SAIRNI RIVER REJUVENATION

'Rivers are the backbone of human civilizations which provide freshwater that is the basic necessity for human life. We cannot live without water and rivers are the largest water bodies for freshwater. In fact, all civilizations in the past and present were born near river banks'. This book is a success story of river rejuvenation which gives a hidden message how the river transforms the life of the people and brings peace & prosperity in the villages nearby.

.....Dr. Vinita Apte,
Founder Director,
TERRE Policy Centre

TERRE Policy Centre
Technology, Education, Research and Rehabilitation for the Environment
Leading platform for development through Alternate Path

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DISCLAIMER

It is hereby declared that the work which is being presented in the paper titled - "SAIRNI RIVER REJUVENATION PROJECT REVIEW: A TRAVALOUGE" A field study paper is submitted for presentation at World Water Week, Stockholm, Sweden on 23 - 27 August 2024. This is an authentic record of my own work carried out during a period from March 2024 to June 2024 under the supervision of Dr. Vinita Apte, Founder Director of TERRE Policy Centre, Pune. The matter presented in this report has not been submitted to any other Institution.

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FORWARD

A few decades ago, even the mere mention of 'Chambal' evoked fear. The region was a desert plagued by water scarcity and poverty, ruled by bandits, making it dangerous to traverse Chambal and its surrounding areas even during the day. Mr. Rajendra Singh and his organization, Tarun Bharat Sangh, pledged to work on the rivers in Rajasthan. They drew up a plan for the Sairni River and its neighboring villages and commenced the actual work.

Creating awareness in the villages around the Sairni River by emphasizing public participation and changing people's mindsets was a formidable task. Passionate about rejuvenating the river, they started digging small ponds in the areas surrounding Sairni. After much effort, the Sairni River began to flow again, and the villages were revitalized. The villages started receiving water, and hands that once earned their livelihood through robbery turned to agricultural work.

It is predicted that the problem of water scarcity will be faced worldwide, and if a third world war occurs, it will be over water, as stated in global reports. To avoid such a situation, our dying rivers must be revived. Activities aimed at rejuvenating rivers are essential. Water brings peace. If every village keeps its river alive, the first step in the fight against climate change is successful.

I am really happy to present this story of the Sairni River in the form of a book. If everyone in the world takes note of this initiative and draws inspiration from it, the global climate change crisis and resulting water scarcity can be more easily overcome. After all, water is life. The Rig Veda (10.9) in Apah Suktam recites the importance of water in life:

आपो हि ष्ठा मयोभुवस्था न ऊर्जे दधातन ।

महे रणाथ चक्षसे ॥१॥

यो वः शिवतमो रसस्तस्य भाजयतेह नः ।

उशतीरिव मातरः ॥२॥

तस्मा अरं गमाम वो यस्य क्षयाय जिन्वथ ।

आपो जनयथा च नः ॥३॥

O Water, because of your presence, the Atmosphere is so refreshing, and imparts us with vigour and strength.
We revere you who gladdens us by your Pure essence.

O Water, this auspicious Sap of yours, please share with us,
Like a Mother desiring (to share her best possession with her children).

O Water, when your invigorating essence goes to one affected by weakness, it enlivens him,
O Water, you are the source of our lives.

I am extremely proud of the work done by Tarun Bharat Sangh and the world-famous Waterman Rajendra Singh. Many thanks to him for giving me the opportunity to witness his work and write a book about it. Thanks also to Colonel Ghanshyam Ugale for collecting all the information and writing this book by exploring in and around Sairni. Gratitude to Manasi Joshi Ranrui from my office for her contribution to the book and Sagar Lakhotiya for beautifully designing it. Dr. Ashutosh Tiwari provided the opportunity to publish this book at the Water Summit organized in Sweden, allowing it to reach audiences worldwide.

…Dr Vinita Apte

Founder Director,
TERRE Policy Centre

PREFACE

Of late numerous initiatives are being undertaken across the world to ensure the sustainable management and availability of water resources to guarantee its easy access for all. Specifically in India an additional emphasis has been given to the Ganga river basin, being one of the largest river basin supporting the biggest population in a country, than by any other river basin in the world. These efforts are in line with SDG6 targets of ensuring the availability of clean water, focusing on drinking water & sanitation for all, the sustainable management of water resources, water quality and integrated water resources management (IWRM), water-related ecosystems and enabling the environmental rejuvenation.

One such initiative is of *Sairni* river rejuvenation, which is being undertaken in the parts of Eastern Rajasthan. This river happens to be a subsidiary of river Parvati (different from other rivers flowing elsewhere with the same name) which in turn feeds river Yamuna, which is the main feeder from the East bank to the river Ganga. This initiative stands out differently from other such programs, since these efforts are being undertaken in the harsh climatic conditions of extreme heat; supplemented with hard sandy/rocky plains in the semi-arid regions of Eastern Rajsthan. The region is generally known as *Brajbhoomi,* where the '*Braj'* dialect of Hindi language is extensively being used. The work is being progressed on the backdrop of challenging social environment of infamous crime and decoity of the Chambal region. Also, it is pertinent to note that the efforts are initiated and executed by the local population itself with the support of NGOs like Tarun Bharat Sangh, few CSR initiatives and the local government bodies in certain cases. Tarun Bharat Sangh happens to be the epicenter of these initiatives, being a major force mobiliser for public participation as well as core planner and coordinator for most of the projects.

This journey of rejuvenation was started around 10 - 12 years back and has now taken a shape of mass public movement in the region. With this movement thousands of people from hundreds of villages are now coming together to support the cause of 'water independence and sustainability through public participation'. I feel fortunate and

privileged to become witness to such a noble initiative from a close perspective and having being able to get this opportunity to take these efforts up to you.

The endeavor here is to have a close view and holistic understanding of the efforts taken on these projects over a period of almost a decade by hundreds of villagers, environmental activists, the volunteers of social welfare organizations and corporate social initiatives. Simultaneously the impacts on ecosystem, socio economic changes and transformations occurred in the surroundings towards bringing peace and stability have also been studied and incorporated in the report.

All major villages in the river basin have been visited and almost more than 100 villagers have personally been interviewed while formulating the report. To negate the likelihood of monotony in the reading and to give the firsthand experience of this journey to the readers; the report is structured in a travelogue format where the 'one on one' interactions with the villagers and visits to various rejuvenation sites have been penned down as it is. It is also followed by judicious and humble analysis of the situations from a layman point of view.

It is expected not to misunderstand the report as an evaluation of particular agency to cast an opinion or a critical analysis of the project conducted to find out faults in the system. However, it is purely a soulful journey of a river rejuvenation initiative by a passionate traveler cum environmental enthusiast with an aim to take the hard work done by other such passionate people up to the global masses to increase its visibility and spread the awareness about the noble work done.

An attempt has been made at the end of the report to put forward a consolidated action program for holistic upliftment of the region through whole basin approach to achieve desired SDG6 goals for this region. The aim of this report can only be considered to be achieved, if this work motivates few others to take on such similar initiatives in their parts of the world or helps in sharing knowledge and innovative ideas for the projects already under progress elsewhere.

…Lt Col Ghansham Ugale

The Author

ACKNOWLEDGEMENTS

"Sairni river rejuvenation project review: a travelogue," a field study paper is a result of the complete faith and confidence shown by Dr Vinita Apte, Founder Director of Terre Foundation (Policy Center), Pune in me to take on this herculean task. Constant motivation and guidance provided by her was the driving force behind the completion of this significant mission. I would like to pay my sincere gratitude to her and Terre Foundation for giving this opportunity to me and persistently sailing this project till its destination by providing her humble support.

I would like to pay my sincere thanks to Dr Chaitanya Ugale, Academic Administrator of Chinmay International Foundation, Veliyanad for becoming the pillar of strength for me and providing valuable technical guidance on structuring this document and research methodology. I would also like to thank my dear friend Capt Mary Thomas from the bottom of my heart for taking the pain of editing the report at a very short notice inspite of her commitments and validating the same with her vast experience with 'Namami Gange' Project of NMCG. The successful culmination of this project was not possible without the kind support from both of the above well-wishers.

At the end, I would like to extend my respectful greetings to all the villagers of the villages of Sairni river basin and volunteers of Tarun Bharat Sangh for their invaluable efforts towards the cause of river rejuvenation. A special thanks to Mr Ranbeer Singh Gurjar, District Coordinator of Dholpur District for Tarun Bharat Sangh for assisting as a guide and interpreter throughout this journey of transformation of the Sairni river basin.

Finally, I am obliged to, & dedicate this research to my Mother, & my Life Companion, & my Children, along with all my Family members for their unwavering love, intellectual aid, enthusiastic backing, endless motivation, & unmatched endurance in fulfilling this extensive research work.

……**Lt Col Ghansham Ugale**

Lucknow

01 June 2024

1. EXECUTIVE SUMMERY

"Water directly supports billions of livelihoods and can promote peace."

- UN World Water Development Report 2024

According to the United Nations World Water Report 2024 water security leads to prosperity and peace, while the hardships of conflict are amplified through water. Water nurtures prosperity by meeting basic human needs, supporting health, livelihoods and economic development, underpinning food and energy security, and defending environmental integrity. Water influences the economy in many ways, and global trade dynamics and market adaptations can have direct repercussions on the water use of regional and local economies. The water-related impacts of conflict are multi-faceted and often indirect, such as those linked to forced migration and increased exposure to health threats. Climate change, geopolitical unrest, pandemics, mass migration, hyperinflation and other crises can exacerbate water access inequalities. In nearly all cases, the poorest and most vulnerable groups are those that suffer the greatest risks to

their well-being. The 2024 edition of the United Nations World Water Development Report (UN WWDR) calls attention to the complex and interlinked relationships between water, prosperity and peace, describing how progress in one dimension can have positive, often essential, repercussions on the others. The water revolution taken place over a decade in the Sairni river basis is indeed an ideal example of this interlinking relationship.

Constant desertification is happening in the areas of Rajsthan due to the gradual depletion of forests and tree cover in the state. The entire state falls under the arid and semi-arid region with merely 9.5 % of recorded forest cover of total geographical area. This is further depleted to 7.2% of green cover (to include 4.8 % of forest cover and 2.42 % of balance tree cover) as per the State Forest Report 2017 published by the Forest Survey of India which is based on the interpretation of the available satellite data. Due to the scanty rainfall percentage in the region, supplemented by the depleting forest cover and ever receding ground water levels the effects of rising temperature and subsequent desertification are imminent.dec

This definitely have a visible and direct impact on the livelihood of local population through draught conditions, food crisis, economic instability and water scarcity. These conditions are translating into the numerous socio-economic problems such as poverty, malnutrition, exploitation, migration, crime and justice, etc.

It is time and again proven in the past that these kinds of problems with the complex nature have an onerous solution of holistic environmental upgradation of the region by intensive human intervention programs. Mass public participation movements have the power to reverse these kind of situations by reducing biotic and abiotic pressures on the eco systems and at the same time making simultaneous avenues for the conservation of the resources. This kind of strategy pays enormous results, though slow in implementation it successfully works in achieving the long-time gains.

India as a country has seen numerous such social movements in the past which have proved the significance of public participation in the environmental restoration works. May it be reforestation for arresting desertification, revival of dead rivers and lakes, rejuvenation of polluted streams or reinstating certain endangered species to protect wildlife etc., the local population of the region always remained on forefront to stabilise the fragile ecosystems through human intervention. The positive impacts of their

determined actions on the environment are always visible. Even at this moment there are hundreds of such projects presently under progress in the various parts of the country to resolve such complex issues. Most of them are technology driven and led by the young generation leaders.

Sairni river rejuvenation is one of such efforts which is being undertaken in the Karauli-Dholpur region of the Eastern part of Rajasthan. This study is aimed at carrying out the holistic assessment of the problems of this region, actions taken by the various groups of villagers and environmental activists to address the issue and their subsequent impact on the eco system in particular and the society in general.

The report is the outcome of extensive field visits of restoration sites, personal interactions with the village team members & volunteers, observations noted during the journey and study of the region through various publications and study material available in the open domain as cited under the bibliography section at the end. A set of an extensive Post-Transformation Community Assessment Questionnaire (refer Annexure F) was used while interacting with the participants of the study for collection of the authenticate data and the same is attached at the Annexure. The field study is documented in the form of audio and video recordings and actual site photographs which are sited at the appropriate places.

2. The Awakening of Sairni

The Sairni river flows through the district of Lalitpur. This river was once clean and pure. When this river got polluted, the livelihoods of the people here also began to die. Due to the shortage of water, agriculture could not flourish, and people started becoming sick and dying. Malnutrition, disease, and famine began to spread. However, death does not resolve anything! Therefore, people stood up and did whatever they could to survive. This entire region was plagued by drought, water scarcity, and climate change. Life in this area was not protected. An unprotected life inevitably leads to death. Thus, the people living near the banks of this river also started to perish.

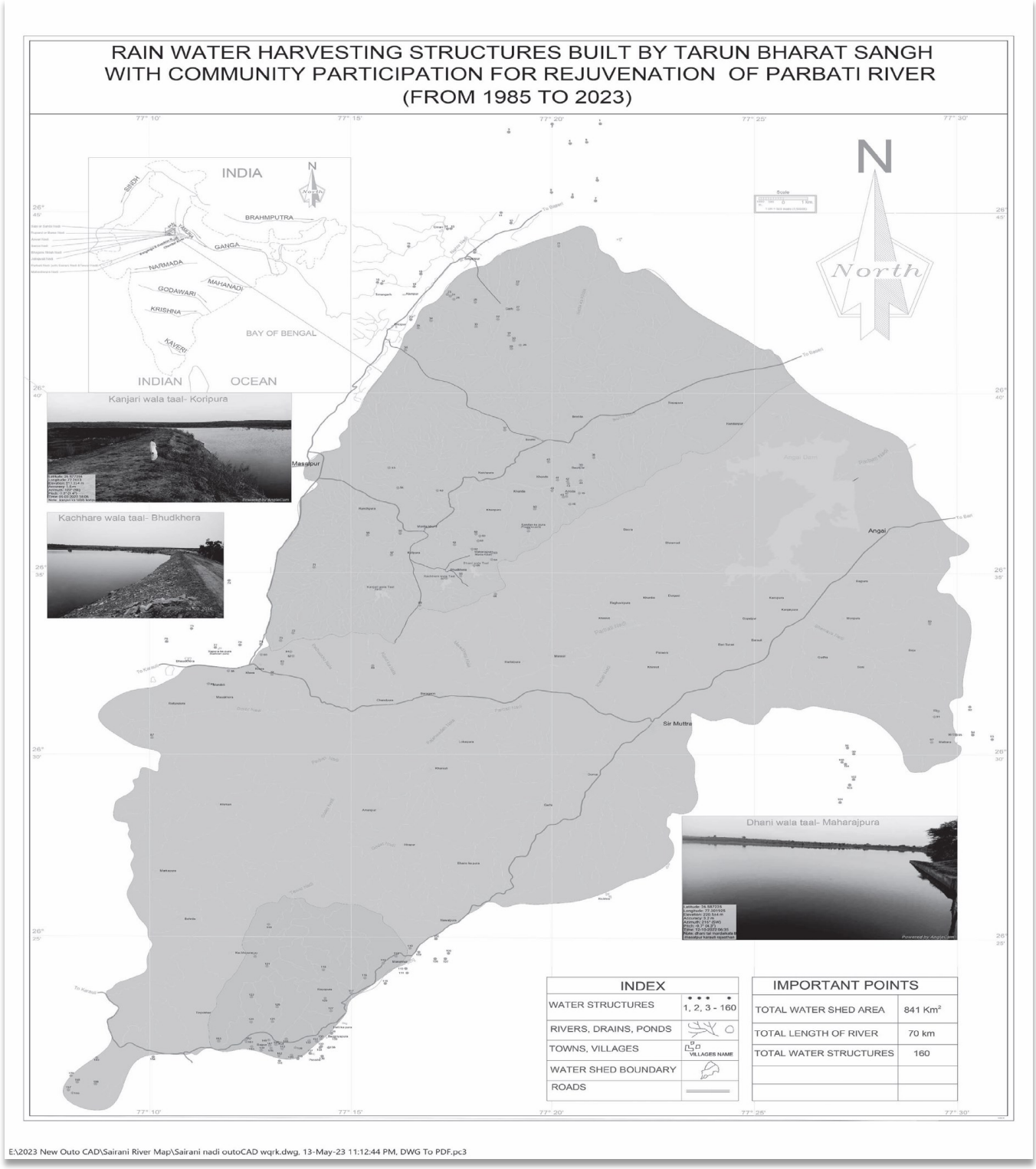
We all know that all civilizations in the world are established and thrive along the banks of rivers, and they also perish with the rivers. The Sairni River revived itself before the civilization here could perish. When the society here was devastated, first the river dried up, and then the society withered. Now that the river has revived, it has also revived its society. We forget that humans, who are created by the five great elements and nature, wither away when love and trust towards these elements diminish. The process of revival of rivers begins with the increase of human love towards them.

