The Good Sight

Champions of Change

A smile as bright as her future

Photo by Muhammad Ali Zaidi
After being associated with SRIJAN, Lakshmi Kushwaha has encouraged many women to adopt organic agriculture.

Restoring tanks has resulted in increased water availability for irrigation.

How a 2019-launched initiative is uplifting the lives of Bundelkhand’s rural communities by restoring historical tanks and augmenting agrarian livelihoods.

From drought to prosperity

How a 2019-launched initiative is uplifting the lives of Bundelkhand’s rural communities by restoring historical tanks and augmenting agrarian livelihoods.
Bundelkhand Initiative for Water, Agriculture, and Livelihoods (BIWAL) is an attempt to revive the Bundelkhand region’s traditional water bodies and the surrounding ecosystem. The region is hilly and undulating and comprises 14 contiguous districts in the Southern belt of Uttar Pradesh and the Northern area of Madhya Pradesh states. Bundelkhand has historically been a water-scarce region as it is bereft of significant river systems, and the adverse geological conditions lead to suboptimal recharge.

The fact was known by the ancient communities living in the region that had built an estimated 8000 traditional water bodies between the 8th to the 12th century, funded by the then reigning Chandela and Bundela kings. However, most of these tanks were disused due to the siltation of beds, encroachment in the catchments, and illegal occupation of the tank beds. Coupled with this, the heavy dependence on groundwater resources such as tubewells has further deteriorated the water condition of the region.

