

A Geographical Analysis of Bageri Ka Naka Dam: A Water Management Project in Upper Banas River Basin

Dr. Madhusudan Shrimali

Principal & HOD of Geography, Vivekanand P.G. College, Anjana, Banswara, India

Abstract: *The history of dams in our country provides a wonderful vantage point from which to view the cultural, economic and social development or modern India.*

Keywords: Bageri Ka Naka Dam, Banas River Basin

1. Introduction

Water is a gift from God. Living creature dreams of heaven, with its streams of water that does not grow stale. Water is main basic human need. It has long been known that that water occupies a key position and chief factor and this fact is growing more topical with each passing day. On a global scale this statement is particularly true of drinking water in the semi-arid regions, the availability of water for human beings and the environment is a matter of eminent importance.

The amount of water present on the earth is estimated at about 1.41 bnkm of which only about 2.5 percent is fresh water. The overwhelming part the other 97.5% is sea of brackish water unsuitable for human use. The greatest part of fresh water, 87% is contained in ice caps and glaciers, in the atmosphere, in the ground or deep inside the earth. If the total amount of the earth's water were 100% litres then the amount of useable fresh water would be only 0.003 litre or half a teaspoon. About 30% of fresh water is stored as ground water.

It is a well-known phenomenon that water is a universal solvent and is a major constituent of all living organisms. Earth is the only planet where water exists in all its three phases. Availability and absence of water influence the distribution and abundance of planet animals as well as human societies. The uniqueness of water is due to its structure and properties which are as follows.

Water covers about three quarters of the earth surface and constitutes about 70 percent of the total body weight of living organisms. Consequently water has been termed as elixir of life. Human culture and civilization are vitally linked with water resource. Human in difference, ignorance and greed combine globally to waste it, and divert it, thereby, denying it to neighbours.

Technical enable diversions of water towards areas of demand and Dams have played a major role in it. Dams have helped to provide water for drinking, agricultural and urban uses, hydroelectric power and wildlife management which are generating major social and economic benefits. Water sharing is a noble area. However, the present situation proves that sharing water is a sensitive issue, resulting in

many disputes, The command area of Bagerika Naka was Constructed 2010 by the state government of Rajasthan on Banas River. The river is also known as 'van kiasha' (hope of forest). The Banas drains a basin 45, 833 km and lies entirely within Rajasthan. It is a seasonal river that dries up during the summer. This paper reflects the analysis of Bagerika Naka Dam project in Rajasthan.

2. Location with Study Area

The Geographers have divided the earth into a number of regions of all kinds. These regions consist vivid disparities which exist in natural or cultural form. This dam is built on the Banas River. Bagerika Naka dam with upper Banas Basin is enjoying the physical and cultural disparities as under.

Physical Aspects of the Region

- The Upper Banas Basin is located in the central south-east part of Rajasthan between 73°25'E and 75°20'10E longitudes aligned NE-SW. It is bounded but the Luni Basin in the West, the Shekhawati, Banganga and Gambhiri Basin in the north, The Chhambal Basin in the East and Mahi and Sabarmati Basin in the South. The Basin extends over parts of Udaipur, Rajsamand, Bhilwara and Chittaurgarh Districts. It is extended over an area of 391.00 sq. k.m.
- The Total catchment area of the basin is 30-833 sq. km. geographically; the western part of the basin is marked by hilly terrain belonging to the Aravalli chain. On the eastern side of the hills lies an alluvial plain with a gentle east ward slope. Ground selections in the western hilly part range approximately from 850 m to 1123 m while the alluvial plain delectations range approximately from 580 m to 750 m. The region is characteristically hilly surrounded by the Aravalli hills in its western and central parts and the Vindhyan-Scarplands and hills in the eastern part. Astronomically speaking, the basin under study comprises of the urban towns distributed in four districts of Udaipur, Rajsamand, Chittaurghar and Bhilwara.
- Relief is the solid part of the earth on which many physiographic forms such as hills, plateaus, plains and valleys are situated. These physiographic parts which are known as relief of an area are an important media to show the relationship between man and the land. It is also a part

of region which describes itself the physical, economic and cultural moods of the area.

