (9) Improved operation and maintenance of existing tanks / dams and their linkages / networking through drainage feeders.
- (10) Regular Maintenance and management of anicuts should be done to avoid silting and obstruction of recharge to neighbouring wells and borewells.
- (11) Total care of water contamination and pollution of discharge of liquid & solid waste material at unwanted places and practice total eco-environmental management through ecoclubs at Urban and rural levels. NGO's should come forward in liaison with concerned department.

- (12) Proper periodical monitoring and appraisal / evaluation of available surface and ground water potential to keep watch on monsoon water flow, depletion of water levels and degradation of water quality with adequate number of monitoring stations.
- (13) Awareness, education and motivations of the local people is necessary to sensitize them for participation in irrigation, drainage management and drinking water conservation.
- (14) Higher investment should be done to develop new water schemes.
- (15) Maximum findings should be attracted from all available sources.
- (16) Water Management and conservation campaign should be organized regularly.

Conclusion: The aforesaid discussion indicates that the improvement of water management is crucial for the drought management in Rajasthan there should be proper management between short term and long term measures to solve the problems of drought and famine in future. More and more voluntary agencies and non-governmental organisations should come ahead and co-operate to mitigate the problem of drought and famines in the area. To solve this problem of water resource management active participation and co-operation of the public is necessary and also in fighting the famines and drought more successfully in the years to come. There should be greater attention towards the creation of durable and productive community assets in planned rural development in future. This alone would reduce the intensity and incidence of famines and droughts in the state. Continuous utilization is leading to the decrease of water resource so there is an urgent need of formation and implementation of "Water resource management policy at the National level

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