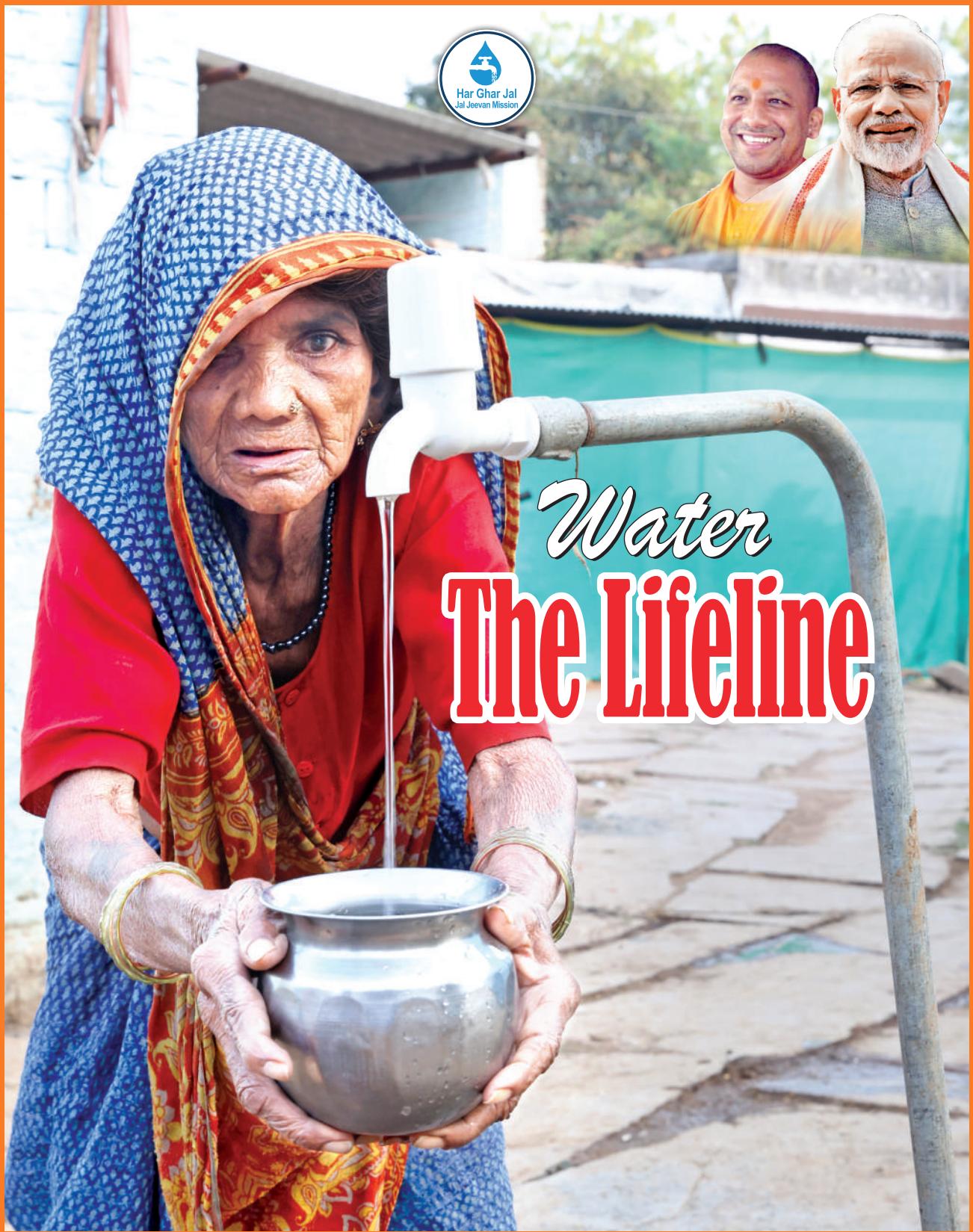


Namami Gange & Rural Water Supply Department Uttar Pradesh

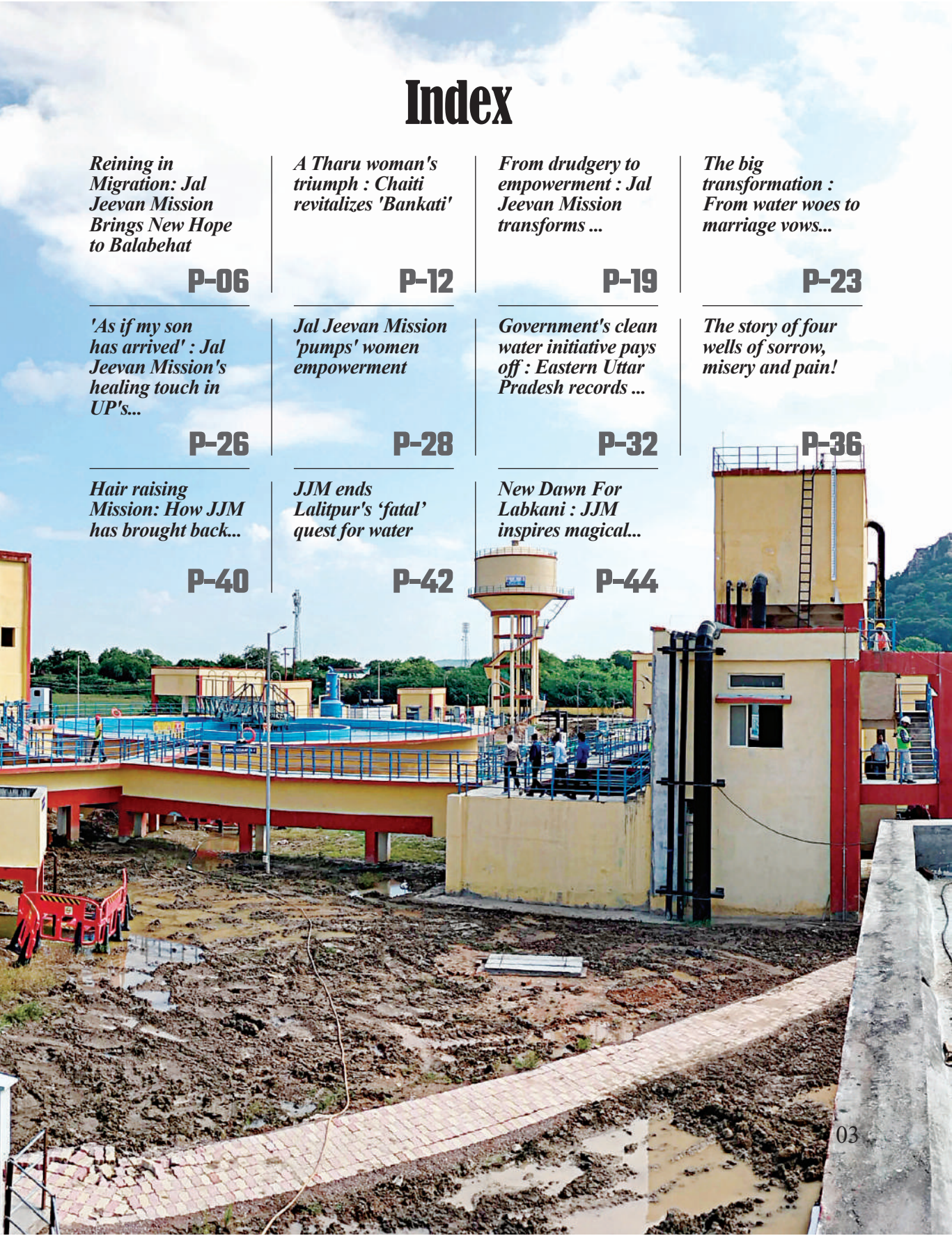
Preface

Access to clean drinking water is a fundamental human right, yet millions of people around the world continue to struggle with this basic necessity. But there is hope. Across India, particularly in the state of Uttar Pradesh, a quiet revolution is underway. Through the tireless efforts of government, NGOs, and community leaders, villages and towns are gaining access to clean drinking water, transforming lives and communities in the process. This collection of success stories celebrates the triumph of these efforts. From the women who have become leaders in their communities, to the children who can now attend school without the burden of water-borne illnesses, from drudgery to women empowerment, from reining in migration to finding life partners these stories showcase the impact that access to clean drinking water can have on individuals, families, and entire communities. As we celebrate our water initiatives, one story stands out for its innovative spirit and transformative impact: The success of solar-powered water schemes. By harnessing the power of the sun to pump and distribute water, these schemes have not only reduced the carbon footprint but also increased the reliability and sustainability of water access for rural communities. With solar-powered water schemes, we have witnessed a significant reduction in energy costs, a decrease in maintenance requirements, and a marked improvement in water quality. We believe that by sharing these successes, we can create a ripple effect of positive change that will spread far and wide in our society.


जल जीवन मिशन

Under-construction WTP in Bundelkhand region

Index



In surface Water schemes, Water Treatment Plants (WTPs) are constructed to treat raw water and make it safe for drinking.


सिलौटा मुख्तकिल ग्राम समूह पेयजल योजना
हर घर जल
जल जीवन मिशन

Reining in Migration

Jal Jeevan Mission Brings New Hope to Balabehat