- The drainage of the region shows as the rain water that falls on it. The Upper Banas River Basin like its principal River Chambal, is a superimposed river described by the local people as “Van ki Aas” or “Hope of the Forest” or “Varna-Nasa” or Destrever of the Race”. It originates from four and half km. west of the fort Kumbhalghar and after flowing for four hundred and eighty km. drains into the Chambal in Sawai-Madhopur district and leaves the territory of Mewar near the town of ‘Deolion’ the border of district Ajmer, Bhilwara and Tonk. It is essentially a regional River associated with the Mewar region and along with its major afficent Khari, Kothari and Berach drain the eastern slope of the main Aravallis lying north of National Water Divide. The Upper course of Banas River from its Source up to the town of Nathdwara, traverses through a hilly region. After circumnutating half the way round the Jargaji hill in a north- south direction flows from west to east between the villages of “paner” in

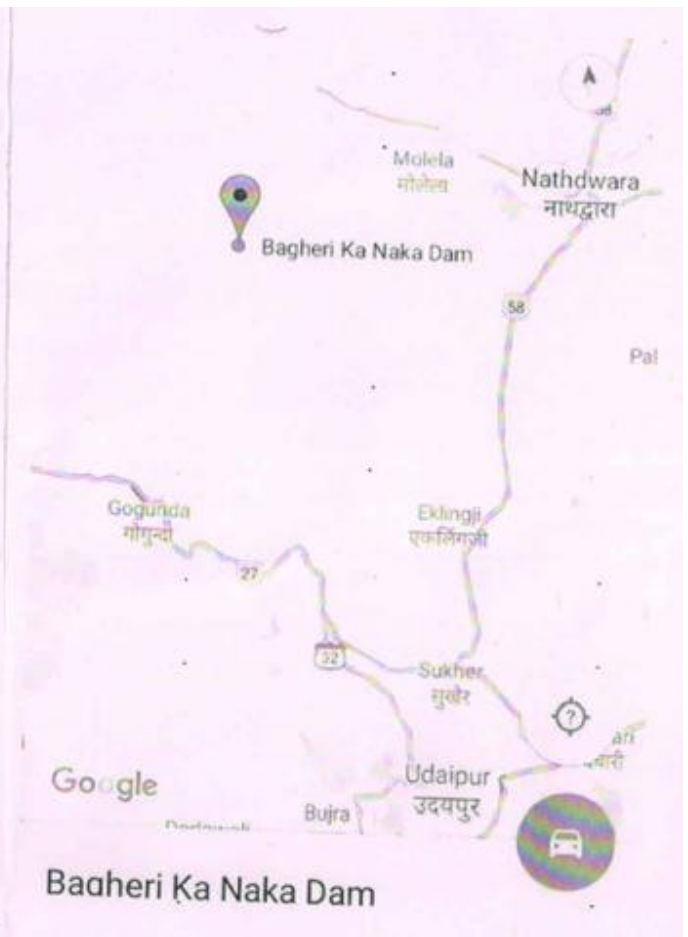
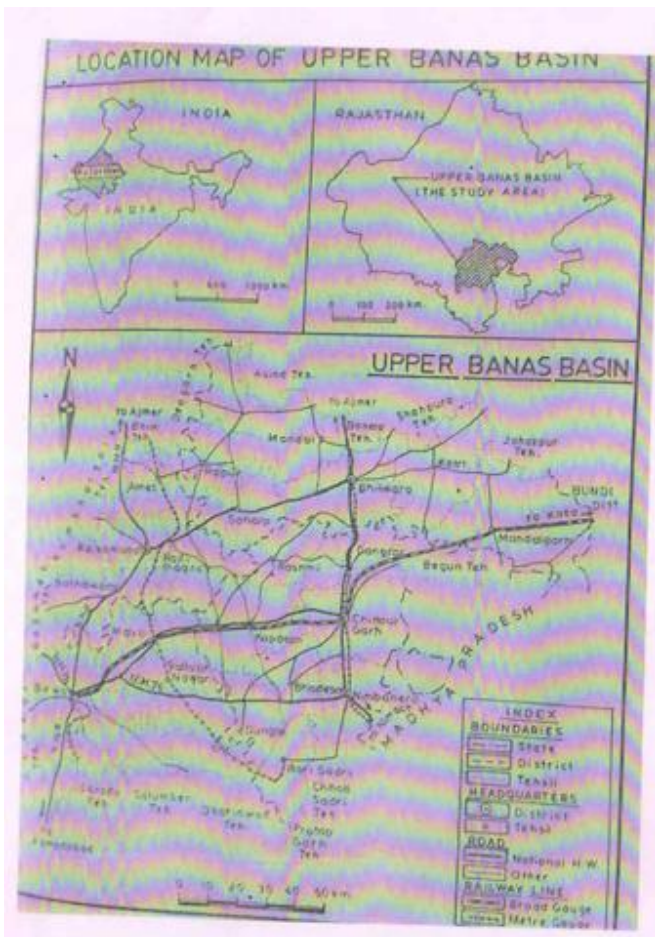
Gogunda Tehsils to the town of Nathdwara, making several large loops.