The confluence of the Sarju and Parvati rivers forms a total wetland area of 841 square kilometers. So far, the Indian government has constructed a total of 160 water structures here. However, the conservation and coordination efforts for this wetland area are slightly lacking, and more work is needed. In the Sarju river wetland area, there are 11 small streams (less than 500 hectares) and 7 large streams (more than 500 hectares).

The Parvati river has the largest channel, which is 70 kilometers long. This river is formed by five rivers: Rohin, Goms, Kakar, Bhemai, and Sarju. Additionally, five lakes named Jharnes, Gojer, Chachka Khol, Kund, and Manikarak are included in this. The largest channel is known as the Rohin river, on which the Indian government has worked entirely. This river also includes smaller 5-watt reservoirs.

The Parvati river is a mix of five large reservoirs and five small rivers, making it a river of 22 large reservoirs and 43 small ones. Both the Sarju and Parvati rivers contain uniform sedimentary rocks (strata). The rocks here are light-colored with very little clay. The ancient soil in this area contained clay that mixed with the soil to form the current loamy clay, which has turned sandy and silty. This way, about 7 percent of the wetland

area is clayey soil, with more soil being sandy and loamy. The clay content is very low in the soil now, but with water activities, the clay content is gradually increasing.



Water availability has driven intense agricultural activity in the past five years, with people cultivating any land where they find clay. Seven types of clay are found in both rivers' wetland areas, leading to the construction of seven different water structures. The

clay-containing areas have been used to create ponds, reservoirs, and irrigation channels. Of the 160 water structures, most are clay-based, which provides water for irrigation purposes. In addition to irrigation, embankments, and drainage canals have been constructed. Thus, different types of water structures have been constructed in different areas. The land's structure has been understood to create these water structures.

The vast wetland areas of the Parvati and Sarju rivers have 93 large water structures, while 160 water structures are under construction, including embankments, levees, and drainage channels. Some of the wetland areas in the Ujhari river consist of a single water structure in one square kilometer, but here, due to the relatively larger water structures, the average capacity of one water structure is approximately 4.50 million liters.

The wetland area of Khamoda is 3 square kilometers, providing about 23 million liters of water from its reservoirs. Similarly, the double reservoir in Kanchipur produces water. The wetland area of Khamoda's watershed is 3 square kilometers, with a total of 42 hectares, having an estimated capacity of 1 lakh square meters. The maximum height

of the bund is 97.50 meters, with the top level being 100.50 meters. The minimum height is 88.84 meters. The maximum water depth is 8.66 meters, with an average water depth of 2.77 meters. The height of the bund is 3 meters, the width is 15 meters, and the estimated depth of the water is 1.5 meters, with a total volume of 2096 cubic meters. Thus, the total water volume of the bund is around 54.23 lakh cubic meters.

Similarly, Kanchipur bund has a larger capacity, around 60 million liters. Some of the bunds have a storage capacity of 40 million liters, and some have 20 million liters. Thus, the three types of water structures together hold an average of around 4500 crore liters of water. This includes around 3,000 million liters of water stored in the structures. The total capacity is 3,201 million liters, showing us how much water can be stored and how much land can be irrigated.

In the early days, these people were not involved, but gradually, when the villages changed, they started living in the village. Leaving intoxication, they started farming with a new mindset. The stress of intoxication, poverty, and illness disappeared, and now they live happily with everyone, giving love and respect. These seven types of clay structures were formed due to the effort of the people. It provided an alternative source of income beyond the conventional farming income within five years.

The health of the Sarju and Parvati rivers is improving. Therefore, people are now thinking more positively. Earlier, people were suspicious, doubting each other, and staying awake day and night, but now they are healthy and starting to live together with everyone, leaving behind their old lifestyle. This change in thought is significant as it encourages living together and freeing oneself from the troubles of life. This freedom brings about positive thoughts for the future.

Previously, there was turmoil, but now it has become ultimate peace, with the help of Rajasthan Police and the judiciary. They have given them the opportunity to understand and guide a better life, and now they are moving forward with a common lifestyle. The

earlier job of stealing, fighting, and living with discord is now over. Now they live with everyone in love and respect, giving everyone faith and taking care of everyone. They have gained this realization through water. As soon as they started farming, they felt the freedom from stress. This change in Sarju and Parvati brings prosperity and makes the villages and regions lively. Leaving intoxication, people started living happily with everyone, and this positive change spread widely.

This good change in the Sarju and Parvati rivers began 37 years ago from the Kevalanandpur area of Lokmanya Kashi. Then, seeing the work there, the villagers of Dhanpal and Vishnupur also started working in their areas. The villagers became active and initiated development in their regions. The influence of the Kaveri and Maheshwar rivers was also significant here. A major conference was held in Chitwara village, influencing these people greatly. After that, they requested the Indian Government to be involved in their area, and the Indian Government started working there. Now, this work has become the priority of the Indian Government. Thus, all the good work done here has been done by the villagers, and the cooperation of the Indian Government made this possible. Their participation made this work grow further.

Initially, not everyone was involved, but gradually, the change occurred, and they started living in the village. Leaving intoxication, they started farming with a new mindset, and the stress of intoxication, poverty, and illness disappeared. Now they live happily with everyone, giving love and respect. This change in thought has brought about significant improvements in their lives.

3. Overview of the Sairni River Basin and Its Significance

Nestled between the Dholpur and Karauli districts of Eastern Rajasthan, the Sairni River basin holds a pivotal place in the region's ecology and community life. Positioned on the northern side of the Karauli-Dholpur highway (NH 23), the Sairni River serves as a crucial feeder for the Parvati Dam, located in Angai village. This dam boasts a water holding capacity of approximately 120 million cubic meters. As the river flows beyond the dam, it takes on the name Parvati River, eventually joining the Yamuna River near Allahadpur in Uttar Pradesh.

The Sairni River boasts a catchment area of around 188 square kilometers, encompassing approximately 20 villages within an 80-kilometer perimeter. The river's meandering course stretches for about 30 kilometers, winding through the dry, rocky terrain characteristic of Eastern Rajasthan. The region's catchment area, sparsely cultivated and supporting a relatively low population density, includes both natural and numerous man-made dams and waterworks. While many of these structures hold water seasonally, only a few larger ones provide a perennial source of water. According to the Department of Irrigation, Government of Rajasthan, the region experiences low annual rainfall, averaging just 686 mm.

The literacy rate in the area is notably low, with farming and sandstone mining serving as the primary sources of income. The Sairni River's general alignment follows a southwest to northeast direction, veering southeast towards its end as it culminates in the Parvati reservoir. The catchment area is bordered by NH 24 to the south and high grounds running from Kheda, Kasara, Masalpur, and Garh Mandora to the north and northwest. Further, a watershed line along Thekra, north of Sajnapur, south of Bhur Kheda, Maharajpur, and Sandan ka Pura up to Piprani causes the river to course northeast. Natural fault lines along Garh Mandora, Barman, and Ban Sarai villages in the northeast confine the river's flow to the eastern and southeastern sides, ultimately merging it into the Parvati Dam alongside the Tewar River and other minor streams near Angai village.

Parvati Dam

Historically, the Sairni River was a perennial source of water, forming the backbone of livelihood for the adjacent villages. However, inconsistent rainfall patterns, unwarranted exploitation of groundwater, a dwindling green cover, and the lack of alternative means to retain rainwater for subsequent percolation into underground aquifers have severely impacted the river. Now, the Sairni flows only during the monsoon, drying up in the summer months. This seasonal flow forces farmers to rely solely on the unpredictable annual rainfall, which often fails to guarantee even a single crop yield per year.

The extensive exploitation of water, initially from open wells and later from bore wells, further exacerbated the problem, rendering even drinking water scarce. This severe water scarcity led to significant migration out of the river basin, with many remaining residents turning to the physically strenuous and hazardous job of stone mining. Those

left with no other options were often driven to unlawful activities to meet their livelihood needs.

The rejuvenation of the Sairni River thus represents more than just an environmental endeavour; it is a critical lifeline for restoring the agricultural productivity, economic stability, and social fabric of the region's communities.

The Sairni River basin is nestled between the majestic Vindhyan and Aravali ranges, situated in the Flood Prone Eastern Plains Agro-Climatic Zone. This classification, designated by the Department of Agriculture, Government of Rajasthan, highlights the unique and challenging environmental conditions of the area.

The eastern part of the basin is characterized by alluvial soils prone to waterlogging, reflecting their recently alluvial and calcareous nature. These fertile yet often waterlogged soils support a diverse array of crops. During the kharif season, the fields come alive with pearl millet, groundnut, and cluster bean. In the cooler rabbi season, wheat, mustard, barley, and gram dominate the landscape, showcasing the agricultural resilience and adaptability of the local farmers.

The terrain itself is a captivating mix of hills and broken grounds, known locally as Dang. This rugged landscape is marked by elevations that range from 220 meters near the river's merger into the Parvati Dam to 350 meters at the highest point near Garh Mandora. The varied topography presents both opportunities and challenges for water management and agriculture.

As one moves through the basin, the dramatic changes in elevation and the stark beauty of the hills create a sense of awe. The land, shaped by centuries of geological and hydrological processes, tells a story of resilience and adaptation. The Dang region, with its broken grounds and hills, offers a glimpse into the area's historical struggles and triumphs in water conservation and agricultural innovation.

The Sairni River's journey through this diverse terrain not only supports the livelihoods of the local communities but also contributes to the ecological balance of the region. The interplay of elevation, soil types, and climatic conditions creates a dynamic environment that has shaped the lives of those who call this basin home.

3.1. Ecological and Cultural Significance

The Sairani River, a tributary of the larger Parvati River, was more than just a water source. Its presence dictated the rhythms of life for the communities along its course. During the scorching summers, when the sun beat down relentlessly on the desert landscape, the river provided a cool respite—a sanctuary where flora and fauna found refuge. The banks of the river were adorned with babool trees, cacti, and thorny bushes, resilient to the harsh climate, while desert animals like foxes and jackals roamed its sandy shores.

As the monsoon clouds gathered on the horizon, the Sairani River underwent a miraculous transformation. Swollen with rainwater, it burst forth with life, bringing fertility to the otherwise parched land. The once-dry riverbeds filled with flowing water, nourishing the soil and creating oases of greenery. Fishes returned to its waters, and migratory birds, like cranes, graced its shores—a testament to its rejuvenating power.

3.2. Historical Use and Management

For centuries, the villagers along the Sairani River practiced a delicate balance of utilizing and preserving its waters. Ancient techniques of water harvesting, passed down through generations, ensured that every drop was cherished. Traditional methods such as building small dams from local stones and creating earthen bunds helped in retaining water during the monsoon, replenishing groundwater levels and sustaining agriculture throughout the year.

The river was not only a source of sustenance but also a cultural anchor for the communities. Festivals were celebrated along its banks, honouring its life-giving waters with rituals and prayers. Villagers gathered at dawn to fetch water, sharing stories and songs that spoke of the river's bounty and the wisdom of conserving its gifts for future generations.

3.3. The Story Continues

However, as time marched forward, the Sairani River faced unprecedented challenges. Rapid urbanization, industrialization, and changing agricultural practices began to strain its once-abundant waters. The delicate balance between human needs and ecological health started to tilt, threatening the river's vitality.

3.4. A Call to Action

Realizing the impending crisis, visionary leaders and local communities joined hands to embark on a journey of rejuvenation. Organizations like Tarun Bharat Sangh and dedicated villagers pooled their resources and knowledge to revive the Sairani River. They constructed check dams, implemented water conservation practices, and raised awareness about sustainable living.

Through concerted efforts, the river began to heal. Its flow became more consistent, biodiversity flourished, and once-dry lands turned green again. The return of prosperity to the villages mirrored the resurgence of the Sairani River—a symbol of resilience and hope for sustainable development in the region.

Today, the story of the Sairani River stands as a testament to the power of community action and environmental stewardship. It teaches us that by honouring our ecological heritage and embracing sustainable practices, we can forge a future where rivers flow

freely, ecosystems thrive, and cultures endure. As we look ahead, let the story of the Sairani River inspire us to cherish and protect our natural resources for generations to come.

Deep in the heart of Rajasthan, where the golden sands stretch as far as the eye can see, lies the once-vibrant Sairani River, now a shadow of its former self. This is a tale of environmental degradation and human impact, where the fate of a river intertwined with the actions of its inhabitants.

4. Causes of Depletion

4.1. Environmental Factors Leading to Depletion

The story of the Sairani River's decline begins with the harsh realities of its environment. Rajasthan, known for its desert landscape and sparse vegetation, relies heavily on monsoon rains to sustain its water sources. The Sairani River, a lifeline for countless villages, is no exception. As climate patterns shifted and rainfall became more erratic, the river struggled to maintain its flow.

The natural vegetation along the riverbanks, crucial for soil stability and water retention, dwindled over time. Babool trees and thorny bushes, once abundant, were cleared for agriculture or used as firewood. This deforestation exacerbated soil erosion, causing sediment to choke the riverbed and reduce water-holding capacity during monsoons.

4.2. Human Activities Contributing to Decline

As the population grew and agricultural practices intensified, the demand for water soared. Farmers, reliant on the river for irrigation, dug deeper wells and constructed unregulated dams to divert water for their fields. These actions disrupted the natural flow of the river, leading to reduced water levels downstream and affecting ecosystems dependent on seasonal floods.

Industrialization brought its own set of challenges. Factories sprung up along the riverbanks, releasing untreated effluents laden with chemicals and pollutants into its waters. Industrial waste poisoned aquatic life and contaminated groundwater, rendering it unfit for consumption or agricultural use.

4.3. The Tale of a Changing Landscape

In the villages along the Sairani River, signs of distress were visible. Once-fertile fields turned barren as groundwater levels plummeted. Fish populations dwindled, and migratory birds no longer graced the skies above. The river, once a source of life, became a symbol of struggle and scarcity.

4.4. Awakening to Conservation

Realizing the gravity of the situation, community leaders and environmental activists rallied together. Organizations like Tarun Bharat Sangh began advocating for sustainable practices and restoring traditional water harvesting techniques. Villagers participated in tree-planting drives and constructed check dams to slow the flow of water and replenish groundwater levels.

4.5. A New Chapter of Hope

Through concerted efforts, the tide began to turn for the Sairani River. Awareness campaigns educated villagers on the importance of conservation, encouraging them to use water judiciously and adopt eco-friendly farming practices. Efforts to restore riparian vegetation and regulate industrial discharges helped revive aquatic biodiversity and improve water quality.

Meetings with local community

Awareness Campaign

Today, as the Sairani River flows with renewed vigour, it serves as a testament to the resilience of nature and the power of community action. The story of its depletion and subsequent rejuvenation stands as a reminder of our collective responsibility to safeguard our natural resources for future generations. It teaches us that with determination and cooperation even the most depleted rivers can regain their vitality and thrive once more in harmony with their surroundings.

5. The Impact on Local Communities

The depletion of the Sairni river had profound effects on the local communities, impacting them economically, socially, and psychologically.

5.1. Economic Effects: Loss of Agricultural Productivity, Reduced Water Availability

In the village of Garh Mandora, the once-thriving fields that provided sustenance and income for families had turned barren. Farmers like Anil, who had cultivated wheat and vegetables for decades, now faced a stark reality. "Our crops depended on the river," Anil explained, his voice tinged with despair. "But as the water levels dropped, so did our yields."

The reduced water availability meant that irrigation systems fell into disrepair, and the once-fertile land could no longer support the same level of agricultural productivity. Anil's family, like many others, struggled to make ends meet, leading to a decline in the local economy. The market, once bustling with activity, now saw fewer customers and a dwindling supply of fresh produce.

5.2. Social Effects: Migration, Health Issues, Changes in Lifestyle

As the river's water dwindled, so did the population of the village. Families who had lived there for generations began to migrate to cities in search of better opportunities. Among them was Meera, a young mother who had to leave her ancestral home. "We had no choice," she said, packing her

belongings. "Without water, we couldn't farm, and without farming, there was no livelihood."

The migration led to fragmented communities and a loss of the close-knit social fabric that had defined the village for years. Those who remained faced severe health issues due to contaminated water sources and poor sanitation. Children frequently fell ill, and the local clinic was often overwhelmed. "We see so many cases of waterborne diseases," noted Dr. Sharma, the village doctor. "It's heartbreaking."