BIWAL: Facts & Figures

- It is a joint undertaking by six civil action organizations led by SRIJAN and the communities to collectively revive the water harvesting culture of the region. This consortium is led by SRIJAN and intends to work on rural Bundelkhand’s holistic and comprehensive social and economic development.
- Since the program’s launch in 2019, it has positively impacted the lives of 24,309 farmers in more than 310 villages.
- It is through the restoration of 222 historic tanks, excavation of 1072 Dohas (Water harvesting structures), setting up of 175 Prakritik Krishi Kendras (bioresource centers), establishing of 470 multi-layer farms, and nurturing 17 Tapovans (mini-forests).
Three-sided reservoirs, in Gondwana comprising water, and Gond Kings funded huge Katas, tanks. Bihar had the famous Ahar Pynes to store water, namely Tamil Nadu, Andhra Pradesh, and Madhya Pradesh and Orissa. Three states of South India, in Tamil Nadu, and Chevuru tanks in Andhra Pradesh. Similarly, Keres was built in Karnataka, Eri tanks in Meghna. Tanks were built between 800 to 1200 AD. the Bundelkhand region, which Chandela and Bundela tanks, were built several centuries ago to provide water in times of scarcity and in years of normal rainfall for irrigation. With erratic rainfall, the agricultural productivity of the region has suffered from the vagaries of monsoons over two dozen villages in this Bundelkhand region. The first category of tanks was built by the local communities. These tanks are in urgent need of repair. Over the years the region has faced the brunt of droughts and water scarcity again for deforestation, the diversion of catchment areas for other purposes, underscoring their continued relevance, and increased dependence on groundwater. Bundelkhand is an agro-climatically and socio-culturally distinct region. It has languished behind other regions, even within these states, which by themselves rank low amongst India’s economic development states. Geographically it straddles the Vindhyan plateaus (overwhelmingly in Madhya Pradesh) and the Gangetic plains (mostly in Uttar Pradesh but also in Madhya Pradesh). Beest with light soils with poor moisture retention capacity, agriculture here has suffered from the vagaries of monsoon. The primary cultivators comprise 47% of the population, while 26.8% are laborers with a predomination of agriculture laborers. 40% of the farmers in the region are marginal farmers, 52% are small farmers and 1% are big farmers. Rainfed single-annual cropping systems sustain most of the population, bearing a few tracks that have received the benefits of canal irrigation. With erratic rainfall, the agricultural productivity of the region have dried up. The region have stopped running water, and wells have dried up. Two types of tanks were historically built in the region. The first category of tanks was built by the local communities. These tanks are in urgent need of repair. Over the years the region has faced the brunt of droughts and water scarcity again for deforestation, the diversion of catchment areas for other purposes, underscoring their continued relevance, and increased dependence on groundwater. Bundelkhand is an agro-climatically and socio-culturally distinct region. It has languished behind other regions, even within these states, which by themselves rank low amongst India’s economic development states. Geographically it straddles the Vindhyan plateaus (overwhelmingly in Madhya Pradesh) and the Gangetic plains (mostly in Uttar Pradesh but also in Madhya Pradesh). Beest with light soils with poor moisture retention capacity, agriculture here has suffered from the vagaries of monsoon. The primary cultivators comprise 47% of the population, while 26.8% are laborers with a predomination of agriculture laborers. 40% of the farmers in the region are marginal farmers, 52% are small farmers and 1% are big farmers. Rainfed single-annual cropping systems sustain most of the population, bearing a few tracks that have received the benefits of canal irrigation. With erratic rainfall, the agricultural productivity of the region have dried up. The region have stopped running water, and wells have dried up. Two types of tanks were historically built in the region. The first category of tanks was built by the local communities. These tanks are in urgent need of repair. Over the years the region has faced the brunt of droughts and water scarcity again for deforestation, the diversion of catchment areas for other purposes, underscoring their continued relevance, and increased dependence on groundwater. Bundelkhand is an agro-climatically and socio-culturally distinct region. It has languished behind other regions, even within these states, which by themselves rank low amongst India’s economic development states. Geographically it straddles the Vindhyan plateaus (overwhelmingly in Madhya Pradesh) and the Gangetic plains (mostly in Uttar Pradesh but also in Madhya Pradesh). Beest with light soils with poor moisture retention capacity, agriculture here has suffered from the vagaries of monsoon. The primary cultivators comprise 47% of the population, while 26.8% are laborers with a predomination of agriculture laborers. 40% of the farmers in the region are marginal farmers, 52% are small farmers and 1% are big farmers. Rainfed single-annual cropping systems sustain most of the population, bearing a few tracks that have received the benefits of canal irrigation. With erratic rainfall, the agricultural productivity of the region have dried up. The region have stopped running water, and wells have dried up. Two types of tanks were historically built in the region. The first category of tanks was built by the local communities. These tanks are in urgent need of repair. Over the years the region has faced the brunt of droughts and water scarcity again for deforestation, the diversion of catchment areas for other purposes, underscoring their continued relevance, and increased dependence on groundwater. Bundelkhand is an agro-climatically and socio-culturally distinct region. It has languished behind other regions, even within these states, which by themselves rank low amongst India’s economic development states. Geographically it straddles the Vindhyan plateaus (overwhelmingly in Madhya Pradesh) and the Gangetic plains (mostly in Uttar Pradesh but also in Madhya Pradesh). Beest with light soils with poor moisture retention capacity, agriculture here has suffered from the vagaries of monsoon. The primary cultivators comprise 47% of the population, while 26.8% are laborers with a predomination of agriculture laborers. 40% of the farmers in the region are marginal farmers, 52% are small farmers and 1% are big farmers. Rainfed single-annual cropping systems sustain most of the population, bearing a few tracks that have received the benefits of canal irrigation. With erratic rainfall, the agricultural productivity of the region have dried up. The region have stopped running water, and wells have dried up. Two types of tanks were historically built in the region. The first category of tanks was built by the local communities. These tanks are in urgent need of repair. Over the years the region has faced the brunt of droughts and water scarcity again for deforestation, the diversion of catchment areas for other purposes, underscoring their continued relevance, and increased dependence on groundwater. Bundelkhand is an agro-climatically and socio-culturally distinct region. It has languished behind other regions, even within these states, which by themselves rank low amongst India’s economic development states. Geographically it straddles the Vindhyan plateaus (overwhelmingly in Madhya Pradesh) and the Gangetic plains (mostly in Uttar Pradesh but also in Madhya Pradesh). Beest with light soils with poor moisture retention capacity, agriculture here has suffered from the vagaries of monsoon. The primary cultivators comprise 47% of the population, while 26.8% are laborers with a predomination of agriculture laborers. 40% of the farmers in the region are marginal farmers, 52% are small farmers and 1% are big farmers. Rainfed single-annual cropping systems sustain most of the population, bearing a few tracks that have received the benefits of canal irrigation. With erratic rainfall, the agricultural productivity of the region have dried up. The region have stopped running water, and wells have dried up. Two types of tanks were historically built in the region. The first category of tanks was built by the local communities. These tanks are in urgent need of repair. Over the years the region has faced the brunt of droughts and water scarcity again for deforestation, the diversion of catchment areas for other purposes, underscoring their continued relevance, and increased dependence on groundwater. Bundelkhand is an agro-climatically and socio-culturally distinct region. It has languished behind other regions, even within these states, which by themselves rank low amongst India’s economic development states. Geographically it straddles the Vindhyan plateaus (overwhelmingly in Madhya Pradesh) and the Gangetic plains (mostly in Uttar Pradesh but also in Madhya Pradesh). Beest with light soils with poor moisture retention capacity, agriculture here has suffered from the vagaries of monsoon. The primary cultivators comprise 47% of the population, while 26.8% are laborers with a predomination of agriculture laborers. 40% of the farmers in the region are marginal farmers, 52% are small farmers and 1% are big farmers. Rainfed single-annual cropping systems sustain most of the population, bearing a few tracks that have received the benefits of canal irrigation. With erratic rainfall, the agricultural productivity of the region have dried up. The region have stopped running water, and wells have dried up.
legacy and many rural community assets will be preserved if this is achieved.