Pradeep Kushwaha was just eight when he left Lalitpur's Balabehat village. Two decades later, he is now back in the same village.

If water (woes) forced his migration, it also stirred the reverse migration process as Jal Jeevan Mission has ensured potable water at the doorstep of the villagers here.

Pradeep admits that Jal Jeevan Mission has helped him reconnect with his roots as water scarcity has given way to potable water accessibility in hitherto water starved regions of Bundelkhand.

Back in his village, Pradeep, now 28, is enveloped by his childhood memories. His eyes reflect pain of being separated from his village, as he recalls how water woes forced him to leave his village home, his grandparents and friends.

Pradeep Kushwaha of Balabehat village in Lalitpur, UP

"Due to water scarcity, we relocated to Indore where also life wasn't easy as we somehow made two ends meet. I missed my grandparents and friends terribly," he shared.

He admits he was among those kids in Balabehat whose childhood dreams were shattered due to lack of access to clean drinking water. UP Jal Jeevan Mission has however brought about a remarkable transformation by ensuring potable water to this village in Lalitpur's rough terrain. "This remarkable development has now led to reverse migration," he says.

"I still remember the days when my grandparents and parents would walk 6 kilometers to fetch water, balancing 2 pots on their heads while walking along rugged paths. They'd often get injured," says Pramod and adds that Uttar Pradesh's Jal Jeevan Mission has been like a "blessing" for them.

"Now, villagers receive clean drinking water through taps. Water has brought us back too and now it all feels like a dream come true for me. I will engage in farming and labour here but won't leave my village again," he says.

Pramod's elder brother, Meharban Kushwaha, says, "Over 40% people of our village had migrated due to water scarcity. But now that the news of tap water availability is spreading, many are eager to return.