5.3. Psychological Effects: Stress, Loss of Cultural Heritage

The psychological toll on the villagers was immense. The stress of losing their primary source of income, coupled with the uncertainty of the future, weighed heavily on everyone. "I often lie awake at night," admitted Ramesh, a farmer. "Worrying about how to feed my family and what the future holds."

The loss of the river also meant the loss of cultural heritage. The Sairni river was more than just a water source; it was a lifeline that connected the community through festivals, rituals, and daily life. "Our festivals revolved around the river," reminisced Asha, an elderly villager. "Now, those traditions feel hollow without it."

5.4. A Glimpse of Hope

Despite the hardships, there was a glimmer of hope. Community leaders, supported by NGOs and local government initiatives, began to explore sustainable practices to rejuvenate the river and restore agricultural productivity. Rainwater harvesting, check dams, and community-led water management projects started to show promise.

Vikram, a local youth, shared his optimism. "We are learning new ways to conserve water and improve our farming techniques. It's not easy, but we believe in a better future."

In the face of adversity, the resilience of the Sairni river basin communities shone through. Their collective efforts to address economic, social, and psychological challenges reflected a deep-rooted commitment to not only survive but thrive, ensuring that future generations could once again prosper by the river's side.

Tarun Bharat Sangh: An Overview

- History and philosophy of TBS
- Key figures and leaders in the organization

Tarun Bharat Sangh: Guardians of Water and Nature

Nestled in the heart of Bheekampura, Alwar, Rajasthan, Tarun Bharat Sangh (TBS) stands as a beacon of environmental stewardship and community resilience. This non-profit environmental NGO, under the visionary leadership of Rajendra Singh since 1985, has carved a niche in the annals of sustainable development and water management.

From its inception, TBS embarked on a mission to tackle the pressing issue of water scarcity. Understanding the intrinsic relationship between communities and their natural resources, TBS began mobilizing villagers, guiding them to revive and rejuvenate their traditional water management systems. These efforts materialized through the construction of johads (small earthen check dams), anicuts (stone check dams), and bunds (embankments) designed for rainwater harvesting. These structures, vital for capturing and conserving water, were built through shramdan (voluntary labor) and partially funded by TBS.

The strength of TBS lies in its ability to build upon the existing cultural traditions of the region. By rekindling the ancient bond of unity with nature, TBS has fostered an ethos of integrated ecosystem development. This cultural revival has not only brought communities together but also reinstated a deep-seated respect for the environment.

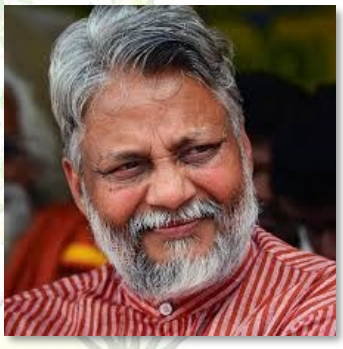
TBS's impact is far-reaching, extending to around 1,000 villages across 15 districts of Rajasthan. Their efforts have led to the rejuvenation of 11 rivers, including the Ruparel, Sarsa, Arvari, Bhagani, Jahajwali, and Shabi. These rivers, once lifeless and dry, now flow with vitality, bringing life and hope to the regions they traverse. Additionally, TBS has established approximately 11,800 johads, significantly boosting the water security of these areas.

The profound impact of TBS's work was recognized globally when they were awarded the prestigious Stockholm Water Prize in 2015. This accolade is a testament to their relentless dedication and innovative approach to water conservation.

In the present day, TBS continues to focus on ensuring access to water through the rejuvenation of water resources. Their mission has expanded to address critical issues such as human-wildlife conflicts and combating the mining mafias that threaten the local ecosystems. Through these multifaceted efforts, TBS strives to safeguard the environmental and social fabric of the communities it serves.

Tarun Bharat Sangh's journey is a testament to the power of community, tradition, and unwavering dedication to the environment. Their story is one of hope and resilience, demonstrating that through collective effort and respect for nature, even the most pressing challenges can be overcome.

History of Tarun Bharat Sangh



Rajendra Singh, founder of the Tarun Bharat Sangh NGO, explaining the use of a johad to the students of TERI University in Alwar district of Rajasthan.

Tarun Bharat Sangh (TBS) was founded in 1975 in Jaipur by a group of visionary students and professors from the University of Rajasthan. Initially, the organization focused on various social and educational initiatives. However, a significant shift occurred in 1985 when four young members of TBS moved to the rural area of Alwar with the aim of teaching rural children and fostering rural development. Among them, Rajendra Singh stood out as the most dedicated, choosing to stay when the others departed.

Rajendra Singh engaged deeply with the local community, seeking to understand their most pressing needs. Through these interactions, he discovered that the villagers were in dire need of a reliable water supply. This revelation set the course for TBS's future endeavors. With the support and collaboration of the villagers, Singh spearheaded the construction of a johad, a traditional rainwater storage tank. This simple yet effective method of water conservation became the cornerstone of TBS's efforts to address water scarcity and rejuvenate the local environment.

Rajendra Singh's initiative marked the beginning of TBS's transformation into a pioneering environmental NGO, dedicated to restoring traditional water management systems and fostering sustainable development in rural Rajasthan. The success of the johad project ignited a movement that would eventually lead to the revival of numerous water bodies and rivers, significantly improving the livelihoods and resilience of countless communities across the region.

Rejuvenating Rivers

Tarun Bharat Sangh (TBS) has been instrumental in the construction of 11,800 johads, achieving this monumental task through the active involvement and contribution of villagers. Their efforts have not only rejuvenated water bodies but also fostered a strong sense of community and environmental stewardship.

A notable initiative by TBS is the Arvari Sansad, a community parliament that emerged following the successful rejuvenation of the Arvari River. This innovative approach, spearheaded by Dr. Rajendra Singh, represents 72 villages that convene twice a year. The primary objective of the Arvari Sansad is to safeguard and integrate the community's water management efforts within the river catchments. It also plays a crucial role in protecting the community from exploitation by fish harvesting contractors.

Another significant initiative is the Rashtriya Jal Biradari (National Water Brotherhood), established during the national water convention in April 2001. This organization mobilizes local communities across India to engage in water conservation efforts. With over 1,000 members, the Rashtriya Jal Biradari focuses on the "Save the River" campaign, striving to protect and rejuvenate rivers nationwide.

In addition, the Rashtriya Jal Chetna (National Water Awareness Campaign) seeks to raise awareness about the adverse effects of the Indian government's National Water Policy, particularly the plan to link 37 rivers across the country. Over 14 months, this campaign reached 320 districts in 30 states, engaging concerned individuals in 90 cities and four metropolises.

Through these initiatives, TBS continues to make significant strides in water conservation and community empowerment, fostering a sustainable future for India's water resources and its people.

5.5. A Vision Takes Shape

Amidst the desolation, a group of dedicated environmentalists and local leaders envisioned a future where the Sairni River would once again flow freely, bringing life back to the region. Their goals were ambitious but necessary:

1. **Revive the River:** To restore a perennial flow in the Sairni River.
2. **Enhance Water Storage:** To improve water retention and management.
3. **Promote Sustainable Agriculture:** To introduce eco-friendly farming practices.
4. **Engage Communities:** To involve locals in the conservation efforts.
5. **Preserve Cultural Heritage:** To bring back the traditions linked to the river.

5.6. Overcoming Skepticism

The journey began with conversations. Village elders, who had seen many failed attempts, were understandably skeptical. Meetings were held under the ancient banyan tree in the village square, where stories of past efforts and failures were shared. But this time, the project leaders listened more than they spoke. They asked for the villagers' ideas and incorporated their wisdom into the plans.

Pilot projects were initiated to showcase the potential benefits. Small check dams were built, and rainwater harvesting systems installed. The results were promising, slowly building credibility and trust among the villagers.

Conversation between Dr. Rajendra Singh(Water Man of India) and Village elders

Consistent conversation with villagers builds trust and hope, spurring contribution and action

5.7. Blending Tradition with Innovation

The technical aspects of the project were a blend of the old and the new, harnessing modern water management techniques alongside traditional methods that had been used for generations.

Water Conservation Techniques:

- **Rainwater Harvesting:** Systems were installed to capture and store rainwater, reducing dependency on the river during dry spells. Anil, a local farmer, was amazed to see his parched fields turn green again.
- **Drip Irrigation:** Workshops were held to teach farmers about efficient irrigation methods, ensuring crops received adequate hydration without wasting water.

Watershed Management:

- **Contour Trenches:** Trenches were created along the natural contours of the land to slow down runoff and increase groundwater recharge.
- **Afforestation:** Trees were planted along the watershed, reducing soil erosion and enhancing water retention.

Traditional Water Systems:

- **Johads:** The project leaders revived traditional earthen check dams, capturing and storing rainwater just as the villagers' ancestors had done.
- **Modern Check Dams:** New check dams were constructed to control water flow, prevent soil erosion, and boost groundwater recharge.

5.8. The Tide Turns

As these techniques were implemented, the Sairni River began to stir back to life. Villagers who had once abandoned hope now saw clear water trickling through the riverbed. The community of Garh Mandora, which had been plagued by migration and despair, started to regain its vibrancy. People trusted the project, participating actively and spreading the word about the benefits they witnessed.

Training programs educated farmers on organic farming, crop rotation, and natural fertilizers. Fields began to flourish again, not just with crops but with renewed hope. Sustainable agricultural practices ensured that the land would remain fertile for generations to come.

5.9. Reviving Traditions

The river's revival brought back more than just water; it breathed life into cultural practices linked to the river. Festivals and rituals that had faded away were reinstated. The Sairni Mela, a vibrant festival celebrating the river, was once again a highlight of the year. Families gathered on the riverbanks, singing songs of gratitude and renewal.

5.10. The Path to Sustainability

With water now flowing and traditions revived, the community understood the importance of maintaining these gains. Efforts to cultivate water discipline were ramped up. Workshops on judicious water use and environmental-friendly practices like drip irrigation became a common sight. Farmers learned to balance their need for high yields with the long-term health of their soil.

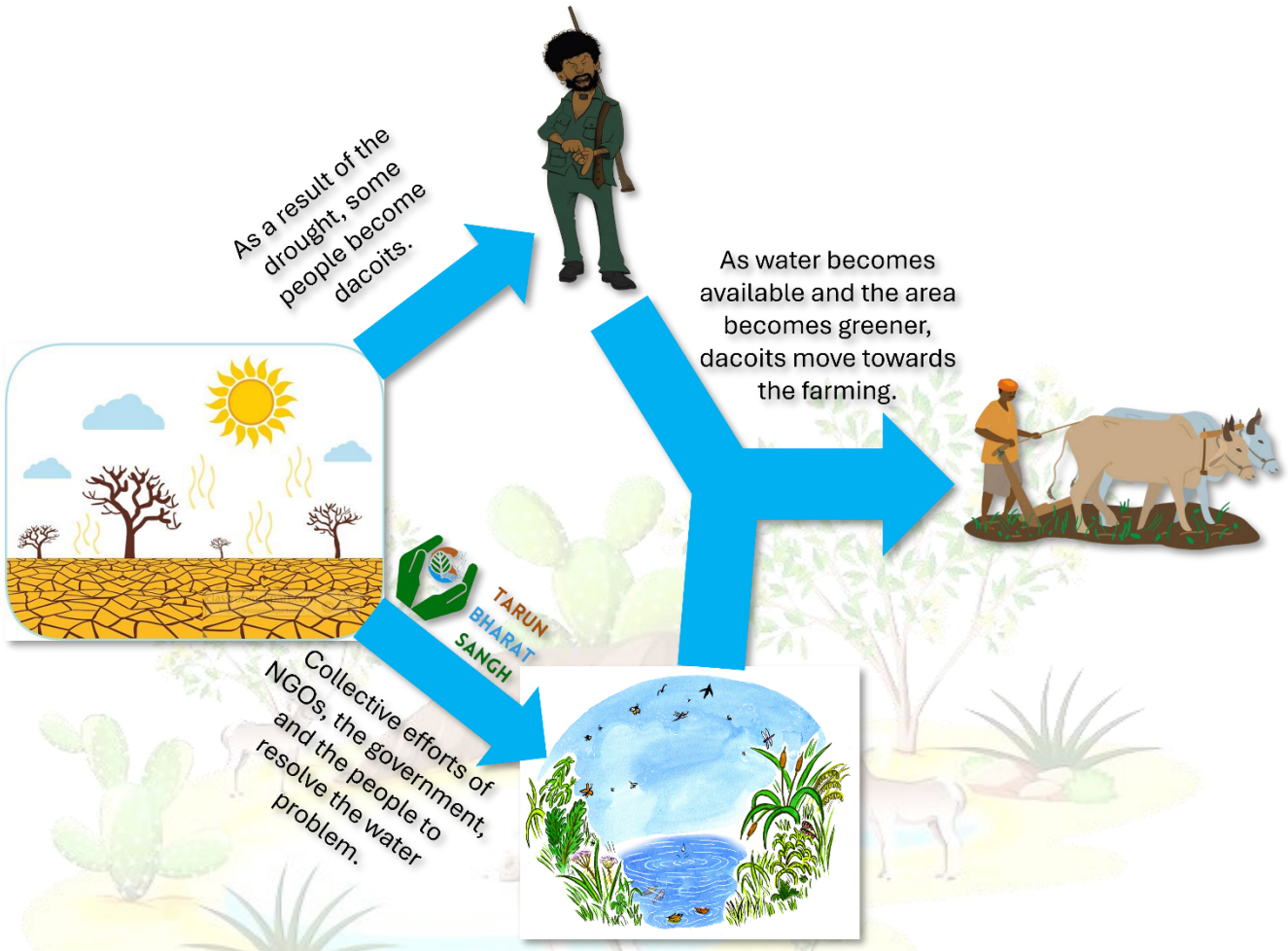
Extensive afforestation efforts, starting from the upper watershed areas to the riverbeds, continued. Trees helped reduce erosion, retained water, and provided shade and shelter. Check dams, retaining walls, and groundwater recharging wells were strategically deployed to ensure water sustainability.

The Sairni River rejuvenation project was not just an environmental endeavour; it was a story of resilience, community, and hope. By blending modern technology with traditional wisdom and fostering strong community involvement, the project leaders and villagers together restored the river, enhanced water management, and promoted sustainable agriculture. The dry riverbeds that once symbolized despair now flowed with life, representing the rebirth of hope and heritage in the heart of the region.

The journey was challenging, but the cooperative spirit and unwavering determination of the villagers paved the way for a sustainable and prosperous future. The Sairni River, once a mere memory, now stood as a testament to what can be achieved when communities come together with a shared vision and purpose.

6. Leadership and Transformation

Tales of Sairni: From Dacoits to Stewards: Embracing Renewal and Redemption



6.1. Bhikampura's husband

Under the leadership of Rajendra Singh, the organization reached Bhikampura, a village fraught with challenges. This village, known for its thorny bushes and tough living conditions, witnessed a remarkable transformation. The villagers, previously involved in activities such as alcoholism, crime, and gambling, began to change. A notable example was Bhikampura's husband, who, with the organization's help, transformed his fields, yielding excellent crops and revitalizing the land.

Witnessing this change, he decided to give up his criminal activities and became a model citizen. This transformation was not isolated, as many other influential individuals followed suit, abandoning violence and embracing agricultural work. The

police and judiciary played a significant role in this transition, offering support that led to the abandonment of criminal activities.

Widespread Change

By 1994-95, the efforts had yielded significant results, with many former criminals becoming model citizens. The success of the water conservation projects brought about a significant change in the lives of the people, who had initially been struggling for water. By May 2023, over 1500 individuals had benefited from these efforts, with no reports of criminal activities.

6.2. Personal Transformations

6.3. Harish Chandra from Bhasmuda

Harish Chandra from Bhasmuda stated, "I had 40 cases against me, but now I am free from all charges. I am not afraid anymore, nor will I scare anyone. Everyone loves me; my home and family are happy." This reflects the broader transformation, with the entire community living peacefully and unified.

6.3.1. Legacy and Continuation

The story of water availability and its transformative impact is ancient. From the 1990s to the 2000s, significant efforts around the Saraswati and Likha rivers and the villages near Likha and Majhar rivers showcased similar success. In 2001, numerous projects were carried out in the Saraswati region, followed by more initiatives in various villages along the Likha River by Pehal Singh.

The journey of Tarun Bharat Sangh stands as a testament to the power of collective efforts in bringing about profound social and environmental change.