Bageri Ka Naka Dam

This dam is the project of Rajasthan government constructed in the middle part of Banas Basin. The dam is completed on 02, aug. 2010. The dam is supplying water to Rajsamand district along with 259 villages. It is located at Machind in Khamnore Tehsil.

This dam is located in the central south-east part of Rajasthan between 24°91’ and 73°59’ longitudes aligned NE-SW. Its Total length is 25 meter, height 14 meter, width 70 meter and depth 15 meter and total water capacity is 32.50 ft. The total catchment area of this project is 200 km. Steel pressure concrete pipeline having 700 mm diameter has been laid from dam side to Rajsamand district.

At the dam side filter plant has been constructed when about 36.16 M.L.D. water is being supplied to the Rajsamand district and nearby village.



3. Objectives

The major aim of present research work is to find out various possible alternatives for proper development of water resources of Bagerika Naka.

The main objectives are:

- To identify the physical a cultural aspects of the study region, the Bagerika Naka.
- To identify the major sources of water climatic surface as well as ground.
- To know the aquifers of the dam as how the rocks affect the distributional pattern of ground sources.

- To analyses the public and private water supply pattern and distribution of water sources in relation to area a population.
- To measure the level of ground water resources.
- To investigate the various uses of water for domestic, industrial, municipal, commercial and others in terms of requirement and supply.
- To measure the problems of water scarcity and water pollution.
- To maintain sanitary conditions so as to promote health and wealth of people by preventing water borne diseases.
- To examine the government's policies and programs in respect to drinking water.
- To suggest a new plan for optimum utilization of water resources and their management.

4. Methodology

The study is based on the empirical- analytical approach but taking a holistic view of the problem. Besides, problem solving approach has also been applied using it by way of amazing a case study. This work is based on both the primary and secondary sources available in the Indian libraries. The primary sources reflected in the form of documents, viz writings and speeches of policy makers, maps and other cartography work have been collected from the Public Health Engineering Division, Grand water Board and Irrigation Division etc. However the secondary sources available in the form of books, research articles and press releases, are also consulted.

5. Literature Review

There is no life without water. Water is basic need of human being. The study related to the research of water resources has been the most important task among all the geographical studies. The scholars have discussed many studies describing the distribution supply, use, availability scarcity and pollution of water resources since early eighties.

The secondary data like technical and official documents of government institutions in Rajasthan and at national level in India and relevant media sources was used to assemble evidences. Many books and papers and the water policies of government of Rajasthan and India etc. are also concerned. This diversity of published sources was used to gather the data for the study.

Site visits were conducted at many places, benefited from the water of Bagerika Naka dam. At these different locations some interviews were prearranged whilst others were opportunistic. Interviewees were people from village gatherings included officers, the junior staff and engineers at the Bagerika Naka dam and local people operating water infrastructure. Much information was collected from conversations and discussions with the project affected people. So at the micro level primary data was collected using interviews, questionnaire and other participatory research methods.

6. Results and Discussions

The Bagerika Naka project has greatly influenced its command area. The dam has played a major role in the economic and social development of the region i.e.- supply of potable drinking water in deficient areas and increased employment opportunities, better transport facilities, increased economic opportunities etc. But now the region is facing many issues in terms of sharing the water of dam including the desiccation of aquatic and riparian habitat, resettlement and rehabilitation of project affected people, inequities and unfairness pertaining to water allocation and distribution. The purpose of this paper is to overlook these issues and suggest some strategies for future planning of water management in the area.

The State is supplying water from Bagerika Naka Dam to Khamnor Tehsil (Rajsamand district), there are several issues regarding the allocation of water. There are inequities and unfairness pertaining to water allocation and distribution of Bagerika Naka project.

According to the State Water Policy, 2010, the order of priorities of water allocation will be as follows-human drinking water, livestock drinking water, other domestic uses, agriculture, power generation, industrial and then non-consumption uses.