Infact about 10% of such people have already returned. Komal, an elderly woman in Balabehat, says: "All my children left the village due to water scarcity. They migrated to Bhopal, Indore and Delhi. Now with water at doorstep all my sons, daughter-in-laws and their children are happy and seeing our family live together has made us so happy that we feel that we would now live longer for 10 more years."

Seasonal Migration

Summers annually forced seasonal migration in this part of the Country. Only

Komal, an elderly woman in Balabehat village

those who couldn't migrate for different reasons or afford water from tankers remained back. So, for entire summer season, villagers who would move out would make a living by working as labourers in nearby cities or stay with relatives.

Seema Tomar of Balabehat recalls the tough times she faced earlier.

"During summer season we had to leave our houses as the wells too would dry out. The tanker water was costly – about Rs 10 for 3 pots and that too of not very good quality."

According to villagers all four wells in Balabehat village would dry up or water levels would decrease during peak summers, intensifying the struggle for water.

Women and children recall how they would often walk miles to fetch water from the river at different time zones – from noon to midnight and beyond.

They recall that situation was so dire that people would think twice before giving water to their animals.

"In such a scenario, we were left with no other alternative but to migrate to nearby cities and work there for about two to three months and come back after rains," villagers say.

They admit that year after year Balabehat residents would make the same prayer as they would look up to the sky with hope, praying for timely monsoon rains to fill their wells.

Rainfall meant celebration time; the villagers say even as lack of rains would cause depression.

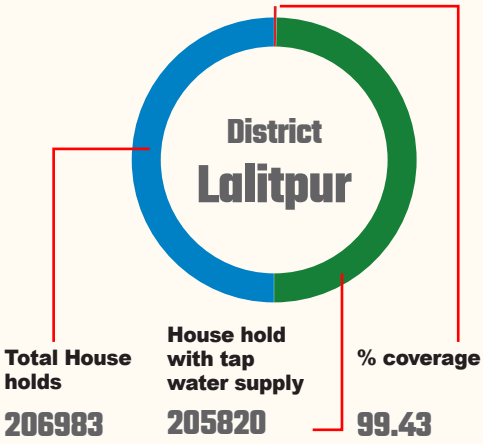
Now, with Jal Jeevan Mission a reality, seasonal migration in Balabehat has declined appreciably as villagers no longer need to venture out in search of work, thanks to the availability of water for irrigation and drinking purposes.

Raja Bhai Tomar, 50, recalls: "Villagers would fetch drinking water from these four wells. When the water levels dropped, we used to climb down into the well and fill buckets. Sometimes, we had to even guard the wells to stop people from using water for irrigation purposes."

"Me and my husband had frequent fights as meals got delayed as there was no water to cook on time. Now, things are much better thanks to JJM," says Seema Tomar.

Seema Tomar recalls the tough times when in Summers there was no water left in wells

Now, Jal Jeevan Mission is also ensuring happy families.



No water, No Marriage

"Marriage was a big issue earlier, as nobody wanted to marry their daughter in this village. Every marriage proposal elicited the same response from the daughters' family. "They would often ask about borewell or another source of water at home," says Sharda Tomar.

"The problem was that there was no guarantee of water availability even after boring," she adds.

"No one married their daughters to our sons here, but with water now reaching our homes, this problem is also getting resolved," says Kunjan Singh of Balabehat.

Health concerns

"We often fell ill after drinking water from tankers and polluted water from other sources as wells and ponds were contaminated. Snakes, fish, and crabs would often be found in such water, putting villagers' lives at risk," says Kunjan.

"We have witnessed many deaths due to Cholera in our village. People fell ill after drinking impure water from the water sources present in the village. The water from the wells was unclean, but we had no other choice but to drink that unclean water," says Sharda devi Tomar.

Sharda Devi Tomar
Balabehat, Lalitpur

Siddhi Thakur is now happy as she could now go to school every day.

Education gets a boost

Siddhi Thakur, a young girl from Balabehat, says she goes to school daily and gets enough time to study and play – all thanks to "JJM". Earlier, she says, she would wake up at 4 am to bring water from kilometres away. "My school started at 8 am and I had to finish the daily drill of bringing water from well before I go to school. Running against this tight deadline meant skipping school frequently, something that has changed now," says Siddhi.

A Tharu woman's triumph

Chaiti revitalizes 'Bankati'

Chaiti, a Tharu woman from Majra Bankati in Bhachakahi village, has brought hope and change in the lives of her community. Born in one of the most remote and underdeveloped areas of the district, Chaiti faced numerous hardships, especially after her early marriage, when she moved to her in-laws' home in Bankati. Despite these difficulties, Chaiti emerged as a pillar of strength, not just for her family but for the entire community.

Bankati is a small village in the tarai region along the Indo Nepal border, in Shravasti, Uttar Pradesh. The village is home to the Tharu tribe, indigenous to this region with 765 individuals and 116 households.

The Tharu people, recognized as a Scheduled Tribe in both India and Nepal's Terai region, face many challenges and are among the most marginalized communities, dealing with significant social and economic hardships. Agriculture remains the primary source of livelihood for the village people, who hold onto their unique cultural heritage, traditions, and simple way of life.

Challenges in Bankati

Life in Bankati is characterized by limited access to basic amenities, with most families living in temporary "kaccha" homes made of mud and thatch. The primary source of income for the villagers is farming and daily

Chaiti, a Tharu woman, operating pump at her village.

wage agricultural work. One of the most pressing issues in the village is the lack of clean drinking water. For years, the residents relied on shallow handpumps, including only 4 India Mark II pumps, to meet their water needs. Unfortunately, the water was untreated, leading to frequent outbreaks of waterborne diseases such as dysentery, cholera, typhoid, and jaundice, which particularly affected the children.