In the village of, an unprecedented drought forced the villagers to abandon their homes and fields, spreading across three regions. When the village council, including elders like Dwarikaji, Naugahiya, and Peelu Singh, convened, the voices of the absentees were notably missed. I asked a villager, Sukha Baba, about their future plans. He expressed a sincere desire to improve their lives, inspired by my past work in other villages.

We began by cleaning our surroundings, understanding the need for collective effort. The preparations for ploughing were completed before the rains, coordinated by Peelu Singh. Despite an unexpected restraining order, the fields were ready before the heavy rains.

As the rains filled the fields, the atmosphere was serene. The villagers, without persuasion, started ploughing the fields. The abundant harvest brought by improved protection inspired villagers like Yatkaraj, Indresh, Vikas, Roshan, and Radhoraj to protect the crops. Women noted positive changes in family dynamics, crediting water for their improved lives.

Sukha Baba proudly said, "With 40 sacks of grain in stock, I feel secure and happy." This story of transformation reflects the entire village. Now, everyone lives with peace and confidence, knowing that water has brought prosperity. The village stands as a model, showcasing how water can bring peace and prosperity to a community.

6.4. Bhagirathi: A Resilient Woman.

Once upon a time, in a region where women seldom dared to farm, the land was dominated by vast forests and imposing rocky hills that kept them away. Most women lived deep within the jungles of the Vindhya region, confined to their secluded lives. The daunting terrain and lack of opportunities deterred them from venturing into agriculture.

In the heart of this region, whispers of transformation began to spread. The Rashtriya Seva Samiti was making waves with its water conservation efforts in the Tikamgarh, Lohabazar, and Dholpur regions. Among the many who heard these tales were three curious women. Eager to learn more, they reached out to the Rashtriya Seva Samiti office. Their determination led them to invite Rajendra Singh and Jogan Sharma to their village, igniting a spark of change.

In a small village, Bhagirathi, a resilient woman with a story waiting to be told, showed them her field. Her husband, a prominent and well-known dacoit, had never bothered to bring her clothes or food. Bhagirathi's life was about to change dramatically.

Thanks to the dam built by the Rashtriya Seva Samiti in her field, Bhagirathi experienced an unprecedented bountiful harvest. Her first act of gratitude was to buy clean and fragrant clothes for her husband. She rubbed these clothes with turmeric, a traditional sign of respect and care, before presenting them to him. Her husband, deeply moved and emotional, tearfully admitted, "I never gave anything to my wife until now, but this crop has brought clothes for me today. This change in me was brought by the work of water conservation of Rashtriya Seva Samiti."

This profound moment of realization led him to take an oath: "From today, I will leave everything and start farming." True to his word, he left behind his business, embraced farming, and freed himself from legal entanglements and the burden of debt. Bhagirathi's determination and the bounty of the land had transformed their lives.

Similarly, the story of Yatishwarananda is a tale of remarkable transformation. When he saw water flowing in his field for the first time, he threw away his stick, symbolizing his past struggles, and joined farming with boundless enthusiasm. His life, too, was forever changed by the power of water and the promise of the land.

In Nagajipur, Jankhede's transformation was equally significant. He abandoned his previous life, took up farming, and found peace and prosperity. The stories of these two women and their communities illustrate the profound impact of farming and water conservation on their lives. Their traditions, deeply rooted in the belief that the soul of the tree is the soul of their tribe, held true. They worshipped their traditions, their beliefs, and their rivers. Some worshipped the river, some the forest, some the trees, and some even the animals. Life, in their eyes, was sacred, and this belief brought stability to their world.

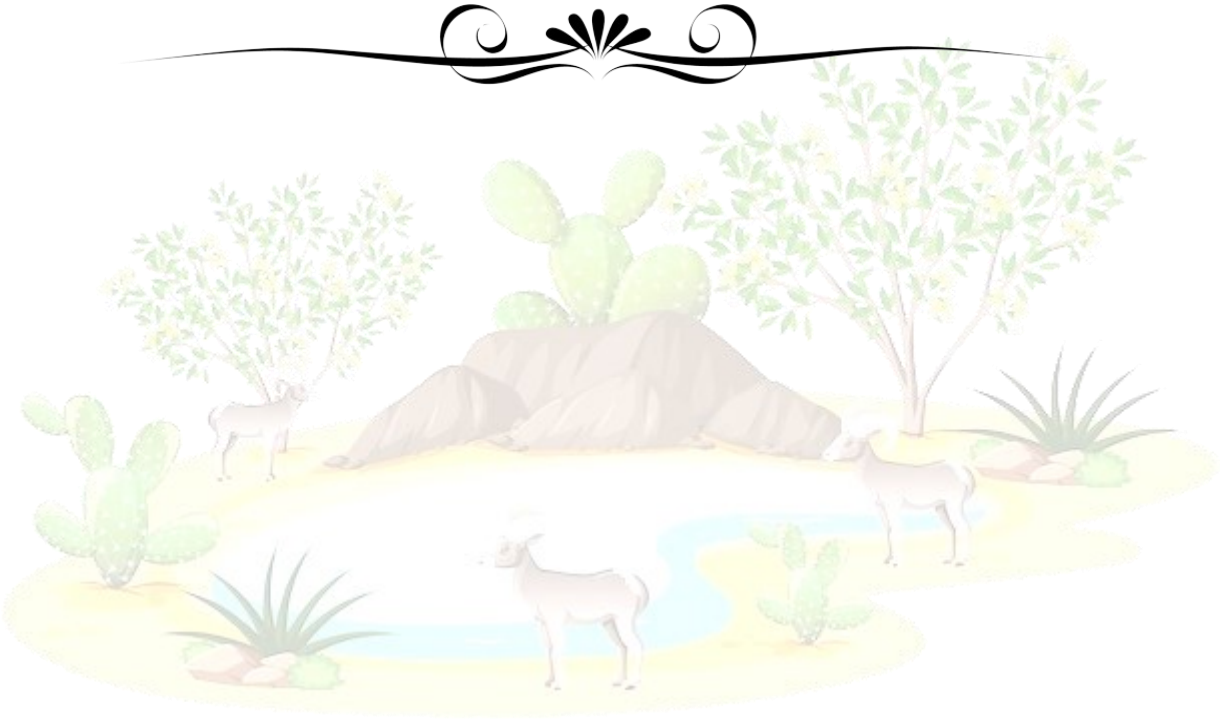
Forty years ago, the community lived in the Sairnri river region, which was then an untouched forest. With the establishment of forest departments, deforestation began, and the region underwent drastic changes. Sairni, named after the river that flowed through it, saw three major transformations over time.

In just 90 years, mining brought about significant changes. As mining expanded, the forest-dwelling community started to migrate. Their place was taken by nomads and traders. Nomads needed cattle, and traders sought profits. The jungles of Zumland and Balakot, with their ancient names, became protected areas after independence. Despite this, nomads and traders did not leave; they remained, and the rivers like Ikadri and Sairnri became the lifeblood of these new inhabitants.

Today, these people have transitioned from animal husbandry and forestry to farming. Initially, the forest-dwellers relied solely on forestry, but post-independence agriculture developed, and they learned to farm. However, farming in this region was not easy. Only 4% of the land was cultivable; the rest was either mined or deforested. Without water for farming, the people became wanderers, robbers, unhealthy, and

troubled. Mining and deforestation dried up all rivers and streams, leading to migration and empty villages. Good rains would briefly bring them back to their fields, a migration tradition ancient in India, but one drastically changed by mining and deforestation.

These stories of two great female farmers and their communities reflect the power of water conservation and farming in changing lives and sustaining traditions. They illustrate how the dedication to preserving water, forests, and land can transform lives, bringing hope, prosperity, and a renewed connection to cultural beliefs and practices.



7. Success Stories

Villages transformed by the project serve as compelling case studies, with testimonies from villagers highlighting improved agricultural yields, better health, and increased employment.

7.1. The Saga of Village Koripura

Kanjari ka Taal

Our journey began with a visit to "Kanjari ka Taal," a dam site in the village of Koripura, nestled within the initial catchment area of the upper riparian zone of the Sairni River. As we arrived, anticipation filled the air. Ranbeer, our guide, stood ready to unveil the secrets of the dam and its various waterworks construction techniques.

Ranbeer spoke with a sense of pride and awe, describing how the villagers of Koripura had accomplished an extraordinary feat. They had constructed this dam in a mere three months, right in the midst of the peak COVID-19 restrictions in 2020-21. Despite the global chaos and local hardships, they had pressed on with unwavering determination. Their success was made possible with the support of the Tarun Bharat Sangh and financial assistance from HCL.

The dam itself was a marvel of local engineering and community effort. Its retaining wall stretched 340 meters in length, stood 16 meters high, and tapered from a base breadth of 42 meters to a top width of 7-8 meters. This imposing structure was a testament to the villagers' resilience and ingenuity. The dam encompassed a catchment area of 11 kilometers and enclosed a water body with live storage within a 1-kilometer perimeter.

Before the construction of the dam, the area was starkly barren, devoid of significant vegetation. Vast patches of thorny bushes and varieties of cactus plants stood as silent witnesses to the harsh, arid conditions that once prevailed. The transformation of the landscape around Kanjari ka Taal was nothing short of miraculous. Fresh vegetation began to sprout, and small trees emerged, painting a picture of rejuvenation and hope.

The changing environmental conditions were evident in the presence of a plethora of species of avifauna and aquafauna. Birds of various kinds now flocked to the area, their melodious songs filling the air, while aquatic life thrived in the newly formed water body. This vibrant ecosystem stood as a living testimony to the dam's positive impact on the local environment.

As we observed the dam in late April, it was heartening to see a substantial quantity of standing water, a rarity in these parts during the pre-monsoon season. This water reserve would sustain the local community and wildlife throughout the summer months until the monsoon rains arrived, underscoring the dam's significance.

Kanjari ka Taal was more than just a dam; it was a symbol of what could be achieved when a community came together with a common purpose. The villagers of Koripura, with their unwavering spirit and collaborative effort, had secured a reliable water source. They had set in motion a series of environmental improvements that would benefit future generations.

As we left Kanjari ka Taal, the story of this dam lingered in our minds. It was a tale of resilience, unity, and hope—a testament to the power of community and the enduring spirit of the people of Koripura. The dam stood as a beacon of what could be accomplished through collective effort, determination, and a shared vision for a better future.

7.2. The Rebirth of Kanjari ka Taal: A Tale of Community and Resilience

In the village of Koripura, nestled within the initial catchment area of the upper riparian zone of the Sairni River, a remarkable transformation was taking shape. Our journey to witness this miracle began with a visit to "Kanjari ka Taal," a dam site that had become a beacon of hope for the local community.

Ranbeer a local guide, greeted us with enthusiasm and pride as he began to narrate the story of Kanjari ka Taal. The dam, he explained, was a marvel of local engineering and community effort, constructed in record time—just three months—despite the challenges posed by the peak period of COVID-19 restrictions in 2020-21. The villagers of Koripura, supported by the Tarun Bharat Sangh and financial assistance from HCL, had come together with an unwavering spirit to achieve what many thought impossible. As Ranbeer described the functional dynamics of the dam and various waterworks construction techniques, we were inspired and motivated. The dam's retaining wall stretched 340 meters in length, 16 meters in height, and a base breadth of 42 meters, tapering to a width of 7-8 meters at the top ramp. This impressive structure, standing tall against the backdrop of the rugged landscape, was a testament to the villagers' determination and resilience.

The area around Kanjari ka Taal had once been starkly barren, devoid of significant vegetation. Thorny bushes and varieties of cactus plants stood as silent witnesses to the harsh, arid conditions that once prevailed. But as we gazed upon the transformed landscape, it was clear that change was in the air. Fresh vegetation was sprouting, and small trees were emerging, painting a picture of rejuvenation and hope.

The changing environmental conditions were further evidenced by the presence of a plethora of species of avifauna and aquafauna. Birds of various kinds now flocked to the area, their songs filling the air, while aquatic life thrived in the water body created by the dam. This vibrant ecosystem served as a living testimony to the positive impact of the dam on the local environment.

Ranbeer pointed out the substantial quantity of standing water in the dam as we observed it in late April. This was a rarity in these parts during the pre-monsoon season, and it was heartening to see. This water reserve, he explained, was likely to sustain the local community and wildlife throughout the summer months until the monsoon rains arrived. The significance of the dam was clear; it was not just a structure, but a lifeline for Koripura.

The story of Kanjari ka Taal is one of resilience and unity. The villagers of Koripura, facing the adversities of global pandemic and harsh environmental conditions, had come together with a common purpose. Their collaborative effort and unwavering spirit had

not only secured a reliable water source but also set in motion a series of environmental improvements that would benefit future generations.

As we left Kanjari ka Taal, we carried with us a sense of awe and inspiration. The dam stood as a symbol of what can be achieved when a community unites with determination and hope. The villagers of Koripura had shown that through collective effort and resilience, even the most challenging obstacles could be overcome, paving the way for a brighter, more sustainable future.

7.3. Koripura Village

Interacting with the villagers of Koripura began at the home of Durga Singh, a 45-year-old farmer who welcomed us with the warmth and hospitality characteristic of rural Rajasthan. As we settled in, surrounded by Durga Singh's family, we were immediately struck by the close-knit nature of their household. His son Krishna, a young man brimming with energy and enthusiasm, was eager to share his experiences.

Krishna's story was a poignant reflection of the hardships faced by many in Koripura. Due to the relentless scarcity of water in the village, he had been forced to migrate to Mumbai in search of work. Skilled in masonry, particularly in fixing tiles and Kota stones, Krishna found employment in the bustling city. Despite earning a decent wage, the high cost of living in Mumbai meant that he could barely save enough to send back home. The small amounts he managed to send were inadequate to support his large family in the village.

The situation worsened dramatically when the COVID-19 pandemic struck. With the sudden imposition of lockdowns, Krishna found himself jobless and stranded in a city far from home. The uncertainty and anxiety were overwhelming, and he had no choice but to return to Koripura. The journey back was fraught with challenges, but it also brought him back to his roots and the resilient spirit of his community.

Upon his return, Krishna discovered a ray of hope amidst the despair. The villagers, undeterred by previous setbacks, had initiated a new project to construct a dam in the Sairni River catchment area. This ambitious endeavor, undertaken by 200-300 villagers with the support of volunteers from the Tarun Bharat Sangh, aimed to address the chronic water shortage that plagued their community.

The villagers' determination was palpable as they recounted their collective efforts to build the dam. Despite the failures of earlier attempts, their resolve had only strengthened. Men, women, and children alike worked tirelessly, driven by the vision of a sustainable water source that could transform their lives. Krishna, who had once left his home in search of a better future, now found himself deeply involved in this community effort.

As Krishna spoke, his eyes lit up with a mix of pride and hope. He described the dam construction in vivid detail—the sweat and toil, the camaraderie, and the sheer willpower that

went into every stone laid. The dam itself was a marvel of local engineering and community effort. Its retaining wall stretched 340 meters in length, stood 16 meters high, and tapered from a base breadth of 42 meters to a top width of 7-8 meters. This imposing structure was a testament to the villagers' resilience and ingenuity. The dam encompassed a catchment area of 11 kilometers and enclosed a water body with live storage within a 1-kilometer perimeter.

Before the construction of the dam, the area was starkly barren, devoid of significant vegetation. Vast patches of thorny bushes and varieties of cactus plants stood as silent witnesses to the harsh, arid conditions that once prevailed. However, the landscape around Kanjari ka Taal began to transform remarkably. Fresh vegetation sprouted, and small trees emerged, painting a picture of rejuvenation and hope.

The changing environmental conditions were evident in the presence of a plethora of species of avifauna and aquafauna. Birds of various kinds now flocked to the area, their melodious songs filling the air, while aquatic life thrived in the newly formed water body. This vibrant ecosystem stood as a living testimony to the dam's positive impact on the local environment.

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Kanjari ka Taal was more than just a dam; it was a symbol of what could be achieved when a community came together with a common purpose. The villagers of Koripura, with their unwavering spirit and collaborative effort, had secured a reliable water source. They had set in motion a series of environmental improvements that would benefit future generations.

Krishna's story, interwoven with the larger narrative of Koripura, was a tale of struggle and perseverance, of setbacks and triumphs. The villagers, with their indomitable spirit, were not just building a dam; they were reclaiming their right to thrive on their ancestral land. Through their unity and shared vision, they demonstrated the profound impact of community-led efforts and the transformative potential of grassroots movements. Their journey was a testament to the enduring power of hope and collective action in the face of adversity.