The hypothesis for the BIWAL program to uplift the rural economy through work on tank restoration is as follows:

Drought-proofing and assured water for agriculture and allied activities can impede economic growth and social empowerment. A historical legacy in water harvesting would have been restored for use well into the future. It would have contributed to the climate-proofing of landscapes in a region where lack or shortfalls in the availability of water has adversely impacted the economic well-being of the people. Building a pool of local cadres on soil and water conservation and climate-smart agriculture.

The repair and rejuvenation of the tanking economy were seen as an opportunity to pave the way toward community-led management of the natural capital endowed upon them. Hence, the additional impetus was given to promote sustainable agriculture practices to expand avenues of on and off-farm employment. The implementation plan of the region-wide venture of BIWAL thus rested on two major focus areas; help expand and deepen livelihood opportunities with backward integration and forward linkages to strengthen the local agroecology.

The BIWAL initiative was a daunting undertaking due to the large number of tanks spread across several districts, and many attempts had been made in the past to revive tanks on a large scale across the country. But these efforts mainly focussed on repairing physical structures and not on institutional mechanisms to maintain the tank infrastructure. Therefore, it is important to map the socio-economic dynamics around tank infrastructure before initiating any physical works.

In this context, BIWAL, a consortium of CSOs led by SRIJAN with vast experience in work at the grassroots, focussed heavily on fostering relationships with local institutions to ensure the long-term sustainability of the rehabilitation work. As a result, Tank Management Committees (TMCs) were formed at every site to mobilize the local community and ensure the village’s active participation in the revival and desiltation operations of the tank. These TMCs also worked in close coordination with the Gram Sabha and Panchayati Raj Institutions, which have been vested with the constitutional status as the supreme authority at the village level. This led to participatory decision-making and the long-term sustainability of the tank systems.

Strengthening the Tank Management Committees (TMC) is an important strategy to empower the user communities with decision-making responsibilities. It was done by providing access to ready-to-use information on available water and its sparing use, appropriate water budgeting skills, creating an enabling environment, and devolving financial management responsibilities.

The BIWAL worked on more extensive and more comprehensive socio-economic development of the region. Starting with the desilting of ponds and their repair, the initiative worked on building-related water harvesting structures and Climate-smart livelihood practices to optimize production and reduce costs to restore the agroecology of the region. The primary activities undertaken were tank restoration, all application on farms, institutionalization and capacity building of Tank Management Committees (TMCs), excavation of other water recharge/harvesting structures such as Dohas and gabions, promotion of climate-smart agricultural practices through training and support, the establishment of Prakritik Krishi Kendra (resource center for natural farming or Prakritik Krishi Kendra, a center for natural farming), facilitation of women producer groups, promotion of high-density agricultural production systems such as multi-layer farms, nano orchards, kitchen gardens and creation of micro forests known as Tapovans inspired by the Miyawaki technique.