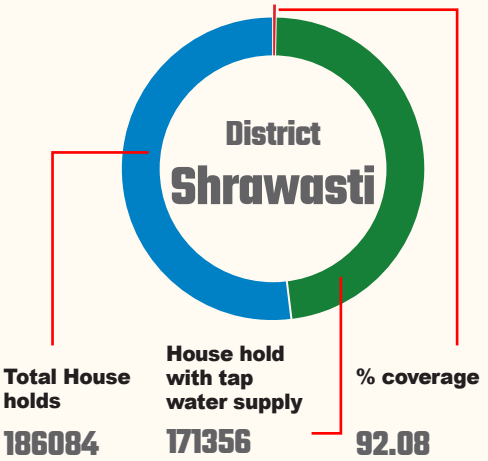
Chaiti's family, like many others, relied on small-scale farming and agricultural labour. Initially, Chaiti assisted her husband in the fields, but she soon realized that their family's future—and the village's overall wellbeing—required more than just farming. One problem she could not overlook was the severe water crisis. Women in Bankati, including Chaiti, had to walk long distances to fetch small amounts of water from distant sources, a task that not only jeopardized their health but also consumed a significant amount of time, limiting their ability to engage in other productive activities. The scarcity of safe drinking water had long been a major challenge in Bankati.

Like many other villagers, Chaiti witnessed her children and those of her neighbours frequently fall ill due to contaminated water from shallow handpumps.

Water supply initiatives/ empowerment.

When the Jal Jeevan Mission initiated a water supply system in Bankati through its Scheme Bankati Bhachkahi, Chaiti saw it as an opportunity for change. She actively participated in community meetings and planning sessions, demonstrating remarkable enthusiasm and commitment. Recognizing her leadership potential, the village leadership selected Chaiti to become the village's first female pump operator—a role traditionally held by men.

Chaiti initially faced scepticism, as the role of a pump operator required technical skills traditionally seen as beyond the scope of women's work in the village. However, with support from her husband, villagers and training provided through the Jal Jeevan Mission (JJM) initiative, she quickly mastered the skills needed to operate and maintain the village's water supply system.



Her appointment as the pump operator not only ensured the efficient functioning of the newly installed system but also brought a sense of pride and empowerment to the women of Bankati.

Community engagement

Chaiti's role extends beyond managing the water system. She actively educates her fellow villagers about the importance of safe drinking water, sanitation, and hygiene practices. Before the Jal Jeevan Mission, women like Chaiti spent hours each day fetching water. Now, with Chaiti managing the village's water supply system, the time spent on this task has been drastically reduced, allowing women to engage in other activities such as education and income generation.

Reflecting on her journey, Chaiti said, "Fetching water every day was exhausting and risky, but I knew we needed clean water for our children's health. When Jal Jeevan Mission came to our village, I wanted to be part of the solution. It wasn't just about water—it was about building a better future for our entire village."

Chaiti's story is one of empowerment, resilience, and community leadership. By stepping up as a female pump operator from a tribal community, she has transformed not only her own life but the lives of many others in her village. Chaiti's journey serves as a reminder that the power to solve pressing challenges like water scarcity and public health often lies within the community itself, waiting for individuals with the courage to step forward and lead. Through her work, she has significantly improved the situation in Bankati by ensuring the village's water sources are well maintained, reducing breakdowns and contamination, and consequently lowering the incidence of waterborne diseases that once plagued children and vulnerable populations.

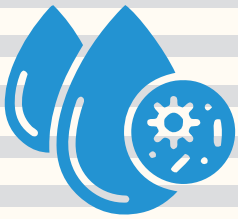
UP Health department data

From a health perspective, the impact is remarkable. The incidence of water-borne

Outbreak of Water Borne Diseases

(As received from Health Department - Sanchari Rog Vibhag)

Year	Total Cases	Total Deaths
2019	443480	17
2020 (covid effected year)	60345	00
2021 (covid effected year)	28449	13
2022 (covid effected year)	42546	25
2023	38026	11
2024	7638	05



diseases has decreased substantially, from 42,546 cases in 2022 to 38,026 cases in 2023 and 7,638 cases in 2024 (till July). This decline has resulted in fewer deaths, dropping from 25 in 2022 to 11 in 2023 and 5 till July 2024 (Source: Communicable Diseases section Department of Health, Uttar Pradesh). Moreover, there were no deaths reported due to Japanese Encephalitis and Acute Encephalitis syndrome in Gorakhpur Division.

(Source: UP Health Department Data)

Meena Devi (in front) and other women of Baijpur village returning after fetching water

From drudgery to empowerment:

Jal Jeevan Mission transforms lives of rural women

Baijpur, a small hamlet in Jhansi's Babina Block in Uttar Pradesh, had long struggled with water scarcity. Women here faced numerous problems, none more challenging than fetching water, both for drinking and other daily, domestic requirements. For generations, they bore the brunt, walking for kilometers to collect water, a daunting drill in the rocky terrains that most women remember.

Meena Devi, a resident of Baijpur is one such woman who was used to the gruelling grind for over two decades.

"When I got married 20-25 years ago, I had to walk 3 to 4 kilometers daily to fetch water from a distant source. The whole day would go by just collecting water for the family. I had never fetched water at my parents' place, but here I had to fill water pitchers every da y."

"Regardless of day or night, we had to climb the rocky terrain to get water if there was a need. We also had to ration water, prioritise its usage, often compromising on our daily needs. It was a very challenging life, " she says.