The Way Ahead

Krishna and his family are optimistic about the positive changes occurring in their village. The villagers of Koripura now recognize the critical importance of water for sustaining life and ensuring a secure future for the generations to come. With this

newfound determination, they are keen to undertake more initiatives aimed at ensuring the sustained availability of water. Their resolve is strong, their spirit unbreakable, as they work together to build a brighter future. With these thoughts in mind, we concluded our visit and headed towards our next destination, Bhur Kheda.

7.4. The Tale of Bhur Kheda

Bhur Kheda Dam

Leaving Koripura behind, we journeyed to Bhur Kheda, a hamlet nestled between small sandy hills. In the local dialect, "Bhur" means small sandy mounds, and "Kheda" means a village, aptly describing the terrain. Our first stop was a dam site, smaller in size compared to the one in Koripura but with a higher retaining wall. This dam, located on a different stream, also feeds into the Sairni River.

We then visited a small village shop, where we met with Bachchu, Hakim Singh, Avatar Singh, and Rajesh. Engaged in a cozy conversation, these young villagers shared their story.

The State Earlier

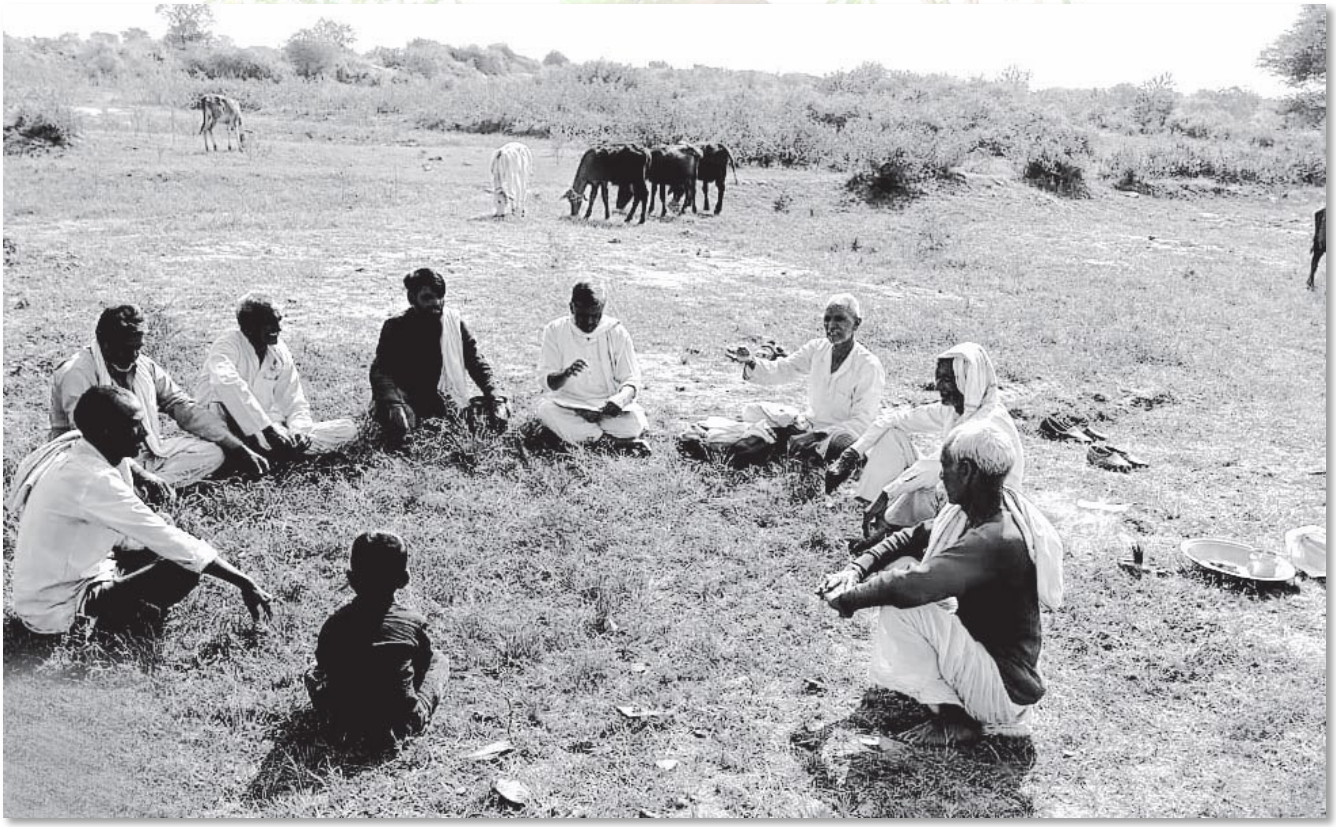
Rustam Singh, Earlier a Dacoity Now doing farming

Bhur Kheda, in the past, was shrouded in fear and crime, with frequent threats of theft and dacoity. This hostile environment led to the migration of several families. The village had 18 open wells, all but one completely dried up, leaving a single well to serve both the villagers and their cattle for drinking water. Additionally, the 14 hand pumps in the village were completely dry. Desperate for water, the villagers

spent around 27 lakh rupees on bore wells, which also eventually dried up. Attempts to cultivate mustard on 20 bighas of land (approximately a quarter hectare) failed due to the lack of water.

The Way It Happened

The transformation began four years ago. On March 10, 2016, Dr. Rajendra Singh, Chairman of the Tarun Bharat Sangh and renowned as the Waterman of India, initiated the construction of a dam. The entire village, comprising 60-65 families, united for this cause. A committee of 4-5 elders was formed, assisted by TBS, with each member contributing 5,000 rupees. Over 300 villagers worked tirelessly on the project. When funds ran out and the project faced potential stalling, the villagers made additional contributions, ensuring the dam's completion in a record time of four months, from March to June. The first rains filled the dam, marking the beginning of a new era for Bhur Kheda.



The Fruits of Change

The young villagers recounted the remarkable transformation that followed the dam's construction. Previously, the village relied on borrowing money to purchase grains, but now, they have become self-reliant. Each household produces enough grains to sustain itself and even has surplus to sell in the market. The ambient temperature has decreased, and the weather has become more comfortable. There is now an adequate supply of drinking water for both humans and cattle. The return of wild animals such as wild boars, nilgai, jackals, and deer reflects the improved environmental conditions. The presence of maze reeds around the lake indicates a clean and healthy water flow.

Irrigation is now carried out using gravitational force, eliminating the need for electricity or diesel-powered pumps, which significantly reduces irrigation costs. The first rain shower replenished the previously dry tube wells, and the water levels in open wells have risen to just 7-8 feet below ground level.

The atmosphere of fear and crime has dissipated, replaced by a community engaged in farming activities. Grain production per bigha has increased from 15-20 quintals to 50-60 quintals, with a significant improvement in grain size and overall yield, which has

increased tenfold. This newfound water availability has allowed villagers to properly care for their cattle, take multiple crops, and ensure a constant flow of money. Consequently, they can now send their children to school and even to bigger cities like Jaipur and Kota for higher education. These changes have also positively impacted their relationships with friends and relatives, creating a sense of contentment and happiness that words cannot fully capture.

The story of Bhur Kheda is a powerful testament to the impact of community-led water conservation efforts. It highlights the profound changes that can occur when people come together with a shared purpose, transforming their environment and securing a better future for themselves and their children.

7.5. Mardai Kalan (Maharajpura): A Journey of Transformation

The Village

Continuing our journey, we arrived at Mardai Kalan, also known locally as Maharajpura. Here, the traditional layout of village houses in Eastern Rajasthan was evident. Each dwelling had its own separate kitchen, but the heart of village life was the common seating and resting area known as the 'Verandah.' This raised platform, standing about 4-5 feet high, was furnished with beds used for sleeping at night and for resting during the day, particularly by the men of the village.

The Situation Prior

Kedar, Prema, and Nihal Singh Salabadia shared their memories of life in Mardai Kalan before the dam was constructed. They spoke with a mix of relief and pride as they recounted the hardships they had endured. The daily struggle for drinking water was perhaps the most burdensome. Villagers had to walk 1.5 kilometres to a well,

often facing long queues. Water was so scarce that bathing was a rare luxury. The lack of water also meant that crops were poor in quality and yield. The seeds were small and weak, and trees often fell prey to termites due to the dry conditions. Crop yield was abysmal, with only 5 mann (200 kg) of produce per Bigha (approximately a quarter hectare).

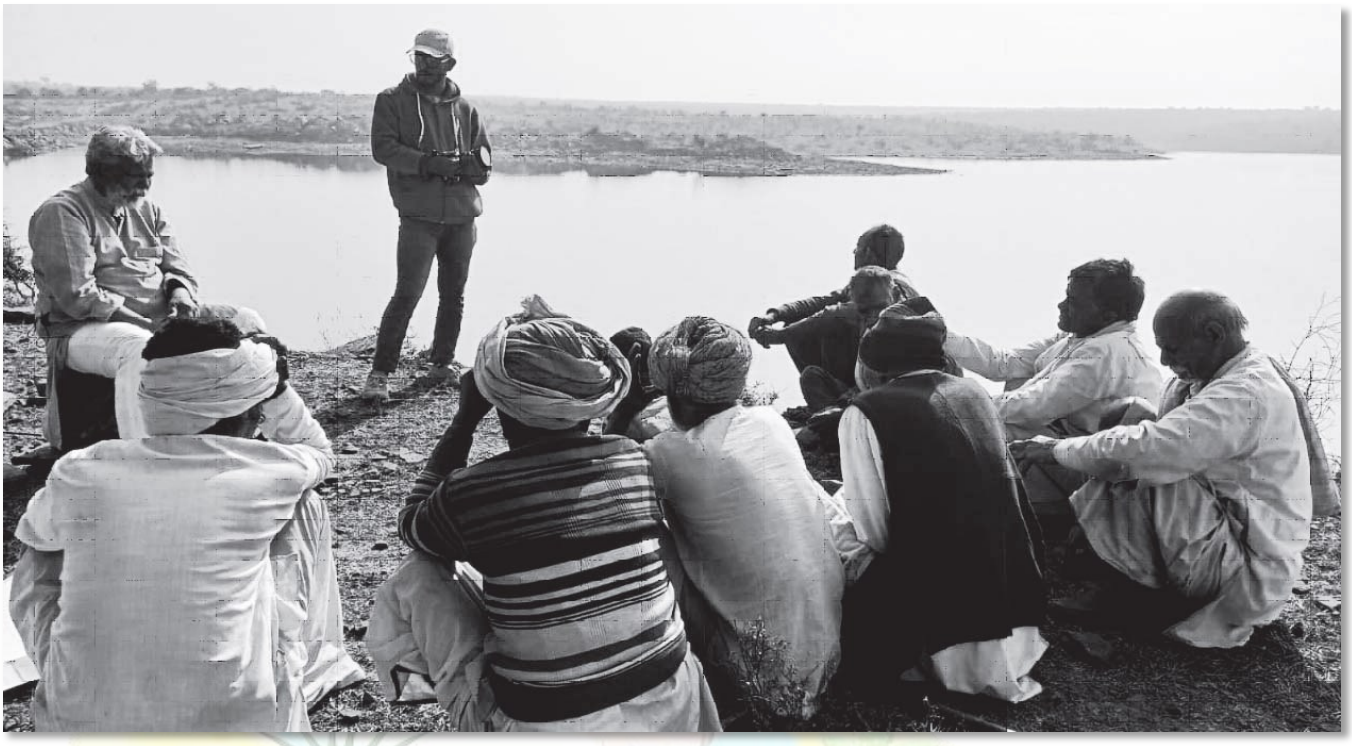
Healthcare was another significant challenge. Minor illnesses were treated with local remedies, but serious conditions required transporting the sick to town on makeshift stretchers, a daunting task given the poor infrastructure. Pregnant women faced severe difficulties, further highlighting the dire situation.

The Initiatives of Change

The transformation in Mardai Kalan began with the construction of the dam. The availability of water brought a cascade of positive changes. Agricultural productivity soared, with crop yields increasing seven to eight times. The villagers now harvested 35-

40 mann (up to 1600 kg) per bigha, a remarkable improvement that secured food for the community and surplus for the market.

The increased income from agriculture had far-reaching effects. Children were able to attend good schools, and many families constructed pakka (permanent) houses. Health conditions improved significantly, and the availability of water meant that people and animals alike thrived. The village environment became more conducive to social and



economic activities. Marriages became more frequent, and relationships within the community strengthened.

Infrastructure development followed the agricultural boom. A new road was constructed, connecting Mardai Kalan to neighbouring areas, making travel easier and faster. The economic stability brought by reliable water sources meant that villagers could survive even without rain for an extended period.

The villagers' commitment to sustainable water management was evident. They expressed a strong desire to construct additional water structures along various drains in the jungle and adjacent areas to ensure continuous water availability. This forward-thinking approach aimed to safeguard their gains and prepare for future challenges.

As our visit to Mardai Kalan concluded, we shared a meal at Ranbeer's house, savouring the delicious food and the warm hospitality. The journey continued to our next destination, Arounda village, leaving us with a deep appreciation for the resilience and determination of the villagers of Mardai Kalan. Their story is a powerful testament to the transformative power of community-led water conservation and sustainable development initiatives.

7.6. The Story of Arounda

The Village

Nestled on the banks of the Sairni River, Arounda is a picturesque village marked by its serene surroundings and resourceful inhabitants. The village boasts a modest 80-meter dam built by the government, which retains the river's water before it disappears under a rocky surface for a stretch of 120 meters. This area includes a small open well and a bore well, both dug into the rock and filled to the brim with water.

Siyaram, a distinguished 60-year-old villager with thick white moustaches and proudly wearing the traditional Rajasthani headgear (Pagari), warmly welcomed us. He led us to his home, where we met other villagers, including Meghram, Rambeer, Gehlot, Ramavatar, and Bhupinder, who eagerly shared their experiences.

The Water Crisis of Arounda

Siyaram and his fellow villagers recounted how, in earlier times, the Sairni River flowed year-round, providing a reliable water source for agriculture and daily needs. However, over the years, decreased rainfall and declining groundwater levels led to a severe water crisis. The once-perennial river began to dry up, and the wells that once provided for their needs went dry. Desperate, the villagers turned to bore wells, investing significant sums—about 4 lakhs rupees—only to watch six new bore wells go dry as well. This left them in a state of despair and hopelessness.

The turning point came when the Tarun Bharat Sangh (TBS) organized a meeting in Masalpur. There, the villagers learned about water conservation initiatives and the promise of support, with TBS covering two-thirds of the expenses and the villagers contributing the remaining third. Realizing the benefits of such a partnership, the

community rallied together. Hundreds of dams, lakes, and other water conservation structures were subsequently created in the region.

One Wise Decision

The completion of these water conservation projects marked the beginning of a new era for Arounda. Water levels in both bore wells and open wells began to rise, and the Sairni River started flowing consistently once more. Siyaram expressed his confidence that the river would now flow forever, thanks to these efforts. The transformation was evident in the lush, irrigated fields, with 50-60 bighas of land now nourished by the dam's water.

The villagers, who once struggled for basic sustenance, now experienced prosperity. The income generated from outsourcing dam fisheries to contractors at a rate of Rs 1 lakh per year further bolstered their financial stability.

The changes brought by the availability of water were profound. Migration in search of work became a thing of the past as water became abundant in every household's well and bore well. The improved groundwater levels meant that even in the event of drought, the village could survive for three years or more on their reserves.

Agricultural practices evolved significantly. Previously, the villagers could only grow crops like bajra, which required minimal water. Today, they harvest abundant crops of wheat, with some farmers storing up to 200 mann of wheat, enough to last two to three years. Mustard, another water-intensive crop, also thrived in the revitalized environment.

The village now boasts three dams, strategically located above the farmlands. This setup allows water to flow by gravity through pipes, eliminating the need for electricity to pump water and thus reducing irrigation costs.

As we concluded our visit and prepared to move on to Dawoodpur village, the sense of optimism and resilience in Arounda was palpable. The villagers had not only overcome their water crisis but had also laid the foundation for a sustainable and prosperous future. Their story is a testament to the power of community collaboration and the transformative impact of effective water management.

7.7. Dawoodpur: A Resurgence of Life

As we arrived at Dawoodpur, we were greeted by a small dam adorned with a humble temple on its banks. The tranquil scene was further enhanced by the presence of peacocks gracefully wandering along the waterline, adding a touch of natural beauty to the surroundings.

On our return journey, we visited the modest thatched hut of Hari Singh, where we met his son Khushiram. Amidst the simplicity of their home, Khushiram shared with us a poignant story that illuminated the transformative impact of water availability on their lives.

