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Irrigation Quality of Surface Water of Rural Areas Around Kota City, Rajasthan

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ABSTRACT

Due to the natural and anthropogenic inputs, the Chambal River which passes through the Kota city has gradually deteriorated. The assessment of surface water quality is an important aspect to understand the ecological sustainability of the river. Hence, in this study the surface water quality of Kota was evaluated using long time series data for pre-monsoon and post-monsoon period. Data on monitored locations were collected from Public Health Engineering Department (PHED). Various physio-chemical parameters of surface water quality for River Chambal, Akelgarh water treatment plant and Sakatpura water treatment plant were examined to assess the extent of pollution and its suitability for drinking and irrigation purposes. Apart from this the seasonal and temporal variations in water supply of Kota city were observed .. The results imply that water quality of River Chambal is moderately polluted, hence to maintain its water quality; proper waste disposal technique should be adopted. However, drinking water supply system analysis indicates the shortage of water supply in outskirts of the city, so water transmission system need to be augmented in near future to supply additional demand in the newly developed areas in the city.

KEYWORDS: *Irrigation, surface, water, rural areas, kota city, Rajasthan, PHED, Chambal, pollution, quality.*

Introduction

Kota Barrage is the fourth in the series of Chambal Valley Projects, located about 0.8 km upstream of Kota City in Rajasthan. Water released after power generation at Gandhi Sagar dam, Rana Pratap Sagar dam and Jawahar Sagar Dams, is diverted by Kota Barrage for irrigation in Rajasthan and in Madhya Pradesh through canals on the left and the right sides of the river. The work on this dam started in 1954 and was completed in 1960. The total catchment area of Kota Barrage is 27,332 km^2, of which the free catchment area below Jawahar Sagar Dam is just 137 km^2. [1,2]The live storage is 99,000,000;cubic metres. It is an earthfill dam with a concrete spillway. The right and left main canals have a headworks discharge capacity of 188 and 42 m^3/s, respectively. The total length of the main canals, branches and distribution system is about 2,342 km, serving an area of 2,290 km^2 of CCA. 50% of the water intercepted at Kota Barrage has been agreed to be diverted to Madhya Pradesh for irrigation. The barrage operates 19 gates to control flow of flood and canal water downstream, and serves as bridge between parts of Kota on both side of the river. Kota is located along the banks of the Chambal River in the southern part of Rajasthan. It is the 3rd largest city of Rajasthan after Jaipur and Jodhpur. The cartographic coordinates are 25.18°N 75.83°E. It covers an area of 221.36 km2 (85.47 sq mi). It has an average elevation of 271 metres (889 ft). The district is bound on the north and north west by Sawai Madhopur, Tonk and Bundi districts. The Chambal River separates these districts from Kota district, forming the natural boundary.[3,4]

The city of Kota is situated at the centre of the southeastern region of Rajasthan a region very widely

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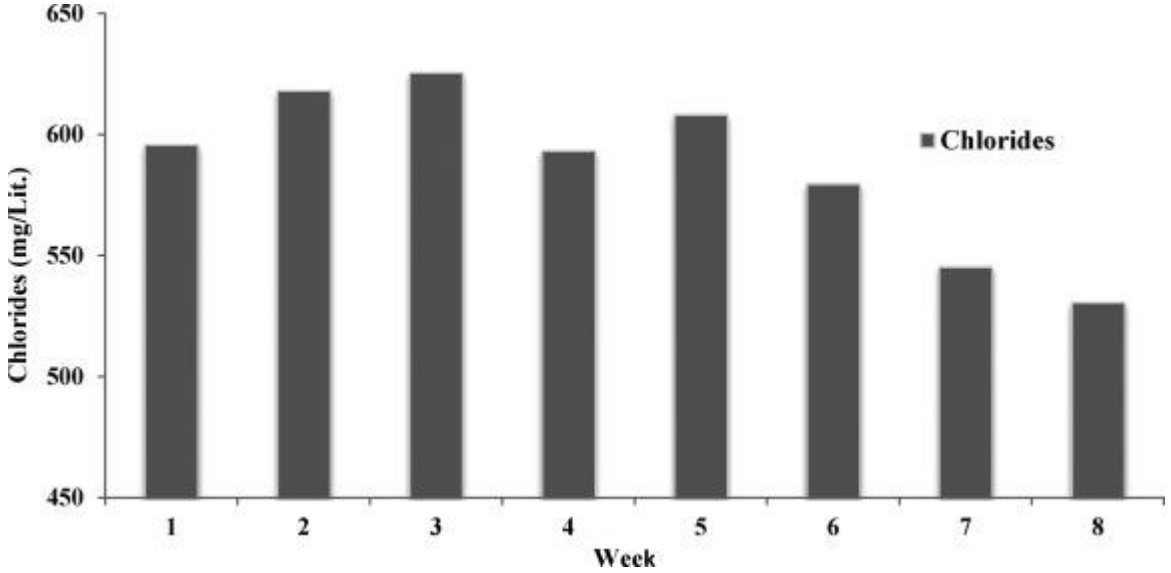
known as Hadoti, the land of the Hadas. Kota lies along the banks of the Chambal river on a high sloping tableland forming a part of the Malwa Plateau. The general slope of the city is towards the north. The comparatively rocky, barren, and elevated land in the southern part of the city descends towards a plain agricultural land in the north. The Mukundara hills run from southeast to northwest axis of the town.Kota has fertile land and greenery with irrigation facilities through canals. The two main canals; called as left main canal (towards Bundi) and right main canal (towards Baran) originate from the reservoir created by Kota Barrage. The tributaries of these canals make up a network in the city and surrounding areas of Rajasthan and Madhya Pradesh and supplements the irrigation of these areas.[5,6]