In the last three years, a lot of ground has been covered to restore the tank ecosystem and strengthen local livelihoods by promoting innovative climate-resilient practices. A brief description of the various activities undertaken under the BIWAL initiative is below:
Tank Restoration

The first step of the restoration of the tank is its selection. It is a demand-driven process in that the community around the tank has to be involved in repairing the structure and willing to take up the tank management and maintenance responsibilities post-rehabilitation. Also, priority is given to multi-purpose tanks that are relatively free of encroachments, and there are fewer conflicts within the community regarding tank repair and usage. The tank selection is formalized in the form of a Memorandum of Agreement with the Gram Panchayat.

A Tank Management Committee (TMC) is constituted at a general meeting with the village community to ensure active community participation from the beginning of the work. Efforts are made to ensure the representation of all habitations/communities in the village. The various terms keep in mind while forming the TMC are the responsibility for the overall performance of revival efforts, including water use planning and governance and the redressal of disputes among local stakeholders. Therefore, the capacity building of TMC is crucial for the rehabilitation operations’ success. Training is provided to community members and TMCs on tank maintenance, water-use planning, management, well water monitoring, improved farming practices, and horticulture as well as maintaining records and conducting meetings. A hands-on approach is used for training and capacity building where the implementation of tasks is assigned to TMC members, and CSOs provide field-level support.

Since the project’s initiation, 224 historical tanks have been desilted by the excavation of over 12,434 cubic meters of silt that 4,668 farmers have used. In tank restoration work the project contribution range from 28-33% and community contribution range from 68-72%.

Also, priority is given to multi-purpose tanks as hiring tractors for silt transportation, deciding on the types of tasks is assigned to TMC members, and CSOs have used. In tank restoration work the project contribution range from 28-33% and community contribution range from 68-72%.

While addressing the issue of water, based on the capacity of the local community towards the market. Restoring the tanks has resulted in increased water availability for irrigation. Applying the fertile silt from tank desilting has improved the soil profile of the beneficiary farmers. The surged harvested farmers reported growing mungab (groundnuts), urad, mango (近些年), soyabean, ginder, and saled muslin in the Kharif and wheat, mustard, peas, barley, and potatoes during Rabi, with wheat being the primary crop. The black silt from the tanks has improved soil nutrient content and water retention, leading to improved crop yields, better quality of crops, and reduced conflicts within the community of the Nivar district of Madhya Pradesh, a noticeable impact of desilting a tank is to make wholesome tanks to fetch water anymore. Women spent 2.5 hours on other crops, an improvement of as much as 20 quintals per hectare was reported.

The increase in water availability post-restoration has led most prominently to an increase in the cultivated area in Kharif and Rabi seasons. The total cultivated area increased by 16.5% in Kharif and 17.4% in the Kharif season. The area under irrigation for both cropping periods increased considerably—28% in Kharif and 33% in Rabi as the tank command. Most farmers reported an increase in the water level in tank and duration in the wells. Earlier, most wells dried up by February or March but post the tank renovation, the wells retained water till May. A notable improvement in crop productivity has also been reported. Farmers reported that while the average productivity of other crops, an improvement of as much as 20 quintals per hectare was reported.

Impact

Direct Outcomes of Restoration

After the restoration, the bank stability and immediate access to the storage capacity from the tanks was desilted and restored. It implies that the capacity building of TMCs is crucial for the rehabilitation operations’ success. Training is provided to community members and TMCs on tank maintenance, water-use planning, management, well water monitoring, improved farming practices, and horticulture as well as maintaining records and conducting meetings. A hands-on approach is used for training and capacity building where the implementation of tasks is assigned to TMC members, and CSOs provide field-level support.

Since the project’s initiation, 224 historical tanks have been desilted by the excavation of over 12,434 cubic meters of silt that 4,668 farmers have used. In tank restoration work the project contribution range from 28-33% and community contribution range from 68-72%.