The Plight of Dawoodpur

Khushiram vividly described the challenges that Dawoodpur faced in the past. The village, like many others in the region, grappled with severe water scarcity. In those days, agricultural activities were constrained, and even cattle grazing were a struggle due to the lack of water sources. Villagers had to fetch drinking water from a source 2 kilometres away, a tedious and time-consuming task.

However, hope emerged when the community decided to take matters into their own hands. Several years ago, initiatives to improve water availability began. While the government had previously constructed some dams, they proved inadequate to meet the growing demand. The situation remained dire until concerted efforts were made to build additional water structures.

Over time, multiple dams were strategically constructed throughout the region. These efforts not only replenished the groundwater but also revitalized the Sairni River itself. Khushiram marveled at the transformation: where once the river dried up completely between Rundhpura and Koripura villages, today it flowed consistently, sustaining life along its banks.

The impact of this revitalization extended far beyond mere survival. With reliable access to water, farming became more productive and sustainable. Cattle, once struggling with poor health due to water scarcity, now thrived. The landscape transformed, with lush fields replacing parched earth, and the community's spirits lifted as prosperity returned.

In conclusion, Dawoodpur's journey exemplifies resilience and community-driven progress. The efforts to secure water resources have not only transformed the physical landscape but also rejuvenated hope and prosperity among its residents. As we departed Dawoodpur, the sight of peacocks by the dam symbolized not just beauty but also resilience—a reminder of nature's ability to flourish when nurtured by human care and foresight.

7.8. Sandan Ka Pura: A Story of TransformationSandan Ka Pura,

known locally as Phadale Ka Pura, unfolds as a testament to resilience and change amidst the arid landscapes of Eastern Rajasthan. Nestled amid rugged tracks and verdant fields, this village has witnessed a profound transformation, largely driven by the critical intervention of water conservation efforts.

The Past Struggles

Before the advent of sustainable water practices, life in Sandan Ka Pura was marked by severe challenges. Water scarcity plagued every aspect of daily existence. Cattle struggled to find adequate drinking water, and agricultural yields were dismal, barely meeting

subsistence needs. Residents endured long journeys to distant wells, their livelihoods tethered to the whims of erratic rainfall and depleting groundwater levels.

The Turning Point

In 2016, the community rallied together under the guidance of Tarun Bharat Sangh and with support from LIC Housing Finance Ltd. to initiate a transformative project: the construction of a dam. This endeavour was not merely about harnessing water; it symbolized hope and a collective determination to secure a better future.

With the completion of the dam, the landscape began to change. Fields that once yielded meager crops of Bajra now flourish with bountiful harvests. The introduction of modern agricultural practices, powered by mechanization and hybrid seeds, has revolutionized farming in Sandan Ka Pura. Crops like wheat, mustard, and millets thrive, reflecting a tenfold increase in productivity.

The Present Prosperity

Today, the impact of water availability reverberates across every aspect of village life. Families no longer fear water scarcity; instead, they celebrate newfound economic stability. Children attend school regularly, and healthcare has improved, thanks to increased income from agriculture. The community's reliance on traditional occupations like stone mining has diminished, replaced by a vibrant agricultural economy.

The once-barren fields are now teeming with life, attracting diverse wildlife like peacocks and even occasional sightings of majestic cobras. Open wells that were once

parched now brim with water, sustaining both human and animal populations throughout the year.

Challenges and Future Aspirations

Despite these strides, challenges persist. Encounters with wildlife, such as panthers and wild boars, pose threats to crops and livestock. Agricultural practices, while boosting yields, raise concerns about soil health and environmental sustainability. Yet, amidst these challenges, the resolve to protect and sustain their water resources remains unwavering.

Looking ahead, the community of Sandan Ka Pura aims to strengthen their dam infrastructure further. This ensures resilience against future droughts and secures a stable water supply for generations to come. They envision a future where every household benefits from abundant water, fostering continued prosperity and harmony within their village.

In essence, Sandan Ka Pura's journey from water scarcity to abundance is not just a story of survival, but a testament to the transformative power of community-driven initiatives and sustainable practices. It is a narrative of hope, resilience, and the enduring spirit of rural India.

7.9. Parvati Dam: The Lifeline of Angai Village

Nestled near Angai village, the Parvati Dam stands as a monumental reservoir, its significance etched in the landscape of Eastern Rajasthan. Spanning a vast catchment area of 786 square kilometers, it boasts a formidable water holding capacity of 120 million cubic meters. Fed by the converging waters of the Sairni River from the northwest and the Tewar River from the southeast, supplemented by several local streams, this dam serves as a vital source of sustenance for the region.

Parvati Dam

Kheda Village: A Beacon of Transformation

Unlike its counterparts nestled in remote hinterlands, Kheda village sits prominently along the bustling Karauli-Dholpur highway. Here, amidst the verdant surroundings, I met Khushiram, a local resident who guided me to a smaller dam site that, despite being currently dry, bore testament to a remarkable transformation.

Before the Dawn

Khushiram recounted the stark realities of life before the dam's construction commenced in 2014. Water scarcity was acute, rendering agricultural endeavours futile and forcing villagers into arduous labour migrations. Basic necessities like drinking water and fodder were a daily struggle, compounded by financial constraints that necessitated borrowing for sustenance.

A New Dawn: Post-Dam Era

With the advent of the dam, Kheda village witnessed a metamorphosis. Lush greenery now blankets the landscape, a stark contrast to the arid past. The dam's waters have not only revitalized agriculture but also nurtured an ecosystem teeming with diverse wildlife. Indigenous species like Neel Gaay, Siyar, and Baghero now frequent the area, drawn by the promise of sustenance.

Gone are the days of dependence on external sources for grains and fodder. The youth, once compelled to seek employment elsewhere, have found purpose in revitalizing their ancestral lands through farming. To sustain this newfound abundance, Khushiram emphasizes the need for additional reservoirs. Enhanced water retention strategies promise to elevate groundwater levels, currently hovering approximately 300 feet below, through improved percolation.

Ramvir's Perspective: A Personal Triumph

Amidst the midday sun, we paused at Ramvir's humble abode, a juxtaposition of old clay and new cement structures. Here, in the junction of highways and rural roads, Ramvir shared his story of personal triumph. The availability of water has transformed his fortunes, enabling the construction of a modern home—a dream once deemed unattainable. A new vehicle now serves his family as a source of income during lean agricultural seasons, a testament to newfound financial stability.

Ramvir's pride extends to the education of his children, a privilege long withheld due to economic constraints. His narrative echoes the broader transformation unfolding in Kheda village, where each success story reflects the collective determination to embrace prosperity.

As our journey progresses towards Garh Mandora, the final destination on this odyssey, the echoes of resilience and transformation in Kheda village resonate as a testament to the enduring spirit of rural India.

7.10. Rundhpura village

Dabi ka Kund: Oasis Amidst Arid Lands

Perched near the Rundhpura dam, Rundhpura village stands out for its sanctuary, Dabi ka Kund, a rare oasis of perennial water in an area historically challenged by scant rainfall. Engaging with the locals—Murari, Birbal, Makhan Singh, and Bajrang—I delved into a narrative that intertwined nostalgia with remarkable transformation. The Predicament of the Past

In the past, Rundhpura dam struggled to quench the thirst of the village, particularly for lands situated north of the Masalpur-Keshpura road, elevated above the dam's reach.

This geographical challenge necessitated a localized approach to water management—an endeavour that came to fruition in 2015.

A Community United

With initial support from Bharat Petroleum Ltd and technical guidance from Tarun Bharat Sangh (TBS), a vision for rejuvenating local lands took shape. What began with a modest gathering of 10-15 villagers soon burgeoned into a collective effort involving 50-60 dedicated individuals. The construction of dams near the agricultural heartlands unfolded swiftly, completing in just a month and a half.

Winds of Change: Blooming Lands

The impact was profound. Once barren lands now thrive, supporting a diverse tapestry of life—from towering Pipal and Babool trees to elusive species like Lakkad Baghgha and Jarak. The arrival of water ushered in an era of agricultural resurgence, enabling the cultivation of rice during monsoons and crops like wheat, mustard, and chana in the scorching summers.

New Life, New Visitors

The newfound abundance extended beyond terrestrial life. In the dam's waters, a vibrant ecosystem flourishes, nurturing amphibians, migratory fishes like Digra and Naren, and even attracting avian guests such as parrots, peacocks, and migratory birds like Havasin and Saras. These diverse habitats, once barren, now pulse with vitality—a testament to the transformative power of water.

Looking Ahead: Sustainability and Expansion

As the success story of Rundhpura's dam spreads, neighbouring communities seek guidance on replicating this model. The villagers, now guardians of their water resources, employ techniques like using alum to maintain water cleanliness—an essential step in ensuring the longevity of their newfound prosperity.

Looking forward, plans are afoot to expand the dam's capacity, fortifying its earthen walls with concrete and raising its ramp heights. These measures promise year-round water security, safeguarding against droughts and bolstering agricultural productivity for generations to come.

In Rundhpura, amidst the whispers of rustling leaves and the glisten of water's surface, one finds not just a tale of water management but a narrative of resilience, community, and the enduring spirit of rural Rajasthan.

7.11. Garh Mandora: A Testament to Transformation

Venturing northward from Masalpur, along the undulating contours of the Sairni River basin, our journey ascended 23 kilometers before veering southeastward, navigating rugged terrain and thorny thickets. The village of Garh Mandora awaited, nestled amidst a landscape both challenging and resilient.

The Arid Legacy

Ram Gopal Sharma, Hari Om Singh, Prahlad Singh, and Bholu Sharma, weary from a day's labor in the fields, shared tales of hardship and hope. In years past, Garh Mandora knew only the tyranny of parched lands and fleeting sustenance. A single crop in Kartik was a gamble against capricious rains, leaving families dependent on their cattle for survival. The village existed on the fringes, with minimal access to water and meager prospects for improvement.

A New Dawn: The Initiation

Change began in 2023 when TBS, inspired by neighbouring successes, undertook the ambitious task of dam construction in Garh Mandora. Ram Gopal Sharma rallied 20 villagers, and what ensued was not just the erection of a dam but a beacon of hope. Amidst the rocky outcrops and thorn-laden expanses, 10-11 dams and numerous water works sprang forth, a testament to community solidarity and collective endeavour.

Blossoming Prosperity

With water came transformation. Where barren lands once sprawled, crops now flourish—1000 mann of mustard, 100 to 105 mann of wheat annually, a stark contrast to previous years of destitution. The once-dry dams now sustain not only agricultural abundance but a thriving ecosystem. The verdant landscape teems with new arrivals—Peacocks, Baghero, Neel, Roz, Suar, and a host of other creatures find solace in the newfound water sources.

The Ecological Symphony

Nature, too, has responded to the village's resurgence. Trees once alien to the region—Camelia, Papdi, Biji—now find a foothold, alongside indigenous varieties like Neem and Bhirbhiri. Orchards of mango, guava, pomegranate, and papaya, nurtured by accessible water, dot the landscape, adding to the tapestry of growth.

Sustainable Growth: Challenges and Triumphs

Challenges persist. The quest for sustainability drives efforts to enhance dam infrastructure, fortifying walls and raising ramps to secure water reserves year-round. Organic farming methods prevail, yet the introduction of urea, pesticides, and weedicides underscores a delicate balance between productivity and environmental stewardship.

Embracing Change

The narrative of Garh Mandora transcends mere survival; it embodies resilience, community solidarity, and a forward-looking ethos. Today, the village school has expanded, offering education up to the 8th standard with prospects for further growth. Economic empowerment has lifted spirits, fostering a renewed sense of pride and dignity among villagers.

A Call to Action

As friends and relatives now flock to witness Garh Mandora's transformation, hopes are pinned on expanding water conservation efforts. Villagers envision a future with more dams and water works, ensuring sustained prosperity and ecological balance. With unwavering determination, they pledge to collaborate with TBS, forging ahead in their quest for water security and prosperity.

In Garh Mandora, amidst the rocky ridges and blooming orchards, the story of resilience unfolds—a testament to human ingenuity and the transformative power of water.

8. Social Impacts: A Transformation Unfolds

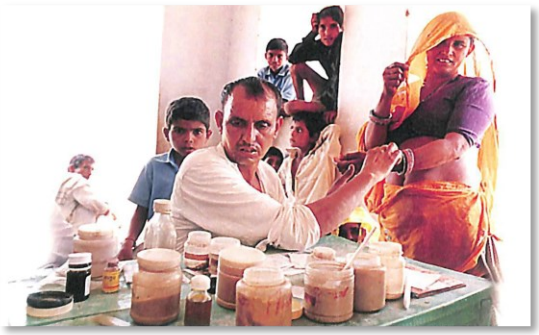
Livelihood and Infrastructure

In the heart of Rajasthan, where the struggle for water once defined daily existence, villages like those along the Sairni River basin have witnessed a remarkable metamorphosis. Access to water has not only elevated living standards but also catalyzed comprehensive development. Cemented houses with tiled flooring now stand in place of traditional mud huts, a symbol of improved infrastructure. Basic amenities such as electricity, roads, and healthcare have become accessible, alongside modern conveniences like television, internet, and personal transport, marking a significant stride towards socio-economic prosperity.

Education and Gender Equality

Education, once a distant dream, has become more attainable for children in these rejuvenated villages. Increased school enrollment reflects a shifting mindset, yet challenges remain. Gender disparities persist, with fewer girls attending school compared to boys. Efforts to promote gender equality through awareness campaigns and skill training institutes are

essential to empower young women and secure their place in the region's future development.



Health and Sanitation Challenges

Despite strides in other areas, healthcare and sanitation infrastructure lags behind. While villages boast of being open defecation-free, the reality of inadequate sanitation facilities persists. Basic medical care remains elusive, highlighting a critical need for healthcare access. Addressing personal hygiene and sanitation practices is paramount to ensure the well-being of communities.

Peace and Prosperity

With water as a stabilizing force, crime rates have dwindled in these once-vulnerable communities. However, societal challenges such as caste disparities and domestic violence against women demand attention. The influx of wealth, driven by agricultural prosperity, necessitates vigilant youth welfare programs to channel energies positively and foster community harmony.

Agricultural Renaissance

The influx of water has unleashed a new era of agricultural abundance. Farmers, once constrained by arid conditions, now cultivate diverse crops year-round. Sustainable farming practices are encouraged to safeguard the environment while enhancing yields. The availability of fodder and water has also revitalized animal husbandry, contributing further to economic resilience.

Migration Trends and Cultural Revival

Historically, water scarcity drove migration away from these lands. Today, however, a reversal is evident as the allure of revived villages draws back those who once sought opportunity elsewhere. Cultural traditions rooted in rural Rajasthani life persist, albeit with evolving attitudes towards caste dynamics and gender roles. A steadfast commitment to non-violence towards animals, reflected in the vegetarian lifestyle, underscores the cultural fabric of these communities.

As agriculture becomes possible, the villagers return to watch over their fields

9. Environmental Impacts: Nurturing Nature's Balance

Biodiversity Flourishes

Water, the lifeblood of ecosystems, has revitalized biodiversity along the Sairni River basin. Once sparse, aquatic and amphibious species now thrive, supported by rejuvenated water sources. Migratory birds, like cranes, grace these newfound habitats, while indigenous plant species and trees—both cultivated and wild—flourish where desert vegetation once prevailed.

Eco System Dynamics

The river's ecosystem, transitioning between flowing and stagnant states, mirrors the region's climatic variability. Critical to sustaining biodiversity, efforts to ensure consistent water flow through rejuvenation projects are imperative. The presence of phytoplankton and diverse bird species underscores the ecosystem's resilience and health, despite seasonal fluctuations.

Climate and Weather Patterns

Beyond ecological benefits, the increased vegetation cover has contributed to a noticeable cooling effect across the region. Trees planted along barren slopes mitigate

erosion, enhance soil percolation, and potentially influence local weather patterns, fostering a cycle of rainfall and sustainable environmental practices.

In conclusion, the journey of these villages along the Sairni River basin from adversity to prosperity is a testament to human resilience and the transformative power of water conservation. As these communities navigate newfound challenges and opportunities, their journey underscores the interplay between social progress, environmental stewardship, and cultural preservation in the quest for sustainable development.