Declining trend of inflow in Banas River has been observed during recent decades, there is various reasons behind this, like continued rapid changes in land use pattern, population increase coupled with changing lifestyle are major factors responsible for it and rainfall patterns in the Banas River Basin might be alerted in the near future (2010-2040) under various climate change scenarios and the potential impacts of these changes will lead to low stream flow in the Banas River. Where on the other hand, during the last century there has been a steady trend towards population resettlement to cities. This urbanization trend leads the increasing demand of water so there is a question that Bagerika Naka dam has the future potential to fulfil the water requirements of Khamnore Tehsil (Rajsamand district).

There are also some spatial issues relevant to share regarding the water dam. Even within the district there is discrimination in regard to water sharing. Khamnor tehsil, is being well benefited from Bagerika Naka dam but there are many areas that are deprived of water, fell within a radius of 50 km in the command area of Bagerika Naka dam.

The Rajasthan State Water Policy, 2010, describes the critical status of water in Rajasthan in terms of:

- The growing imbalance between demand and supply of water.
- Uncertainly in availability of water.
- Inequity in access to water.
- Low operational efficiency of water resource development projects.
- Depleting groundwater resources and deteriorating quality of water.

But we cannot deny the fact that The Bagerika Naka project has played significant role in the social, economic, cultural growth of its command area. Before this project ground

water was the important source of drinking, agricultural and industrial purpose and the level of fluoride, nitrate, salts is very high in the area which make it unfit for drinking purpose even pose a risk to health. Supply of potable drinking water in deficient areas and increased employment opportunities, better transport facilities, increased economic opportunities, irrigation facilities etc. are playing important role in the overall development of the region.

So for the sustainable development of the region and betterment of the area we should improve the institutional mechanism in relation to ground water, better planning or surface water, delivery and conservation of water. We should pay attention upon the growing urbanization trend and the climate variability which are predicted to make the water supply system fragile in Rajsamand. We could assess the urbanization trend in the world and resulting issues for water supply system. Then we can assess the case of Rajsamand and make a comparative statement on the current issues in the area.

The water policy should be formulated on the basis of the outlook that water is the fundamental human right not a commodity only through these means we can ensure the inalienable right to water for all the people. Citizens in Rajasthan have becoming dependent on canal supplied water, in former times people survived in the Thar without water brought from elsewhere. Our ancestors used rainwater to fulfil their needs but rainwater harvesting techniques have almost disappeared in areas where the canals are supposed to deliver water. Ideally everybody could take care of his own water supply.

7. Conclusion

The crisis of water in the state is due to less rainfall, its arid climatic conditions and a large part of its water is saline and unfit for human consumption and irrigation but the study proves that It would be a wrong proposition that water crisis that lead to water scarcity, disputes or conflicts are only due to factors like population growth, increasing diversified water uses etc. Not merely these factors are responsible for crisis but the problem also lies in current legal polices, social and economic status of the people and the institutions governing water resources administration and management.

Almost half of the world resident live in cities but occupy less ten 2% of land area. It is evident that the provisions for water in cities must come through sources external to its urban environment. Due to pragmatic reasons such as land use, availability and valuation of land, it does not seem possible for rapidly urbanizing countries such as India to make cities self-sustainable in the provisions to have impact on the peri-urban and villages surrounding the urban areas. But at the same time we cannot deny the fact that water is not a commodity, we should resist all criminal attempts to marketize, privatize, and corporatize water. Only through these means we can ensure the fundamental and inalienable right to water for all the people. We can conclude this by the statement of a women, Mylamma, who succeeded in shutting down a soft drink plant, "When you drink coke- you drink the blood of people."

The history of dams in our country provides a wonderful vantage point from which to view the cultural, economic and social development or modern India. Dams have served over the last century as powerful engines of economic and social development across the country and the benefit doubles in the desert areas like our state so a systemic approach to management and investment of water resources can guide sustainable development. Developed resource management techniques along with progressive water policies and principle like ideal utilization of water resources in many countries can substantially mitigate the water resources scarcities. We can take the example of Israel in this regard.

References

- [1] <http://waterresources.rajasthan.gov.in>
- [2] Govt. of Rajasthan, Department of Bagerikanaka Dam drinking water supply and agriculture project- progress report.
- [3] Sate water policy feb, 2010, water recourse planning department, Rajasthan. Evard, M.Sharma, O.P.
- [4] Clean water environmental Governance, published by Indira Gandhi Institute of Development research.
- [5] Water management in Udaipur Basin PH.D. thesis MLSU Udaipur, Singh Sunita (2001)