The Jawahar Sagar Dam is the third dam in the series of Chambal Valley Projects on the Chambal River, located 29 km upstream of Kota city and 26 km downstream of Rana Pratap Sagar dam. It is a concrete gravity dam, 45 meters high and 393 meters long, generating 60 MW of power with an installed capacity of 3 units of 33 MW. Its construction was completed in 1972. The total catchment area of the dam is 27,195 km^2, of which only 1,496 km^2 are in Rajasthan. The free catchment area below Rana Pratap Sagar dam is 2,331 km^2. The dam is located after the Gandhi Sagar Dam and Rana Pratap Sagar Dam, but before the Kota Barrage. The Chambal River (known in ancient times as the Chamranyavati River) raises in the Vindhya Range at an elevation of 853 metres (2,799 ft), 15 kilometres (9.3 mi) west-southwest of the town of Mhow, near Indore. It flows north-northeast through Madhya Pradesh, runs for a time through Rajasthan, then forms the boundary between Rajasthan and Madhya Pradesh before turning southeast to join the Yamuna River in the state of Uttar Pradesh. Its total length from its source to its confluence with the Yamuna River is 900 kilometres (560 mi). [7,8]

The Chambal and its tributaries drain the Malwa region of northwestern Madhya Pradesh, while its tributary, the Banas, which rises in the Aravalli Range, drains southeastern Rajasthan. At its confluence with the Yamuna, the Chambal joins four other rivers – the Yamuna, Kwari, Sind, and Pahuj – at Pachnada near Bhareh in Uttar Pradesh, at the border of the Bhind and Etawah districts. The river is drained by a rain-fed catchment area with an average annual rainfall of 860 millimetres (34 in), a temperature range of between 2 °C (36 °F) and 40 °C (104 °F), and a relative humidity ranging from 30% to 90%.[9,10]

Between 344 kilometres (214 mi) and 440 kilometres (270 mi) from the Chambal's source is an area of deep gorges; the Gandhi Sagar Dam is located in the middle reach of this gorge section. The dam is situated at a distance of 168 kilometres (104 mi) from the district administrative headquarters of Mandsaur.

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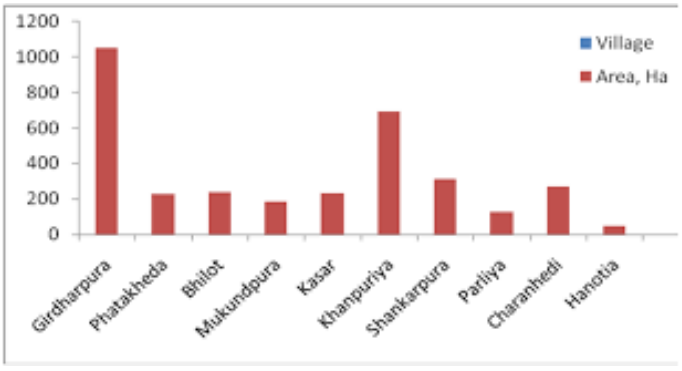
Year	Water from Canal	Tubewell water	No of low fluoride tube wells	Fluoride content after blending	Permissible limit
	MLD	MLD	nos.	ppm	ppm
2021	16	1.92	5.0	0.982	1.5
2022	16	2.14	6.0	1.032	1.5
2023	16	2.37	7.0	1.081	1.5
2024	16	2.60	7.0	1.129	1.5
2025	16	2.83	8.0	1.177	1.5
2026	16	3.06	9.0	1.223	1.5
2027	16	3.29	9.0	1.268	1.5
2028	16	3.53	10.0	1.313	1.5
2029	16	3.76	10.0	1.356	1.5
2030	16	4.00	11.0	1.399	1.5
2031	16	4.23	12.0	1.442	1.5