“Some affluent families even owned wells. We were permitted to draw only a small amount of water at a time from those wells and that too after repeated requests,” says Meena.

Meena's story echoes the struggles of countless women in Baijpur whose days were consumed by water collection, leaving them with little time for family, personal well-being, or other productive pursuits.

Meena's life and those of many other women got positively transformed with the advent of tap water in her home, all courtesy the Jal Jeevan Mission that has helped them break free from water-related drudgery, embracing a brighter, more empowered future.

"Now, with tap water connection in my own home,


Meena Devi

I can devote more time to my family and engage in productive activities," says Meena, her beaming face reflecting her newfound freedom and happiness and showcasing the Jal Jeevan Mission's transformative impact in the life of rural women.

Women in Baijpur admit that after the arrival of Jal Jeevan Mission and potable tap water at the doorstep, they are now empowered to prioritize family, health, and economic productivity. They say that because they are spared the daily drill of walking kilometers to fetch potable water, they can devote more time for their children. Consequently, children can focus better on education and men too have more time to engage in livelihood activities.

Such welcome winds of change have started blowing in other villages too. Take Sehmalpur Tariyari Village in Jaunpur's Sirkoni Block, Uttar Pradesh for instance.

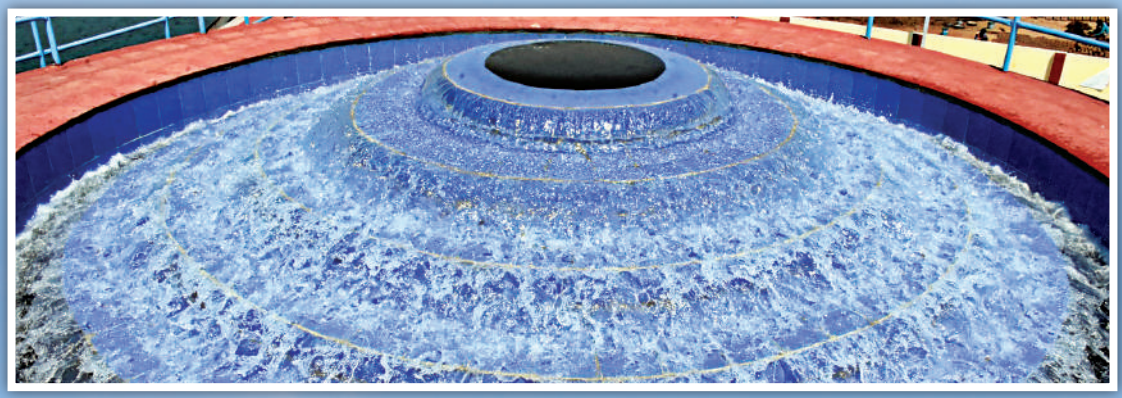
Sushila, a resident of this village has instances like Meena Devi's to recount. With tears in her eyes, she recalls how bad things were not so very long ago.

"Earlier, I had to trek long distances daily to fetch water, shouldering the burden of my family's needs. Irrespective of the weather or the nature of our physical discomfort and pain, fetching water after walking several kilometers was a task that had to be fulfilled. Yes, those were very exhausting days," she recalls while admitting that Jal Jeevan Mission has been like a boon, a blessing for so many women like her.

“Our lives are transformed now,” she admits.

"With potable water at my doorstep, I feel blessed and relieved," she says, her voice filled with gratitude. "I can now cook meals on time and enjoy them with my family. Jal Jeevan Mission has brought me peace and freedom," she adds.

Sushila of Sehmalpur Tariyari Village



Close up shot of the water treatment plant in Mahoba.

Water Treatment
Project District - Mahoba

The big transformation

From water woes to marriage vows in UP's Bundelkhand, courtesy JJM

What is the connection between marriage prospects and water? Well, you will know the connect only if you have lived in Uttar Pradesh's Bundelkhand where many youths, who didn't migrate, stayed bachelors, simply because their village lacked access to potable drinking water at the doorstep.

The arrival of Jal Jeevan Mission – Indian government's flagship programme, focused at providing functional household tap connections (FHTCs) to rural households – has brought with it not just water, but a radiant smile too on the faces of such youth who stayed bachelors, for no fault of theirs.

As traditional concerns surrounding water scarcity begin to evaporate, marriage proposals are back again for the youth of Bundelkhand.

Local residents admit how absence of clean drinking water had previously deterred potential brides' families from considering marriage proposals from youths of Bundelkhand. "However, with the water issue now resolved, the region's youth are finding it easier to find

life partners," they say.

Mewalal Sendh, a resident of Baijpur village, in Jhansi, happily recalls how marriage prospects of the youths of his village have brightened considerably, courtesy transformation brought about by the Jal Jeevan Mission's initiative to ensure availability of water in parched Bundelkhand region in Uttar Pradesh, the country's most populous state.

Mewalal recalls that earlier parents of prospective brides were hesitant to marry their daughters to the village's youths, fearing they would be burdened with fetching water.

Additionally, things became still tougher due to the Zamindari system that was followed in the village.

"The women were required to wear veils and walk barefoot to fetch water from kilometers away. During the rainy season, the area became slippery, and women often slipped, hurt themselves, and broke their water-filled pitchers, he says.

"Now, we're extremely happy that women don't have to venture out for water," Mewalal says. "They have access to clean drinking water in their own homes," he adds.

He says if water had been available earlier, many youths wouldn't have remained bachelors, and their families wouldn't have shifted to other places.

"The scarcity of water had led to migration of people involved in agriculture to other villages or areas, including Gwali and Phulpur. Even the village's Lumberdar had moved to a separate location downhill. However, with the water issue resolved, smiles are back again as people are returning to their roots," says Mewalal.