10. Economic Impacts: A New Dawn of Prosperity

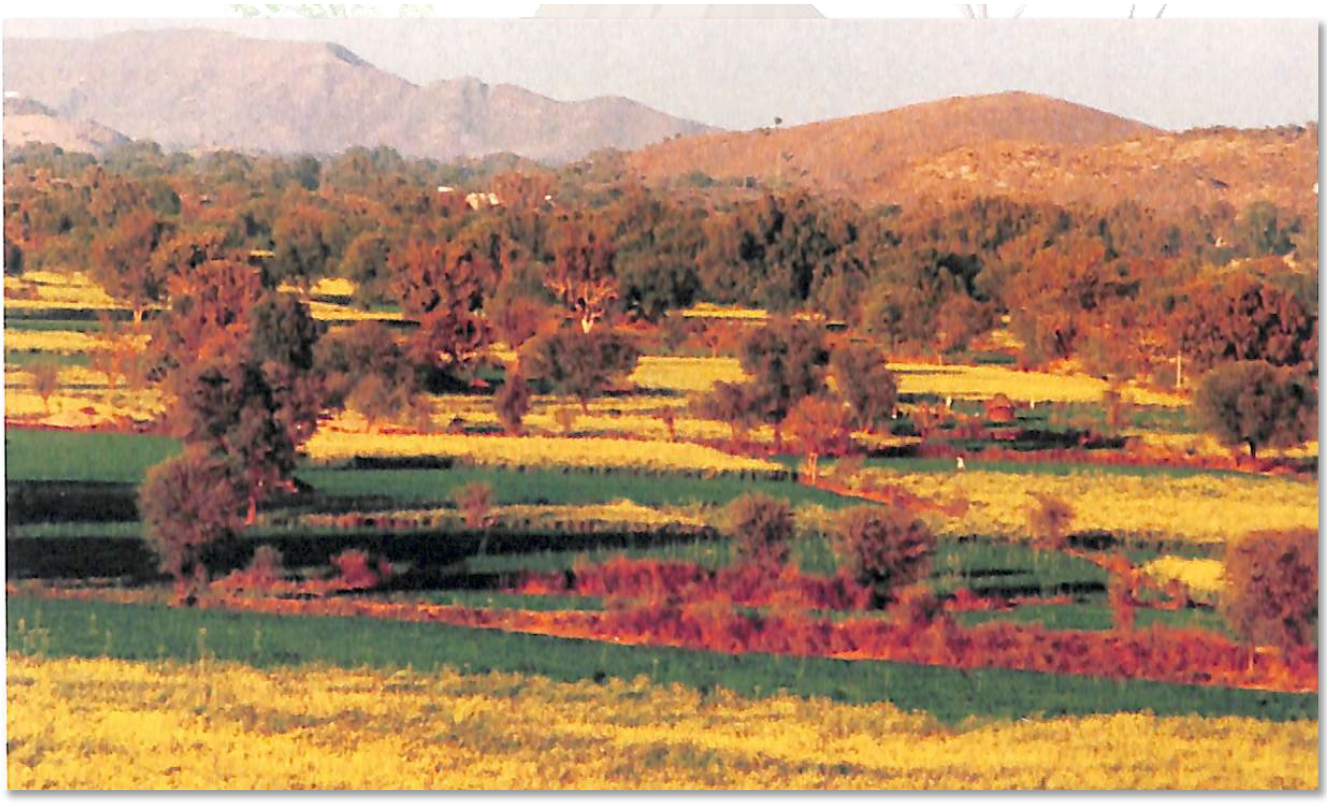
Per Capita Income Surge

The transformation in the socio-economic landscape of the region has brought about an unprecedented rise in the average per capita income. What was once a struggle for sustenance has evolved into a thriving agricultural economy. By expanding cultivated lands and embracing modern agricultural practices, farmers now yield multiple crops annually, facilitated by ample water availability. This shift has significantly bolstered cash flow in villagers' pockets, elevating their economic standing by leaps and bounds.

Microeconomic Transformations

Empowered by increased productivity, farmers are embracing mechanization and modern techniques to further enhance crop yields. This includes securing microloans from rural banks, marking a pivotal microeconomic shift. The ability to repay these loans is now assured, thanks to sustained cash flows throughout the year, marking a stark departure from earlier cycles of uncertainty.

Agro-Economic Dynamics



Despite the economic upturn driven by enhanced crop yields and year-round cultivation, the agricultural community remains cautious about embracing innovation.

Market volatility and insecurity continue to curb risk appetite among farmers. Initiatives such as free consultancy, soil health assessments, and crop insurance schemes like Kisan Fasal Bima Yojna are crucial steps towards fostering confidence and resilience in agricultural practices.

Challenges in Dairy Industry

While crop agriculture thrives, the dairy sector faces significant hurdles. The burgeoning milk business, bolstered by increased fodder and water availability, is constrained by inadequate cold storage and refrigerated transport facilities. The absence of nearby dairy processing facilities exacerbates these challenges, limiting growth opportunities. Addressing these infrastructure gaps is essential to fully harnessing the region's potential in dairy production.In summary, the economic resurgence of villages along the Sairni River basin is a testament to perseverance and adaptation. As these communities navigate new economic horizons, initiatives to bolster agricultural innovation and overcome dairy industry challenges will be pivotal in sustaining and amplifying their newfound prosperity.

11. Conclusion: Toward Sustainable Development and Resilience

Reflecting on the Journey

A mere decade ago, the Parvati River basin faced dire circumstances—water scarcity, environmental degradation, and socio-economic challenges loomed large. Natural factors like erratic rainfall and human activities such as over-exploitation of resources compounded these issues. This period marked a crucial turning point for the region.

Areas for Improvement: Future Courses of Action

While the revitalization of the Sairni river basin has been commendable, there are several key areas where further enhancements can be pursued to foster an even more robust social and environmental landscape.

Integrated River Basin Approach Various initiatives aimed at securing and sustaining water resources in the Sarini river basin are currently underway, but they operate independently without coordination. This fragmented approach calls for an integrated river basin strategy where all efforts complement each other, minimizing duplication and maximizing effectiveness. Such a unified approach promises superior outcomes and cost savings.

Exploiting Additional Opportunities Certain villages like Kheda, Garh Mandora, and Rundhpura have not fully tapped into their water retention capacities, leading to complete drying of lakes and dams by March. There exists significant potential to expand water storage capabilities through increased community involvement and resource mobilization. Doubling the current water holding capacity could transform the region into a perennial water source, ensuring long-term water sustainability.

Addressing the Initiative Deficit While the demand for additional dams and water works reflects growing awareness among villagers, it also underscores a reliance on external

entities like NGOs and government bodies to solve local challenges. With evolving socioeconomic conditions, there is an opportunity for village communities to take more ownership of such projects independently, having already witnessed successful outcomes.

Mitigating Potential Environmental Hazards An incident involving the death of thousands of fish in Kanjari ka Taal highlighted potential environmental risks. The discharge of chemicals or medicines from a nearby cattle asylum into the dam's water raised concerns about water contamination. While such incidents are rare, they underscore the need for heightened awareness and protection of precious water resources.

Enhancing Domestic Sanitation and Public Hygiene Despite government initiatives like Swachh Bharat Abhiyan, visible progress in sanitation facilities remains inadequate, leading to open defecation and potential water pollution during monsoons. Improved sanitation infrastructure, especially clean toilets for girls in schools, could significantly enhance public health and educational outcomes.

Promoting Water Discipline While recent improvements in water management are notable, rampant water usage persists in some areas, threatening to revert to previous scarcity conditions. Cultivating water discipline through practices like drip irrigation and promoting

environmental-friendly techniques among farmers are critical steps to sustain these gains.

Establishing a Sustainable Ecosystem The current water management approach occasionally creates isolated ecosystems rather than a continuous flow in the riverbed. Connecting these fragmented systems through strategic water works and extensive plantation efforts can establish a sustainable lotic ecosystem, ensuring continuous water flow and ecological balance.

Advancing Eco-Friendly Agricultural Practices Farmers' reliance on chemicals for higher yields poses long-term risks like soil degradation and contamination. Encouraging eco-friendly practices such as organic farming, intercropping, and the use of natural fertilizers is crucial. Providing training and support for these practices can enhance agricultural sustainability while safeguarding environmental health.

Supporting Market Innovations With emerging from water scarcity, there is a need to incentivize innovative and sustainable farming practices. Ensuring financial security for farmers adopting these methods and promoting schemes like soil health cards and crop insurance will encourage broader adoption and economic stability.

Promoting Animal Husbandry and Fisheries Addressing cultural stigmas against animal farming could diversify local economies and enhance food security. Public awareness campaigns and modern agricultural training can foster acceptance and support for activities like dairy farming and fisheries, alongside establishing necessary infrastructure like veterinary services.

Managing Pest Control Measures Farmers'

Concerns over wildlife threats like Blue Bulls and Wild Boars impacting crop productivity highlight the need for effective, humane pest control strategies. Implementing biological fencing and local species management can mitigate these challenges while respecting community sentiments.

The Path to Water Independence and Sustainability

To achieve lasting water sustainability, extensive afforestation from upper watershed areas to riverbeds is essential. This approach not only reduces erosion and runoff but also replenishes groundwater reserves. Additionally, infrastructure like check dams, retaining walls, and groundwater recharging wells must be strategically deployed. These

measures, illustrated in Annexure E, offer a roadmap for the region's future development.

In conclusion, the journey to assess the rejuvenation efforts in the Sairni river basin through water conservation has been deeply insightful. It underscores the collective efforts of numerous individuals who have made this transformation possible. By acknowledging these environmental champions, I commit to pursuing similar initiatives in the future, driven by a desire for sustainable development and ecological stewardship.

Achievements and Transformations

Today, the landscape of the Parvati River basin stands transformed, thanks to the collective efforts of local communities, supported by NGOs, CSR initiatives, and visionary organizations like Tarun Bharat Sangh. The strategic construction of dams and comprehensive water conservation measures has led to resurgence in water availability, revitalization of biodiversity, and an expansion of green cover. These efforts have not only restored ecological balance but also empowered communities economically.

Sustainability Through Collaboration

As we celebrate these achievements, the journey toward sustainability must continue with renewed vigour. Coordination among stakeholders—villagers, NGOs, government agencies—is critical to sustaining and building upon these gains. An integrated river basin approach will synergize efforts, optimize resources, and ensure holistic development across the region. By leveraging the untapped potential in villages like Kheda and Garh Mandora, where water retention capacity remains underutilized, we can further enhance resilience against future challenges.

Addressing Persistent Challenges

Despite the progress, challenges persist. Over-reliance on external agencies for development projects and occasional environmental hazards underscore the need for local empowerment and enhanced awareness. Initiatives must prioritize improving sanitation infrastructure, instilling water conservation practices, and promoting eco-friendly agricultural techniques. These steps are essential to safeguarding the region's long-term sustainability and resilience.

Vision for Future Development

Looking forward, our vision for the Parvati River basin is one of sustainable development and resilience. It entails implementing robust watershed management strategies, extensive afforestation programs, and promoting sustainable agricultural practices. Measures such as constructing check dams, enhancing groundwater recharge through innovative techniques, and establishing anti-erosion measures will bolster water security and mitigate environmental risks. Embracing these initiatives will not only ensure continuous water flow but also foster the growth of eco-friendly farming and dairy sectors, thereby enhancing livelihoods and community well-being.

Commitment to Progress

In conclusion, the journey assessing the rejuvenation efforts in the Sairni River basin has been both enlightening and inspiring. It reaffirms our commitment to sustainable development and underscores the transformative power of collective action. By

honouring the contributions of all stakeholders and committing to continued collaboration, we embark on a path toward a resilient and thriving Parvati River basin—one that serves as a model for sustainable development nationwide and beyond.

12. Transformation of Rever Region from Brana land to thriving Ecosystem

The cultivation of "Sarju" has been established twice in 100 years. Both times it was revived without the support of the government. The basis for the revival of "Sarju" was the community's effort. No one plundered or took away the water of "Sarju"; even today, no one is taking it. There was no cultivation of crops here before, but now new crops are flourishing. Initially, there were mustard, millet, peas, and barley, but now wheat, mustard, peas, coriander, potato, garlic, and many other vegetables are being grown. Crop cycles are now linked with the rainy season. The "Sankhari" river ensured the irrigation of crops. Even after proper irrigation, the river remained clean, which is a sign of good hope.

Like all of India, the local community here also has a significant role in conserving water, forests, and land. But the community's concern for water conservation is strong here. They have increased the land for new farming by two times. Previously, without water, not a single crop could grow, but now both crops are being harvested well. Where there was no mustard production, now mustard is produced from 100 to 300 units. I have seen and heard examples from "Senari" where previously not a single pea or mustard was grown, but now they produce 200 units of peas and 400 units of mustard. These facts are discussed by all the children of "Sarju."

Women have faced less hardship in fetching water. Now, children go to school, and girls take great interest in studying. Women's health has significantly improved. There are no longer any chronic diseases. The physical condition and health maintenance capacity have increased. Women now speak confidently and actively participate in village social decisions. Now, many domestic and international tourists visit this area. Previously, the river area was plagued by robbers, so no one from outside came here. Seeing the good behavior of the people, now tourists are increasingly attracted to this area. The work on water was started by Taiqshwar, then Peenu Singh established his group in this area. He did not succeed; r-Hkk-la- helped him with open hands. This prepared many people for water conservation, like Jagannath, Mukesh, Nathurang, Ranjeet Singh, and many others, who are still working in this area and are very popular.

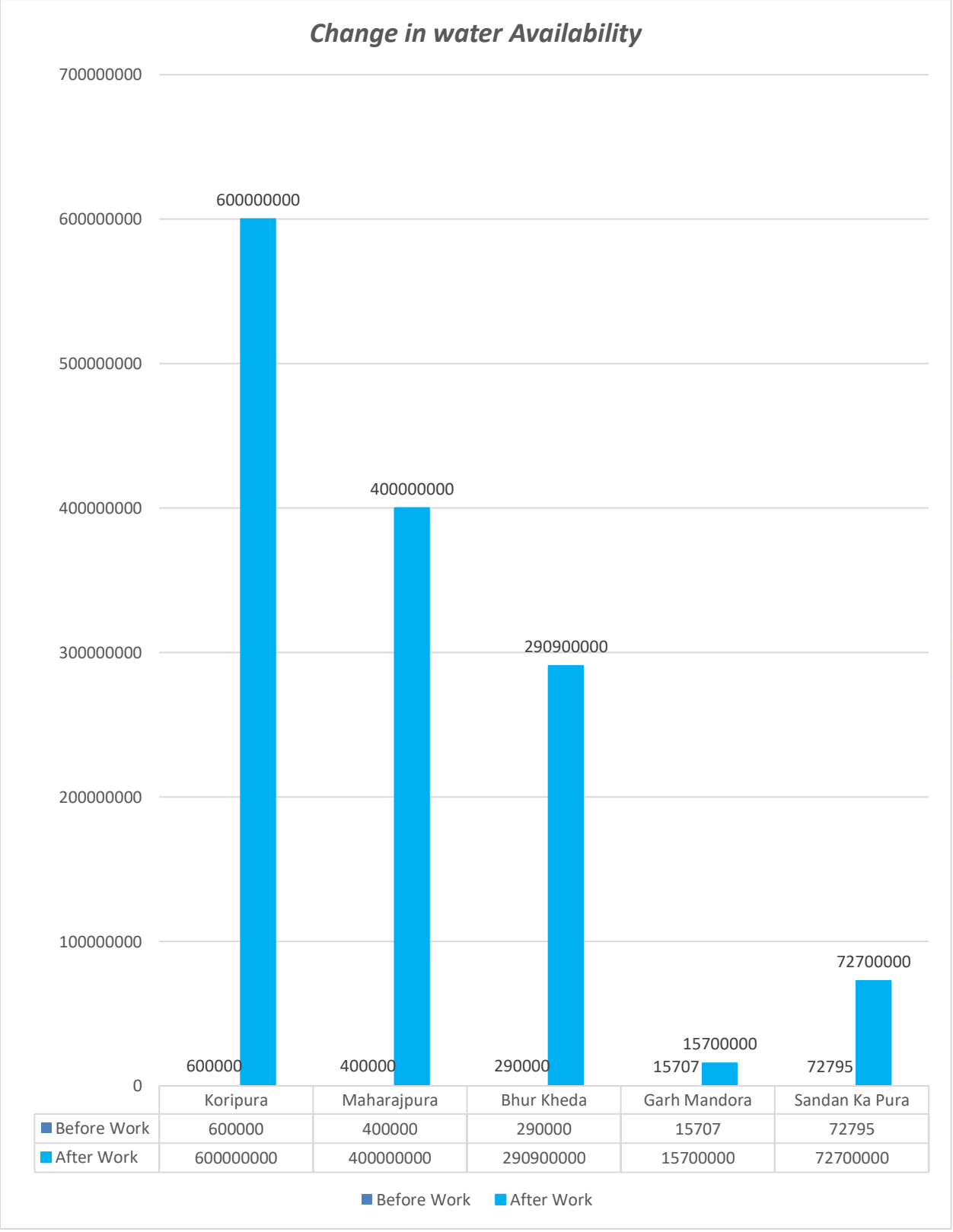
The efforts to create work opportunities in this area were made by Asmatullah. Banwari Khurana documented it, and Tyiqshwar prepared people and the team for work.