Discussion

Surface water is an essential natural resource that plays a vital role in human life and has an important role in drinking, irrigation and economic sectors. The quality of river water is crucial in crop production, maintenance of soil productivity, and protection of the environment. The quality of surface water can be affected by different types of activities induced by human, which result from industrial wastes, agricultural processes, municipal and residential activities. The quality assessment of surface water is essential for irrigation purposes. The present study assessed the water quality of Chambal River near Kota city for irrigation purposes. The water quality is analysed for irrigation with the help of IWQI (irrigation water quality index). It is calculated by physiochemical parameters such as EC, Na+,, Cl-,, HCO3 - and SAR. Various irrigation water quality indices such as sodium absorption ratio (SAR), Kelly ratio(KR), soluble sodium percentage (SSP), sodium percentage (Na%), permeability index (PI), magnesium hazard (MH), Residual sodium carbonate (RSC) and Residual sodium bicarbonate (RSBC) are computed to define overall category of irrigation water.[11,12]



The observation period for this work from 1 January 2019 to 31 December 2020. The results outcome from this study that the IWQI values fall under the category of "Good and Suitable" for irrigation purposes. However, SRRT (Shri Raj Rajeshwar Temple), Rangpur, and Keshoraipatan sampling points show the unsuitability of river water in the summer season. This research is an earlier sign of regulating agencies to control and manage river water pollution. Stakeholders should bring new projects to stop the flow of wastewater streams into the Chambal River without treatment. All wastewater streams should be treated in CETP before discharging downstream of the Chambal River. [13,14]

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The crucial role groundwater plays as a decentralized source of drinking water for millions rural and urban families cannot be overstated. It accounts for nearly 80% of the rural domestic water needs, and 50% of the urban water needs in India. The natural impurities in rainwater, which replenishes groundwater systems, get removed while infiltrating through soil strata. But, In India, where groundwater is used intensively for irrigation and industrial purposes, a variety of land and water-based human activities are causing pollution of this precious resource, such as using pesticides for agricultural use. Its over-exploitation is causing aquifer contamination in certain instances. Modern agriculture practices reveal an increase in use of pesticides and fertilizers to meet the food demand of increasing population which results in contamination of the environment. In India crop production increased to 100% but the cropping area has increased marginally by 20%. Pesticides have played a major role in achieving the maximum crop production, but maximum usage and accumulation of pesticide residues was highly toxic to ground water, agricultural land, aquatic life, human life and other ecosystem. Use of pesticides in agriculture may lead to the contamination of groundwater resources. In fact, it has been estimated that less than 0.1% of the pesticide applied to crops actually reaches the target pest and the remaining enters the environment unreasonably and thus contaminates soil, water, and air, in which it can poison or adversely affect nontarget organisms. 9 The World Health Organization (WHO) recommended classification of pesticides by hazardto organism.. Application of banned and expired pesticides, unsustainable and uncontrolled consumption of pesticides, the lack of farmers' knowledge about the safe use of pesticides, and the lack of proper supervision by relevant organizations can cause more contamination of water resources in developing countries. The problem has become more prominent where groundwater aquifers are used as the main source for drinking purposes.[15]

The problem of increasing salinity caused by the rise of water table due to lack of proper drainage is considered as a major environmental problem that threatens the capital investment in irrigated agriculture and its sustainability. Drainage has not been given importance as much as irrigation by the farmers as well as the Government Agencies. So there is a great demand for the concerned research and development efforts to reclaim all the salt affected and water logged soils and bring them back to profitable farming with increased agricultural production as well as cropping intensity. The only means to overcome the salinity and water logging permanently is selection and adoption of suitable Sub Surface Drainage systems. Reclamation of waterlogged saline soils through installation of subsurface drainage system helps to enhance farm income by increasing land productivity. Both cropping intensity and crop yield increased with decrease in soil salinity The main causes of salt accumulation in soils are: (i) use of saline water for irrigation of lands, (ii) seepage from canals, (iii) an arid climate, (iv) evaporation of salty soil waters from the soil surface over shallow and

