



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJIRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 12, Issue 1, January 2023

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.118

Historical Impact of Indira Gandhi Nahar

Dr. Pushpa, Dr. Sunil Kumar

Assistant Professor, Dept. of Zoology, IASE.(Deemed to be University), Sardarshahar(Raj.), India

Associate Professor, Department of Geography, IASE.(Deemed to be University), Sardarshahar(Raj.), India

ABSTRACT: The present work deals with the study of Indira Gandhi Nahar. Maharaja Ganga Singh made the map of river by Kanwar Sain in 1938. Its construction began from 1952 to last portion finished in 2010. Indus water Treaty was signed between India and Pakistan which gave the right to India to use the water from three rivers. The Satli, Ravi and Beas. This Canal is the longest canal in India. It starts at the Harike Barrage of the Satluj and Beas rivers in Punjab State and the end of canal in northwest of Rajasthan. The canal centers in Rajasthan near Kharakhera village in the Tibbi Tehsil of the Hanumangarh district. It traverses seven districts of Rajasthan: Hanumangarh, Shri Ganganagar, Churu, Bikaner, Jodhpur, Jaisalmer, Barmer. This paper highlights the history of canal and its length history and its water capacity and the impact of canal's water on Agriculture and Animals in the thar desert.

KEYWORDS: IGNP, Water Quality, flora, fauna, Physio- chemical conditions.

I. INTRODUCTION

Indira Gandhi canal was previously known as the Rajasthan canal but after the assassination of Prime Minister Indira Gandhi it was renamed as Indira Gandhi Canal on 2 November 1984. Its map was made up Kanwar Sain in 1938 but due to lack of funds the project could not be started. After Independence the governments took this project forward. The idea of bringing the water from the Himalayan rivers flowing through Punjab and Pakistan was conceived by hydraulic engineer Kanwar Sain in last 1940s. In 1960 the 'Indus water Treaty' was signed between India and Pakistan, which gave the right to India to use the water from the Satluj, Ravi and Beas. The initial plan was to build the canal in two stages I: Consisted of a 204 Km feeder canal from Harike barrage to Masitawali with main canal from Masitawali to Pugal (Bikaner) Stage II: Involved constructing long main canal from Pugal (Bikaner) to Mohangarh (Jaisalmer).

In which the feeder canal's length 204 Km and main canal is 189 Km. from Harike Barrage to Pugal in Bikaner, district made Major portion of the canal from Pugal to Mohangarh which length was 256 Km. So the total length of canal from Harike Barrage to Mohangarh is 649 Km. Before this canal Rajasthan have no more population and mostly part of this state 'Thar desert'. After this canal and this project is majorly responsible for the rising economic growth. Different kinds of agriculture and crops have been harvested with the help of canal water. Fresh water quality of Indira Gandhi Nahar in Rajasthan with regards to physico- chemical like water temperature, quality and effectiveness in the best possible way. Due to this physiochemical conditions many type of Flora and Fauna is growing in this canal. Canal would supply drinking water to people in the Thar desert areas. It is the life line for Thar desert in the northwest of Rajasthan state. The project has been designed to fulfill different objectives.

II. AIM OF THE STUDY

To rejuvenate to great desert. The main aim of this study is find out the economic environment, agricultural effect on human being due to the Indira Gandhi Canal's water.

III. REVIEW OF LITERATURE

Environment impact of Indira Gandhi Canal, IGNM, Jaipur, 1997.

Study of seasonal variation with special. Reference to physico-chemical parameters in Tulshi Reservoir of Kolhapur District (M.S.), India (Koli and Muley, 2012, Physico-chemical parameters like atmospheric and water temperature, PH. Dissolved oxygen, BOD and Nutrient were analyzed.

A.D. Smitha, P. Shivashankar (2013)⁴ observed that temperature, nutrients and dissolved oxygen are some of the important factors that play a vital role for the growth of living organism in the water body.

IV.MATERIAL AND METHODS

In the research work for historical study of the Indira Gandhi Canal and study of the canal project which was divided into two stages (Stage I and Stage II). The canal command area data is primarily based on the secondary sources of data, which has been collected from the district head offices, forest department of Rajasthan, as well as published research worker and environment study the climate was divided into three seasons (summer, rainy and winter). The present study on the physical chemical parameters such as temperature, PH, Dissolved, Oxygen etc. The water samples were collected from canal at monthly intervals during 8:00-10:00am in the fresh unsullied plastic bottles. Temperature and PH were recorded on site. Dissolved oxygen was analyzed by using Winkler's modification method. Parameters Area to be irrigated annually.