Also, priority is given to multi-purpose tanks as hiring tractors for silt transportation, deciding on the types of tasks is assigned to TMC members, and CSOs have used. In tank restoration work the project contribution range from 28-33% and community contribution range from 68-72%.

While addressing the issue of water, based on the capacity of the local community towards the market. Restoring the tanks has resulted in increased water availability for irrigation. Applying the fertile silt from tank desilting has improved the soil profile of the beneficiary farmers. The surged harvested farmers reported growing mungab (groundnuts), urad, mango (近些年), soyabean, ginder, and saled muslin in the Kharif and wheat, mustard, peas, barley, and potatoes during Rabi, with wheat being the primary crop.

The black silt from the tanks has improved soil nutrient content and water retention, leading to improved crop yields, better quality of crops, and reduced conflicts within the community of the Nivar district of Madhya Pradesh, a noticeable impact of desilting a tank is to make wholesome tanks to fetch water anymore. Women spent 2.5 hours on other crops, an improvement of as much as 20 quintals per hectare was reported.

The increase in water availability post-restoration has led most prominently to an increase in the cultivated area in Kharif and Rabi seasons. The total cultivated area increased by 16.5% in Kharif and 17.4% in the Kharif season. The area under irrigation for both cropping periods increased considerably—28% in Kharif and 33% in Rabi as the tank command. Most farmers reported an increase in the water level in tank and duration in the wells. Earlier, most wells dried up by February or March but post the tank renovation, the wells retained water till May. A notable improvement in crop productivity has also been reported. Farmers reported that while the average productivity of other crops, an improvement of as much as 20 quintals per hectare was reported.
Kesar dreams of attaining higher education and using her skills to improve her life. Interestingly, her association with SRIJAN led to the advancement of her knowledge and brought her closer to achieving her goals. She adopted organic agriculture on her farm and was convinced of its utility. She encouraged many other village women to practice organic agriculture by offering free samples of organic fertilizers and biopesticides. Seeing her active participation in the work, Kesar was nominated as a village resource person for SRIJAN.

While organic inputs had reduced the cost, the uncertainty of good harvests was a significant issue. Acute water scarcity had become a daunting reality for the village. Women of the village had to travel 4-5 km daily to ensure drinking water for their household.

SRIJAN organized a village-level meeting in which the desilting of a Chandeli talaab, an old tank in the village, was discussed. The desilting of a Chandeli talaab, an old tank in the village, was discussed. The desilting took place twice a month. In addition, she has undergone training on water conservation and multi-layer farming techniques and practices and making them to apply in the field.

Kesar became responsible for maintaining the site record book, arranging technique and practices and making farmers and TMC members for better crop planning. Because of her strenuous efforts, there is acceptance among farmers towards new farming techniques and practices and making collective efforts towards achieving water sustainability for the village.

Kesar has helped setting up two nano-orchards, setting up 25 kitchen gardens, plantation of 250 saplings, 3 multi-layer farming, orchards, and agricultural practices. Kesar got interested in the concept and regularly attended meetings. She adopted organic agriculture practices. Kesar got interested in the concept and regularly attended meetings. She adopted organic agriculture on her farm and was convinced of its utility. She encouraged many other village women to practice organic agriculture by offering free samples of organic fertilizers and biopesticides. Seeing her active participation in the work, Kesar was nominated as a village resource person for SRIJAN.

While organic inputs had reduced the cost, the uncertainty of good harvests was a significant issue. Acute water scarcity had become a daunting reality for the village. Women of the village had to travel 4-5 km daily to ensure drinking water for their household.

SRIJAN organized a village-level meeting in which the desilting of a Chandeli talaab, an old tank in the village, was discussed. The desilting took place twice a month. In addition, she has undergone training on water conservation and multi-layer farming techniques and practices and making them to apply in the field.

Kesar became responsible for maintaining the site record book, arranging technique and practices and making collective efforts towards achieving water sustainability for the village.

Kesar’s wish to educate herself and learn has been realized, and it is not just benefiting her but also leading to the advancement of the village and its women.