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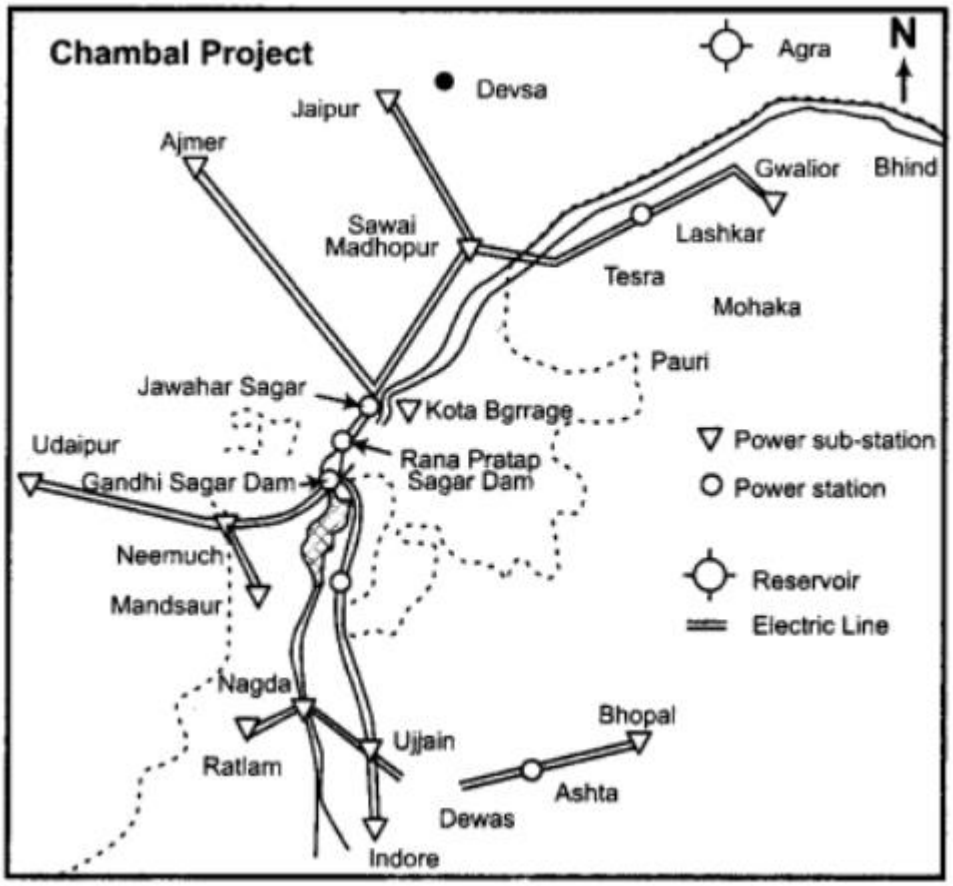
fluctuating water tables and (v) poor drainage. All these factors, either singly or in association with other factors, are responsible for the development of salt affected soils in the world [16]



Results

Water Quality Parameters Different physico-chemical parameters were reported . 12 samples i.e. 6 samples for 2018 year and 6 samples for 2019 year and were analyzed for following parameters: pH, temperature, turbidity, TDS, EC, TA, TH, BOD, COD, Fecal Coliform, Ca^{2+}, Mg^{2+},Na^{+} , K^{+} , Cl^{-} , SO_4^{2-} , NO_3^{-} , PO_4^{3-}, F^{-} and boron dissolved.

Following water quality parameters were studied in the water and compared with standard permissible limits.

pH – An important parameter which represents acidic and alkaline nature of water. It is vital for varied biochemical reactions .Permissible limit for pH in water is 6.5 – 8.5 .Less pH causes tuberculation and corrosion while higher pH causes Incrustation and sediment deposit .

Temperature- A vital parameter which not only influence chemistry of water but also governs biological activity and growth of living organisms. It also influences the different kinds of organisms that can live in water bodies.

Turbidity-Turbidity represents cloudiness of the liquid which is formed by the accumulating individual particles which are not visible by the naked eyes like smoke in air. Permissible limit for turbidity is 5-10 NTU