Length of feeder canal = 204 Km. Length of main canal = 189 Km Depth of water = 6.25 m
Water temperature is measured by using hand mercury thermometer. PH was estimated by digital PH meter.
Results and Discussion

Historical impact of the canal project obtained during the present investigation (during March 2022- August 2022) is presented in table.

Table-1 District wise area covered by the project.

S.No.	District	Culturable Command	Area Covered by the project		Total % of Col-2
			Stage-I	Stage-II	
1.	Hanumangarh	-----	199	64	-----
2.	Sri Ganganagar	2064	181	-----	443 (21.46%)
3.	Churu	1682	-----	65	65 (4%)
4.	Bikaner	2725	175	402	578(21.19%)
5.	Jodhpur	2285	-----	66	66 (3%)
6.	Jaisalmer	3839	-----	648	648(17%)
7.	Barmer	2839	-----	62	62(2%)
	Total	15434	555	1307	1862 (12.06%)

According to table-1 district wise area covered by the project, reveals that the highest culturable command area has been recorded by Jaisalmer with a total command report on environmental impact of Indira Gandhi canal, Jaipur 1997 Jaisalmer with highest culturable command area.

Climatical parameter of the canal water obtained during the investigation (During March 2022- August 2022) is presented in table.

Table 2 seasons wise parameter covered by the project.

Parameter	Summer	Winter	Rainy
Temperature(⁰ C)	26.5	17.5	22.5
PH	7.9	8.2	7.7
Dissolved Oxygen(mg/l)	4.6	7.7	5.4

The data on water quality reveals water temperature was ranged from 17.5⁰C to 26.5⁰C. During winter season the water temperature was found to be minimum, where the summer season exhibited the maximum water temperature. The PH was ranged from 7.7 to 8.2. The PH of water was relatively high in winter season and low in the rainy and summer. This

variation in PH might be due to industrial and other waste coming into Indira Gandhi Canal from nearby industries and peoples. The dissolved oxygen (DO) ranged from 4.6 mg/l to 7.7 mg/l. The dissolved oxygen of water sample was found maximum during the winter season whereas the monsoon season exhibits least amount of dissolved oxygen. High D.O. content might be due to increased photosynthetic activity of autotrophs while low content might be due to increase respiration of organisms.

V.CONCLUSION

The study area is thirdly populated and the main source of livelihood of the people before the introduction was rearing of cattle for ghee, milk, wool and leather and the agricultural activities were entirely depending on monsoon rainfall. After Indira Gandhi Canal in this desert convert in agricultural land. There has been a rapid rise in the number of villages and new colonies in the canal command area. There has been a percentage change in the attitude and life style of the people, which has resulted into urge for education and greater mobility. Due to the canal the climate condition has been changed in this desert. It helpful for soils fertility, soil moisture content, grow crops which are economically beneficial. Forest grow due to the canal that also helped in fighting against green house effect through photosynthesis which contributed in the micro-climatic change. Due to the growing forest canal climate like temperature PH and dissolved oxygen.

ACKNOWLEDGEMENT

The author is thankful to Sumit Kumar Bhadu, Dr. J.D. Singh and Dr. Deepmala Garg for guiding.

REFERENCES

1. Indira Gandhi Nahar Board, Project Profile, 1997.
2. Karajeh, F.F. and Tanji, K.K., Agroforestry drainage Management model theory and validation.
3. Govt. of Rajasthan, Indira Gandhi Nahar Project, Annual Report, 1997-98.
4. Gujar R.A. and Jat B.C., Afforestation programs in Indira Gandhi Nahar Pariyojna area, the research journal of social science. Issue II, April 2008.
5. India state of forest reports 2003, 2011 and 2019.
6. Sharma & Capoor, A (2010). Water quality Assessment of lake water of Patra bird sanctuary.
7. Mishra, M.K., Mishra, N. Pandey D.N.(2013). An assessment of the physico-chemical characteristics of Bhoomka pond, Hanumana Rewa district, India. Int.J. of Inno- research in SET Vol.2 Issue 2013.
8. U. Uduma and M.B. Uduma, physico-chemical analysis of the quality of sachet water consumed in Kano metropolis. American journal of environment energy and power Res. 211, 2014, 01-10.
9. Sajitha V., S. A. Vijayamma (2016) study of physico-chemical parameters and pond water quality assessment by using water quality index at Athiyannoor Panchayath Kerala, India. Emer Life Science Res (2016) 2(1):46-51.



INNO SPACE
SJIF Scientific Journal Impact Factor
Impact Factor: 8.118



ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 **9940 572 462**  **6381 907 438**  **ijirset@gmail.com**



www.ijirset.com

Scan to save the contact details