Under-construction Water Treatment Plant in Maholba. (File photo)

'As if my son has arrived'

Jal Jeevan Mission's healing touch in UP's grieving couple's life

Ram Saran and his wife, residents of Mahoba's Shivhar village in Uttar Pradesh, still recall those days when cruel hands of fate snatched away their son – the ageing couple's life support and sole hope.

The grief-stricken couple felt numb as their world appeared to collapse around them.

More so, as Ram Saran's ageing wife, suffered from a debilitating joint pain. With her only son, her pillar of strength gone, the daily grind of fetching water, a chore essential for survival

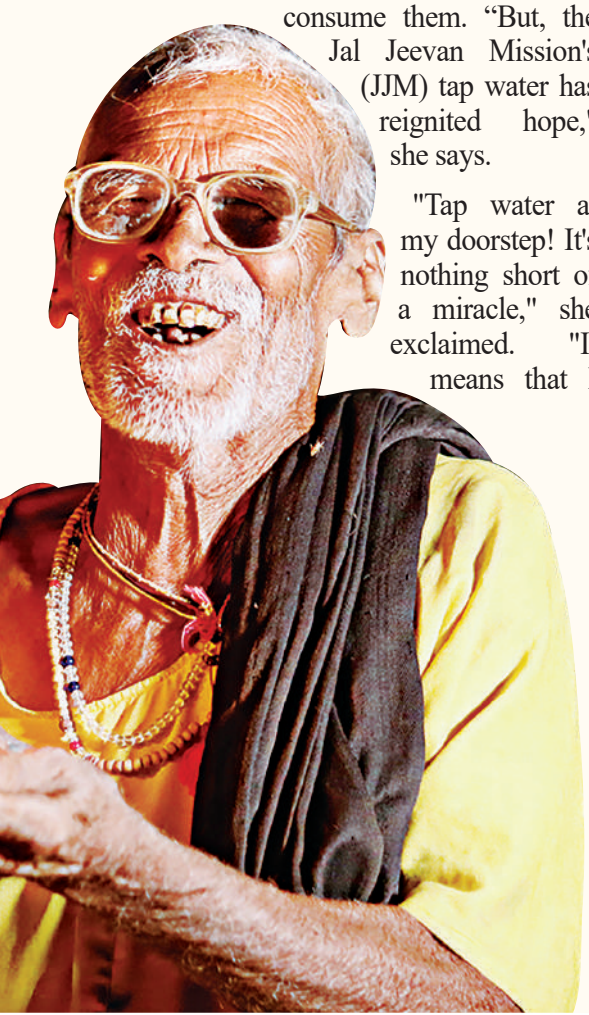
Couple celebrating Jal Diwali after tap water reached their doorstep

became even more difficult. The couple felt completely listless and lost.

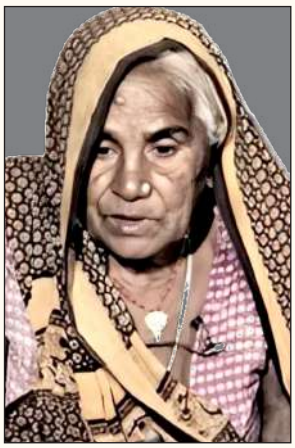
It was at this moment that the Jal Jeevan Mission (JJM) – a flagship programme of the Indian government, focused at providing functional household tap connections (FHTCs) to rural households -- arrived in Shivhar village.

JJM's arrival, which meant doorstep access to potable tap water, marked a turning point in the life of Ram Saran, his wife and in fact the entire Shivhar too.

"The pain of losing my only child was unbearable," Ram Saran's wife said, tears welling up in her eyes. "I felt like giving up on life," she said adding that it was a dire situation which threatened to consume them. "But, the Jal Jeevan Mission's (JJM) tap water has reignited hope," she says.



"Tap water at my doorstep! It's nothing short of a miracle," she exclaimed. "It means that I don't have to undertake those painful walks, endure those seemingly endless waits. Water, a necessity, is now within my reach. It appears to me as if my son has arrived," she adds.



Ram Saran and his wife

Ram Saran's family along with many others in the village also celebrated "Jal Diwali" – a festival recreated on the lines of Diwali, the festival of lights that symbolises triumph of good over evil but in case of "Jal Diwali" it symbolises the triumph over water scarcity. With folded hands, she ofered prayers to the tap, to express her gratitude for the water at the doorstep initiative of the government.

"This tap has eased my physical pain and softened the emotional blow of losing my only son," she says. "Though his absence still hurts, access to water has made life manageable," she adds, gently touching the tap and looking at it with a sparkle in her eyes and a sense of renewed hope. "Life has given me a second chance. I'll cherish every moment, every drop of water," she adds.

For this grieving couple, Jal Jeevan Mission has rekindled hope, alleviating their sufering. Their story serves as a testament to the Mission's impact and how it has brought cheer in the lives of the poorest of the poor and brought about a qualitative improvement in the lives of the poor.

Jal Jeevan Mission 'pumps'

women empowerment

The Jal Jeevan Mission is empowering women in such villages of Uttar Pradesh where earlier they remained confined to the four walls of their homes.

Such is the impact of the Jal Jeevan Mission that these women who once lived a secluded life are now stepping out with confidence, conviction and a sense of purpose.

Neelam, a resident of Nagpali village in Ayodhya

They aren't simple housewives anymore. In their villages they have a new identity, for they are now trained pump operators and water testers armed with field test kit (FTK) who also get paid for their work, courtesy JJM.