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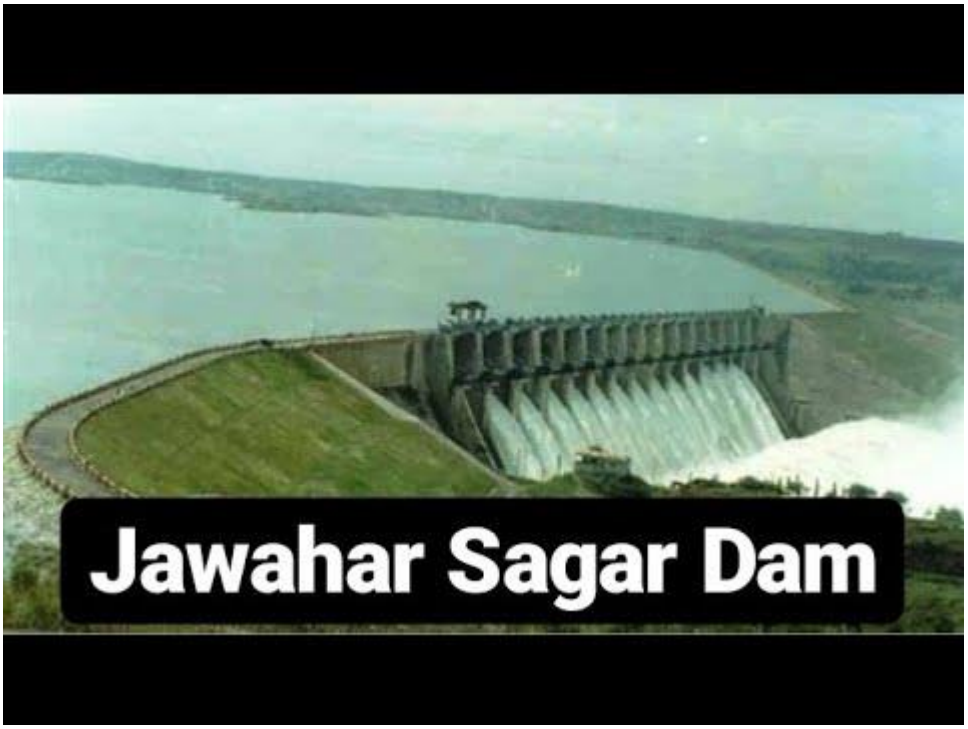

Total Dissolved Solids (TDS)- TDS measures the total amounts of charged ions including minerals, salts or metals dissolved in a given volume of water. It is expressed in mg/lit. TDS originates from natural sources, sewage, urban runoff, chemicals used in water treatment processes, industrial waste water and nature of hardware used in water transport. Permissible limit is 1500mg/lit.

Electrical conductance-The measure of water's capacity to pass electric flow .Electrical conductance is represented in ionized form of dissolved salts and other inorganic chemicals present in the water. This concentration of ionized form contributes to conductance. Permissible limit is 200-1000 µmho/cm.

Total Alkalinity- The measure of the buffering capacity of water or the capacity of bases to neutralize acids. It basically regulates pH of a water body and also maintains the metal content. It refers to the ability of water to resist change in pH. The general level of fresh water for alkalinity level is 20-200 mg/lit.[17]

Total Hardness-An important parameter which is a measure of polyvalent cations in water. Polyvalent cations mainly include concentration of calcium and magnesium including other cations like aluminium, barium, manganese and iron etc also contribute to it. 300 mg/lit is permissible limit of total hardness of water by ICMR. The higher content of the hardness is due to the industrial and chemical affluent with excessive use of lime

Biochemical Oxygen Demand (BOD)-BOD measures the oxygen utilized for the biochemical degradation of organic material(carbonaceous demand) and oxidation of inorganic material such as sulphides and ferrous ions during a specified incubation period. Permissible limit for BOD is 3-5 ppm which represents moderately clean level.

Chemical Oxygen Demand(COD) -The measure of the capacity of water to consume oxygen during the process of decomposition of organic matter and oxidation of inorganic compounds like Ammonia, nitrite. It also means mass of oxygen consumed in Volume of the solution.It is expressed in mg/lit. Ideally COD should be zero.

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Fecal Coliform-A group of total coliforms that are found in the gut and faeces of animals. Fecal coliform bacteria may occur in ambient water as a significance of overflow of domestic sewage. At the same time it may cause some waterborne diseases such as typhoid fever, viral and bacterial gastroenteritis. The acceptable level of coliform should be non-detectable in 100 ml

Calcium- Most abundant natural element present in all natural water sources. The main source is erosion of rocks such as limestone and minerals like calcite. Permissible limit for Calcium is 75-200 mg/lit.Excess amount of calcium concentration causes the less absorption of essential minerals in the human body.

Magnesium- Its higher concentration renders undesirable tastes in water. The main source of magnesium in water is by erosion of rocks and minerals like dolomite or magnetite. Permissible limit of Magnesium is 30-150 mg/lit.

Sodium- Permissible limit for sodium in drinking water must be in range of 30 to 60 mg/lit. Hypertension, Kidney and Heart related diseases are caused by higher concentration of sodium.