Before the river revival, there was a lot of sand, dust, and mud in this area. Grass and forests were continuously disappearing. All the ponds dried up. Agriculture and animal husbandry had ceased. The aquatic life and wildlife increased significantly in this area. In water, turtles, fish, and many other aquatic creatures have started to grow. The water level has risen, and it has become clean and abundant. The water reserve has become "Sankhari" and remains significant. Only 160 water reserves have been conserved, accounting for 48% of the water. This filled the land with green crops, fulfilling all the needs of agriculture and animal husbandry. These two rivers now have available rainwater. The annual average rainfall is 616 mm, which is 0.6 meters.

In 1990, 2% of the 841 sq. km. of the river area was barren. Now the barren area has decreased. Only 14% of the river region remains barren. Agriculture has spread, covering 2% of the land, which was barren.

The cultivation of crops is continuously changing according to necessity. If water is not used correctly, it seeps underground. In this area, prosperity and barren land come together. Previously, 64% was prosperous, and 4% was barren land. Now, barren land has declined, and prosperous land has decreased to 22.6%. According to the official government report of the district in 2011, the area under agriculture was 4.80%, forest land 34.30%, industrial, residential where agriculture cannot be done 9.70%, and unsuitable barren land 8.40%.

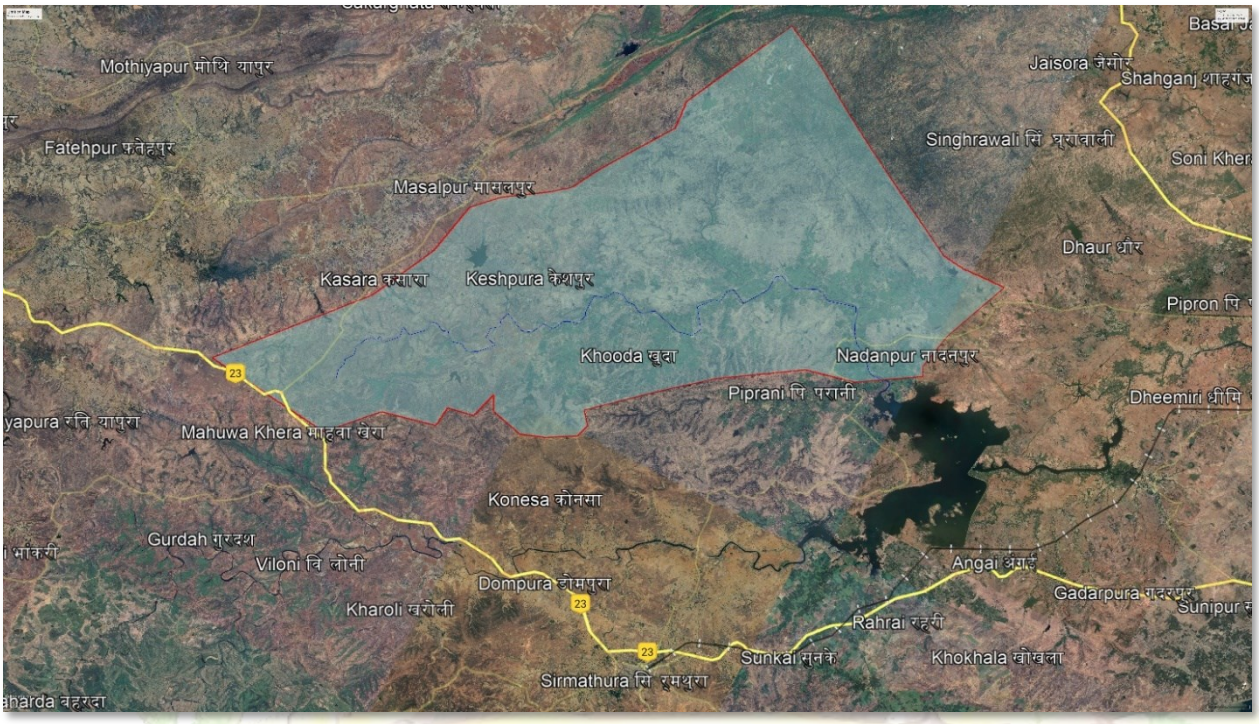
13. Change in water Availability



14. ANNEXTURES

14.1. ANNEXTURE A

SAIRNI RIVER BASIN



14.2. ANNEXTURE B
BIO-DIVERSITY STATUS

Plants				
Sr No	**Local Name**	**Common Name**	**Scientific Name**	**Remarks (Sited/Reported)**
1	Bhirbhiri			Reported
2	Berua			Reported
3	Neem	Neem	Azadirachta Indica	Sited
4	Pipal	Pipal	Ficus religiosa	Sited
5	Imli	Tamarind	Tamarindus indica	Sited
6	Bel	Belpatra	Aegle marmelos	Sited
7	Khajoor	Dates	Phoenix dactylifera	Reported
8	Pakhar			Reported
9	Jhari			Sited
10	Ghaneri	Lantana	Lantana Camara	Sited
Crops				
Sr No	**Local Name**	**Common Name**	**Scientific Name**	**Remarks (Sited/Reported)**
1	Bajra	Pearl Millet	Pennisetum glaucum	Reported
2	Genhu	Wheat	Triticum aestivum	Reported
3	Chana	Chickpea	Cicer arietinum	Reported
4	Rai	Mustard	Brassica juncea	Reported
5	Rabba			Reported
6	Bamoor			Reported
Fruits				
Sr No	**Local Name**	**Common Name**	**Scientific Name**	**Remarks (Sited/Reported)**
1	Anar	Pomegranate	Punica granatum	Reported
2	Amrud	Guava	Psidium guajava	Reported
3	Orange	Orange	Citrus sinensis	Reported
4	Papita	Papaya	Carica papaya	Sited
5	Nimboo	Lemon	Citrus aurantifolia	Reported

Animals				
Sr No	**Local Name**	**Common Name**	**Scientific Name**	**Remarks (Sited/Reported)**
1	Jangli Suar	Wild Boar	Sus scrofa	Reported
2	Neel Roz	Blue Bull (Nilgai)	Boselaphus tragocamelus	Sited
3	Galel			Reported
4	Khoryo			Reported
5	Siyaar	Jackal	Canis aureus	Reported
6	Gedua			Reported
7	Baghero	Leopard	Panthera pardus	Reported
8	Cobra	Indian Cobra	Naja naja	Sited
9	Jarakh			
Birds				
Sr No	**Local Name**	**Common Name**	**Scientific Name**	**Remarks (Sited/Reported)**
1	Patera			Reported
2	Titahari	Red-wattled Lapwing	Vanellus indicus	Sited
3	Neelkanth	Indian Roller	Coracias benghalensis	Sited
4	Saras	Sarus Crane	Antigone antigone	Sited
5	Titar	Grey Francolin	Francolinus pondicerianus	Sited
6	Badak	Duck	Anas platyrhynchos	Sited
7	Mor	Peacock	Pavo cristatus	Sited
8	Tiger Butterflies		Genera Ideopsis	Sited

Amphibians				
Sr No	**Local Name**	**Common Name**	**Scientific Name**	**Remarks (Sited/Reported)**
1	Crocodile			Reported
2	Turtles			Reported
3	Crabs			Reported
Aquatic Animals				
Sr No	**Local Name**	**Common Name**	**Scientific Name**	**Remarks (Sited/Reported)**
1	Rohu	Rohu Fish	Labeo rohita	Reported
2	Katla	Katla Fish	Catla catla	Reported

14.3. ANNEXTURE C

SITE LOCATION AND WEATHER DETAILS

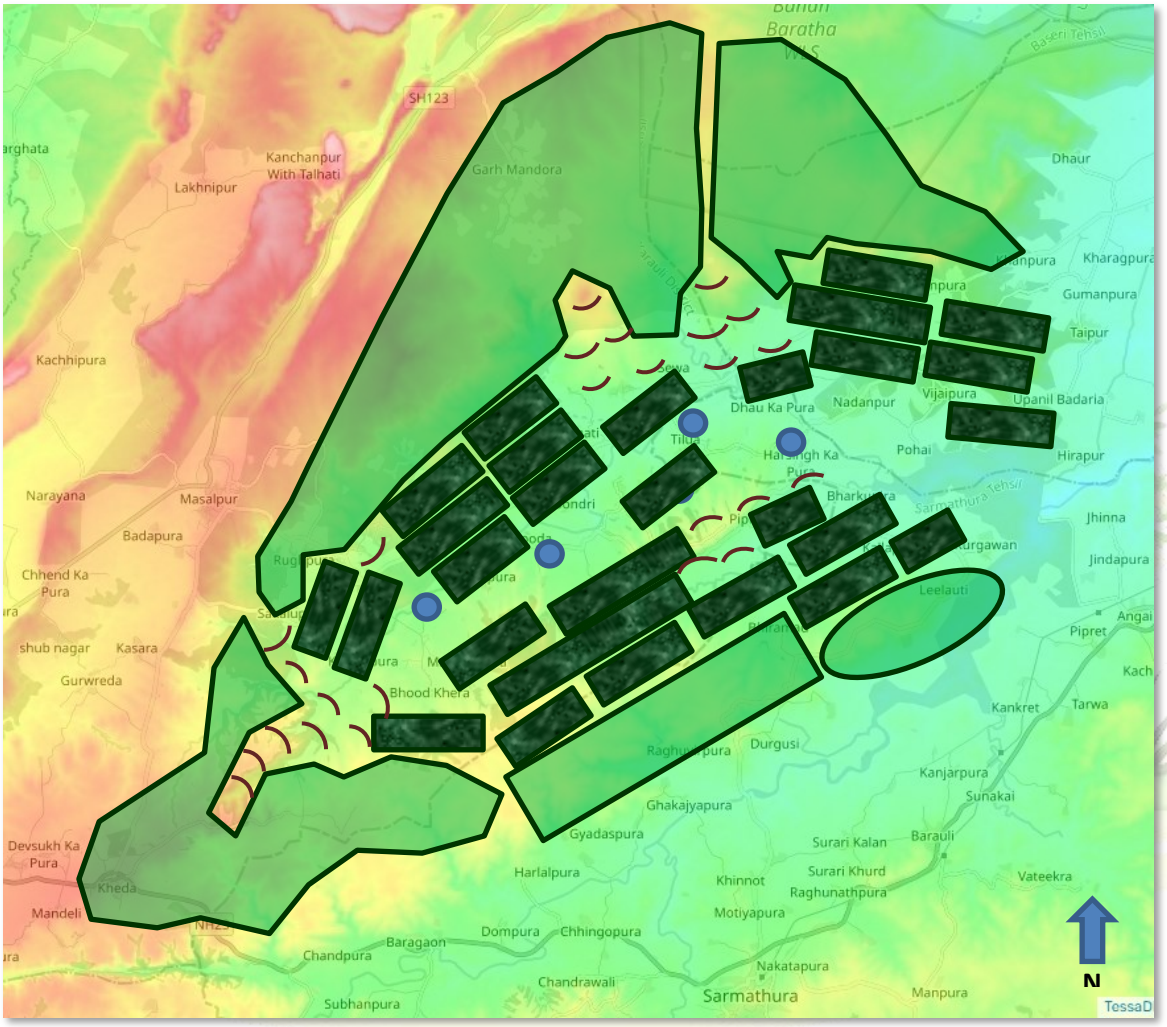
Sr. No.	Village	Eastings	Northings	Alt (In Mtrs)
1.	**Koripura**	77.2706464	26.5925012	260
2.	**Mardai Kalan dam**	77.3359334	26.6261164	275
3.	**Arounda dam**	77.3483896	26.6247380	240
4.	**Balaji ka Taal, Dawoodpur**	77.3017852	26.5874079	250
5.	**Sandan ka pura (Fadale ka Pura)**	77.3233223	26.6028960	250
6.	**Dried lake Kheda vill**	77.2044012	26.5464354	330
7.	**Rundhpura dam**	77.2561702	26.6261302	320
8.	**Koripura dam**	77.2612369	26.5776249	265

14.4. ANNEXTURE D

SOCIAL AND DEMOGRAPHIC DETAILS

Sr. No.	Name of village	Population	Schooling	Health Care Support	Area under irrigation (in Bigha)	No of Dams	Holding Cap (Cr ltr)	Year of Construction
1.	**Kheda**	800	8th	-	400	20	50-60	2017-23
2.	**Kori pura**	750	8th	-	800	05	200	2020-22
3.	**Mardai kalan (Maharajpur)**	650	8th	-	1500	10	140	2013-22
4.	**Budhkheda**	300	5th	-	600	05	100	201624
5.	**Masalpur**	10,000	PG	Community Health Center	300	02	04	2020-22
6.	**Rundhpura**	1000	12th	Dispensary	200	02	20	2017-22
7.	**Sandanka pura**	150	5th	-	250	02	17	2016-20
8.	**Khunda**	1200	12th	Dispensary	1200	05	03	2020-22
9.	**Arounda**	250	5th	-	300	10	100	2018-20
10.	**Dawoodpur**	600	8th	-	500	12	120	2018-23
11.	**Garh mandora**	750	8th	-	900	25	100	2016-23

14.5. ANNEXTURE E
SUGGESTED PLAN OF ACTION



LEGENDS	
AREAS RECOMENDED FOR PLANTATION	
RECOMENDED TERRECI	
CHECK DAMS/ WALLS	
RECHARGE WELLS	

15. Post-Transformation Community Assessment Questionnaire

Background Information:

- Name (optional):
- Age:
- Gender:
- Occupation (if applicable):

When Did the Work Start?

- When did the community start working on restoring the water resource project?
- Was there a specific event or time when the efforts began?

Community Involvement:

- Did people from the community come together to help with this cause?
- How many community members were involved in the restoration efforts?

Initial Village Status:

- What was the status of the village when the work started?
- Can you describe the conditions of the village before the restoration efforts began?

Environmental Changes:

- How has the environment changed since you got more water?
- Have you noticed more plants or animals around?

Flora and Fauna Recovery:

- Can you tell us about any new plants or animals you've seen?
- Have you seen any animals that were gone before?

Aquatic Life Revitalization:

- Have you noticed more fish or other water animals since the river got better?
- What kinds of fish have you seen?

Biodiversity Assessment:

- Do you think there are more different kinds of living things now than before?
- Can you tell us about any special bugs, birds, or animals you've seen lately?

Community Well-being:

- How has having more water impacted your life?
- Have you seen any changes in health, jobs, or friendships since then?

Sustainable Practices:

- What are you doing to keep the water and area healthy now?
- Do you and your friends work together to take care of things?

Economic Opportunities:

- Have you found new ways to make money since things got better?
- Are you selling anything from the land or river?

Social Cohesion:

- Do you feel closer to your friends and neighbors now?
- Have you noticed people being nicer to each other?

Future Resilience:

- What do you think will happen in the future now that things are better?
- Are you preparing for anything bad that might happen?

Farming and Agriculture:

- Have you started growing crops or plants since you got more water?
- What are you growing now?

Making Money from Farming:

- Are you selling any of the things you grow?
- How has farming helped you make money?

Better Harvests:

- Have you noticed changes in how well your crops grow now?
- Are your harvests bigger or better?

Learning and Sharing:

- Have you learned new skills related to farming?
- Do you share what you've learned with others?

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A serving officer of the Indian Army with close to two decades of glorious military service, Lieutenant Colonel Ghansham Chandrakant Ugale has always been keenly enthusiastic about River Rejuvenation projects in the country. To this end, he went on to pursue a Masters in Environmental Sciences from the Nalanda Open University based in Patna, while in service. As part of the pioneering team of the Composite Ecological Task Force (CETF) Battalion of the Territorial Army, he has worked extensively for the Rejuvenation of the River Ganga, when he was posted as the Officer-in-Charge of the CETF Command Planning Team, as part of the 'Namami Gange' programme of the National Mission for Clean Ganga under the Ministry of Jal Shakti (Department of Water Resources, River Development & Ganga Rejuvenation).

During the course of this posting, he has contributed significantly to numerous Mass Public Awareness and Participation Campaigns, River Bank Stabilization & Wetland Rejuvenation projects, Anti-Soil Erosion Plantation drives, Biodiversity Conservation as well as Pollution Control and Mitigation Works. The present study too was undertaken by the author so as to accrue a deeper insight into various aspects of River Rejuvenation projects undertaken in various parts of the country.

……..THE AUTHOR

……Lt Col Ghansham Chandrakant Ugale

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