Such women admit that their lives have virtually transformed since JJM arrived.

“The Jal Jeevan Mission has not only brought water to my village home but also helped me get gainful employment,” admits Neelam, a resident of Nagpali village in Ayodhya and among the many women beneficiaries of the Jal Jeevan Mission. Neelam, a resident of Nagpali village in Ayodhya

“It is only last year that I received training as a pump operator under the Jal Jeevan Mission. This training opened doors to employment opportunities in my own village. In a way, you can say as I step out of my home with a sense of purpose and get paid for the effort I have put in, I feel empowered,” she says.

"Thanks to the Jal Jeevan Mission, our village now has access to clean drinking water. This has ended the decades-long struggle for water that rural women like me faced. The transformation from water scarcity to potable water access at the doorstep, from abject poverty to gainful employment is magical, brilliant,” she adds.

All those women trained like Neelam have received a specialised free pump operator tool kit.

The kit includes a 300 mm pipe, 130 mm wire cutter, 200 mm plier, 100 mm screwdriver (two-in-one), a winch set and a tester.

“We feel empowered also because as pump operators, we are now handling important tasks and thus that sense of responsibility and the hitherto new-found identity is something that is immensely satisfying. On top of that we get paid too for the work and Figure Urmila Yadav,

resident of Ayodhya.

All in all it has become an immensely rewarding, enriching experience," says Urmila Yadav, another woman pump operator from Ayodhya.


Urmila Yadav, resident of Ayodhya.

"The pump operator training I received has made me and many others like me financially independent," she adds.

Such women beneficiaries admit that the scenario is changing.

"Earlier it was common to find us women walking long distances, at times several kilometers away to fetch potable water. Jal Jeevan Mission's advent has meant that the scenario is changing now and along with water at the doorstep, women are also finding employment, new identity and immense happiness," the beneficiaries admit.

Rani, from Dolawan, Lalitpur says, "I got training in field test kit and now I can test water for various impurities such as iron, nitrate and fluoride and save my villagers against various diseases that happen when we consume impure water." Rani, from Dolawan, Lalitpur

"Earlier, we were just confined to our homes, but with this mission, we have got employment also. Under this scheme we had to conduct test of 100 water samples in our village and I had to test 20 samples," Rani adds.

"Over 1.16 lakh rural women and youth in the state have received training as pump operators. To strengthen women's participation, women from each gram panchayat are also being trained as pump operators. They are being deployed in their own villages, ensuring a steady income," officials said.

"This initiative aims to equip trainees with essential tools, enabling them to efficiently perform their duties as pump operators," they added.

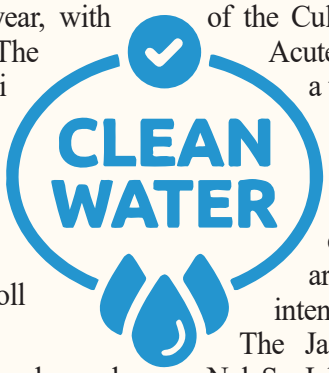

Rani, from Dolawan, Lalitpur

Trained to use Field Testing Kit (FTK) these women have become the guardians of water quality and supply in their villages.

Government's clean water initiative pays off

Eastern Uttar Pradesh records zero deaths from JE, AES in '24

In the year 2005, the deaths of over 6,000 children due to Japanese Encephalitis (JE) and Acute Encephalitis Syndrome (AES) in Eastern Uttar Pradesh shook the Parliament. Over 1,400 children died that year, with Gorakhpur being the epicentre. The then-MP of Gorakhpur, Yogi Adityanath, now the Chief Minister of Uttar Pradesh, played a crucial role in bringing this issue to the forefront. Although policies were formulated and efforts were made, but the death toll had surpassed 50,000 by 2017.



However, the situation has changed dramatically. In the past two years, ie. 2022 and 2023 only one death each has been reported in Bahraich and Kushinagar. Moreover, there have been no JE-related deaths anywhere else. AES cases have also decreased by 99%. A significant reason for this decline is the 'Jal Kranti' (Water Revolution), which has made clean drinking water accessible to every household, thereby controlling the spread of this deadly disease.

In 1978, the first case of Japanese Encephalitis (JE) was reported in Uttar Pradesh. In the initial two decades, more than 30% of the people affected by this disease lost their lives. Notably, the eastern districts of Uttar Pradesh were the worst affected, with children being the most vulnerable. According to the health department, the disease is caused by the bite of the Culex species of mosquitoes, while Acute Encephalitis Syndrome (AES) is a type of brain fever.

To combat the disease, the state government launched a plan to provide clean water and maintain cleanliness in the affected areas. The health department also intensified its vaccination campaign. The Jal Jeevan Mission's "Har Ghar Nal Se Jal" scheme has been instrumental in providing clean drinking water to every household, thereby reducing the spread of the disease.

As the situation was serious and on government's priority list, the Eastern Uttar Pradesh witnessed a rapid increase in providing tap water in affected districts. According to the Jal Jeevan Mission, 85% to 92% of the households in affected districts have been provided with tap water connections.

The Health Department data up to August 13, 2024, show the turnaround in the battle

against Japanese Encephalitis (JE) and Acute Encephalitis Syndrome (AES) in Uttar Pradesh. In Gorakhpur, where about 92.13% of households now have access to tap water, there have been no JE-related deaths reported this year, a stark contrast to three deaths recorded in 2018.

Similarly, in Maharajganj 87.83% and Basti 86.53% households are connected to tap water, and there have been no JE and AES deaths this year. Siddharth Nagar has achieved 85.06% tap water connectivity as on August 13, with no deaths reported this year, despite four deaths in 2018.