Potassium– The lower concentration of potassium is beneficial for humans as well as plants. Hypertension, diabetes, adrenal insufficiency, kidney and heart related diseases are caused by higher concentration of potassium. [15]

Chloride- Chlorides are present in almost all natural water resources. As we all know, the concentration of chloride content varied widely and it is maximum in ocean water. Maximum permissible limit of Chloride ion by WHO 1991 is 200 ppm and maximum allowable limit is 600 ppm. It is considered as essential water quality parameter by affecting its usability and aesthetic property with taste and make it unfit for drinking purpose. Main source of Chloride concentration are formation of rocks and soil with sewage wastes.

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Sulphate –Sulphate is present in almost all drinking natural water sources . The sources for sulphate concentration are rocks and geological formation. The excess amount of sulphate content causes laxative effect.Permissible limit for sulphate is 200-400 mg/lit.

Nitrate–Maximum permissible limit of nitrate is 50 mg/lit. The higher concentration of nitrate causes bluebaby disease or methamoglobinemia.

Phosphate- Permissible range for phosphate is 0.005 to 0.05 mg/lit. Main source of phosphate are sewage and industrial waste disposal in fresh water. Basically it promotes growth of micro-organism.

Fluoride- The controlled addition of fluoride in water supplies to maintain public health is known as water fluoridation. So fluoridated water is used to prevent cavities by maintaining concentration of fluoride in water. Required level is 1.0-1.5mg/lit. Excess concentration causes fluorosis and deformation in joints 3.1.20 Boron Dissolved- Permissible concentration of boron in surface water is 1-5 mg/lit for a day. It is an essential nutrient present in plant [16]

All the samples readings come near to the permissible range for drinking and irrigation use apart few samples which are exceeding the limit due to anthropogenic activities. On the basis of statistical analysis, that all samples are alkaline in nature and are present in permissible range and it shows requirement of mild conditioning agents for drinking and industrial purposes. The concentrations of cations and anions are within the allowable limits for drinking water standards except a few samples. The suitability of water for irrigation is evaluated based on SAR, CAI, % Na, KR and salinity hazards. Most of the samples fall in the suitable range for irrigation purpose based on SAR, CAI, % Na and KR values, but very few samples that are exceeding the permissible limits. These variations are observed to be in different kind of geological areas and different anthropogenic activities were carried in the study area.

Conclusions

Water is the source of the universe, water is the unique nature of nature, unique and such a life-giving wealth, in which every particle has the power of life. Where is water there is life, life is, quickening, the speed , the creation and Water Foundations of life. Where there is no water, there is no life, everything is lifeless and passive. Water is a supernatural boon form of nature, along with

being indispensable for all, humans, animals and vegetation. Modern science also believes that the maximum amount of any element in the human body is water. According to Ayurveda, in our body, the blood, flesh, secretion, bone, marrow and Venus are the seven metals that hold the body. Of these, the share of water is 70 percent in total. Life and soul are safe in the five elements earth, water, fire, air and sky. As soon as the life comes out, they begin to disintegrate and all the five elements of the body merge into the Panchatantra. This is said to be the attainment of the five elements, therefore the most important element for the body is water. Man had understood the importance of water and its necessity along with the emergence of his life. That is why he made the rest of your stay, where water was available. All the ancient civilizations of the world were inhabited by rivers or their valleys. With population growth, as settlements settled away from the river banks, humans began to find other ways of obtaining water, as well as methods of water harvesting, conservation and storage began to be developed. In a civilized life, when man started living in villages and towns in a cluster away from the naturally built reservoir, he also ensured the availability of water and accordingly, by constructing manmade reservoirs, adopting better methods of water management of the fields from the reservoirs. Irrigation, drinking water and other necessities of life met. Today, due to environmental imbalance in the world, problems of both climate and water are beginning to take a very serious form. Concerns about potable water are increasing all over the world. Today, half the world, including India, is facing the crisis of future water crisis as a result of increasing water demand and decreasing water reserves. After a few years, a severe situation of water scarcity is going to come. As long as water is accessible to human beings, we remain unaware of its importance, its unique contribution. Their importance is understandable when they begin to be rare. Nature has given us free hands in our life, such as water and air. Therefore, we are unfamiliar with their pricelessness. But imagine that if it becomes rare even for a short time, then what will be the situation of human and animal life on this earth! Today, the whole country is engaged in thinking about the future conditions of water scarcity, on which research work is being done on a large scale.[17] With this, the glory of water has started pouring on our psyche. The importance of water in human life is not only for the donation of life, but history, culture and even social, economic, religious and political aspects of public life have also been affected by water. Most of the Shodas remedies we worship for the deities have to be completed by water. Water is essential in human personal and social work. Donated Aquarius filled with water, Piaui Lgwakr thirsty water Pilwana, well Bawdi engrave, are known to act by virtue of Prinde Badhavana centuries trees to hit build and birds for pets. In the sixteen rites of our life, water gives birth to them from birth to death. Our important four dhams and shrines are distinguished on the banks of the river. Looking at the history till date, it is known from time to time that there have been formidable wars for this water. While the victorious country made itself powerful by using full amount of water, in the absence of water, many countries have been deprived of power in the face of calamities like straits etc. Due to this water many barren lands became green and due to lack of water, green areas turned into dry desert. The situation of water conservation and storage in the country is worrisome. In the past decades, the water bodies in the villages, towns and cities, the stepwells, the ponds and the ponds have been ruthlessly filled with garbage and soil. There are very few areas of the country where proper water resources are maintained. Now we need to pay serious attention to traditional water sources so that rain water can be stored. The tradition of water management in Rajasthan has been practiced since time immemorial. Here, the work of construction of wells and vapis was considered to be the social and religious responsibility of the rulers. Rainwater was collected at different places in different types of water transmission structures depending on the geographical location, climate, annual average rainfall, and depth of ground water. Palar water directly from the rain which flows directly on the ground was stored in the river and the pond. The waters of the distant waters were drawn out by making wells. In addition to homes and to collect droplets of rain basin, soldering, pulse, johad or Toba, was taken into use for the year by Kdin Jalra Bawdi etc. The spirit of charitable and total gallantry performance was a major contribution behind the construction of these traditional

watersheds. The tradition of engraving articles on the steps started because of the strong desire to keep this karma everlasting. These include date month, Samvat or other information available in the printed commendations, whose study provides unique content of political, social, religious, historical, artistic and literary status of the immediate time along with the time period. Today Rajasthan is the most dry province in the country, as well as the largest state in terms of area, whose area is 10.4 percent of the country's area but the available quantity of surface water is 1.16 percent and the ground water availability is also 1.7 percent. The national average of rainfall is only 531 millimeters. Rainfall is erratic, uneven and scanty. In the last 50 rains, 43 times there has been a famine in the state. Rajasthan, being a desert region, has always struggled with water scarcity. Due to severe heat, changing lifestyles , scarcity of surface water , industrial development and urbanization [10] , less rainfall during monsoon, there has been a huge difference in demand and supply. This gap has been steadily increasing and has come to the fore today in the form of a serious water crisis. In such a situation, the horoscope of Rajasthan has been Manglik in terms of water. In view of the terrible water situation in Rajasthan, it is very important to preserve the water heritage in the future. Looking at the historical background of the tradition of water conservation in the context of Hadoti, it is known that the rulers of the state have taken steps in the direction of conserving the water and rainwater flowing through the bylaws of the Malwa plateau. Public to patronize him control the water flow and the state to provide water for centuries, ponds periodically for it, Bawdion , the message of making building Kundon years water conservation in the East at that time which is an important requirement of the present time is. These traditional watersheds provide protection in the event of rain uncertainty and drought and during the years when there is plenty of water, they reduce the chances of flooding by filling the source and provide water to the common man. Such sources are in abundance in Bundi, Kota , Jhalawar and Bara districts of Hadauti . Hadauti region has been very fortunate from the point of view of rivers, here is the Chambal River flowing year after year. On which dams have been constructed for irrigation and power projects and other small projects like spindle and balapura are under construction for irrigation. But there is still water in the eyes of rivers, so the government is also making efforts to make Hadoti rivers Sadaniira. The plans of the state government to revive the rivers have subsided the rivers Kalisindh, Aru, Ujad, Parvan, Amjhar, Parvati and Ahu. Anicuts have been made on these dry rivers and their fill capacity has been increased by increasing the height of the anicuts. Through these Bhagiratha efforts, Panchayats which have come into the dark zone are being pulled out from the danger, while the fading rivers are being made Sadanira, efforts are also being made to raise the ground water level and recharge and conserve rain water. Efforts are being made to provide water for farming and drinking water by constructing anicuts on these rivers. They can be made the medium of irrigation by digging wells at water leaking places in the land around these anicuts. Public participation and cooperation of private organizations have also been found in these water conservation works, which augurs well for the future. Hadhuti region of Rajasthan has been an area of water heritage since the beginning. The hard-working rulers and people of Hadauti never cursed this curse and destiny of nature, but faced this challenge by considering this curse as a boon and developed a grand tradition of treating these nectar particles of rain. The city of Bundi, which has been famous since ancient times in the name of Chhoti Kashi, is called the city of steps because of its artistic steps, ponds and ponds. Geographical factors such as erratic and low rainfall, inadequate water in rivers and lack of rivers flowing throughout the year are also a major reason for their construction. People Hadhuti ' Jlsth Jivnm' ' theory has a build multiple sources of keeping water accumulation or storage in mind the usefulness of all water adhering. In which problems of water supply can be solved. Here, the water is used for the whole year and even more with the help of large masses by making kunds, stitches and stepwells etc. to collect the drops there. The construction of the ponds has been done with prior scientific view keeping in mind the natural flow of water and the sources of water that the water flows from the plateau is preserved in these ponds and its velocity will gradually decrease. Protected Kota from the strong flow of water coming from the plateau, these ponds are also the sites of folk and cultural

consciousness of that time. Looking at water, the primary requirement of city construction, we find that adequate importance was given to the construction of cities near rivers. Many towns of Hadauti have been built on the banks of rivers.[11] Chandravati, the legendary city of Jhalrapatan, was built by King Durgana on the banks of the Chandrabhaga River. Hadhuti other cities Krishnavilas (luxuriant river), Manohar Thana, Bimgdh, Shergarh (Prvn river), atru (Parvati river), Aslpur (gray river), Akelgdh (Chambal river), the gangdhar (Kalisindh river) to be nestled along the water Indicates importance. Water is the source of the universe, water is the unique nature of nature, unique and such a life-giving wealth, in which every particle has the power of life. Where is water there is life, life is, quickening, the speed, the creation and Water Foundations of life. Where there is no water, there is no life, everything is lifeless and passive. Water is a supernatural boon form of nature, along with being indispensable for all, humans, animals and vegetation. Modern science also believes that the maximum amount of any element in the human body is water. According to Ayurveda, in our body, the blood, flesh, secretion, bone, marrow and Venus are the seven metals that hold the body. Of these, the share of water is 70 percent in total. Life and soul are safe in the five elements earth, water, fire, air and sky. As soon as the life comes out, they begin to disintegrate and all the five elements of the body merge into the Panchatantra. This is said to be the attainment of the five elements, therefore the most important element for the body is water. Man had understood the importance of water and its necessity along with the emergence of his life. That is why he made the rest of your stay, where water was available. All the ancient civilizations of the world were inhabited by rivers or their valleys. With population growth, as settlements settled away from the river banks, humans began to find other ways of obtaining water, as well as methods of water harvesting, conservation and storage began to be developed. In a civilized life, when man started living in villages and towns in a cluster away from the naturally built reservoir, he also ensured the availability of water and accordingly, by constructing manmade reservoirs, adopting better methods of water management, from reservoirs to farms Irrigation, drinking water and other necessities of life met. Today, due to environmental imbalance in the world, problems of both climate and water are beginning to take a very serious form. Concerns about potable water are increasing all over the world. Today, half the world, including India, is facing the crisis of future water crisis as a result of increasing water demand and decreasing water reserves. After a few years, a severe situation of water scarcity is going to come. As long as water is accessible to human beings, we remain unaware of its importance, its unique contribution. Their importance is understandable when they begin to be rare. Nature has given us free hands in our life, such as water and air. Therefore, we are unfamiliar with their pricelessness. But imagine if it becomes rare even for a short time, then what will be the situation on this earth of human and animal life! [12]Today, the whole country is engaged in thinking about the future conditions of water scarcity, on which research work is being done on a large scale. With this, the glory of water has started pouring on our psyche. The importance of water in human life is not only for the donation of life, but history, culture and even social, economic, religious and political aspects of public life have also been affected by water. Most of the Shodas remedies we worship for the deities have to be completed by water. Water is essential in human personal and social work. Donated Aquarius filled with water, Piaui Lgwakr thirsty water Pilwana, well Bawdi engrave, are known to act by virtue of Prinde Badhavana centuries trees to hit build and birds for pets. In the sixteen rites of our life, water gives birth to them from birth to death. Our important four dhams and shrines are distinguished on the banks of the river. Looking at the history till date, it is known from time to time that there have been formidable wars for this water. While the victorious country made itself powerful by using full amount of water, in the absence of water, many countries have been deprived of power in the face of calamities like straits etc. Due to this water many barren lands became green and due to lack of water, green areas turned into dry desert. The situation of water conservation and storage in the country is worrisome. In the past decades, the water bodies in the villages, towns and cities, the stepwells , the ponds and the ponds have been ruthlessly filled with garbage and soil. There are very few areas of the country where proper water resources are

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