Sr.no.	East UP Districts	Number of Tap Connections	Percentage
1	Balrampur	2,87,670	93.00%
2	Bahraich	5,13,677	92.66%
3	Gorakhpur	5,20,422	92.13%
4	Kushinagar	5,01,390	90.73%
5	Sant Kabir Nagar	2,05,200	89.20%
6	Maharajganj	3,79,987	87.83%
7	Basti	3,11,276	86.53%
8	Shravasti	1,64,865	88.60%
9	Siddharthnagar	3,42,195	85.06%

Kushinagar, with 90.73% tap water connectivity, has also seen zero deaths this year, compared to two deaths in 2018. Sant Kabir Nagar reports 89.20% water connectivity, with no deaths in 2024. In Balarampur 93% and Bahraich 92.66% rural households now have access to tap water.

The data reflects a significant improvement in public health, driven by the successful implementation of the 'Har Ghar Nal Se Jal'

scheme under the Jal Jeevan Mission. The expansion of tap water access has played a crucial role in reducing JE and AES cases, showcasing the effectiveness of this public health initiative.

The health department attributes the decline in JE and AES cases to the easy availability of clean water, which has reduced the spread of water-borne infections and helped people stay hydrated, strengthening their immune systems. This has also been crucial in fighting diseases like JE and AES.

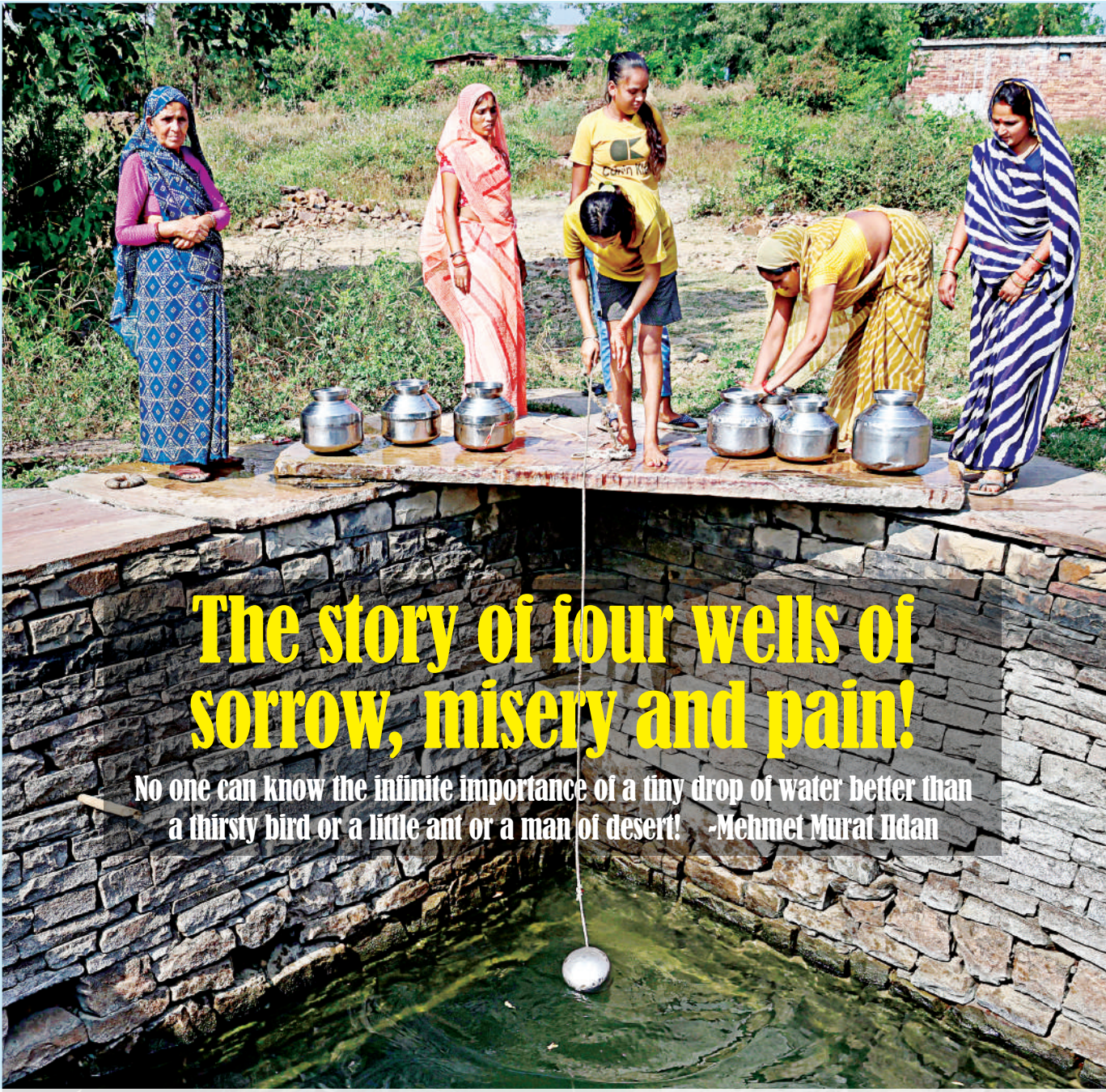
Additional Chief Secretary, Namami Gange and Rural Water Supply Department, Anurag Srivastava said, “The availability of clean water has reduced the spread of diseases.”

He said, “We will soon achieve our goal of providing tap water to 100% households. Clean water is the primary requirement for a healthy life. We are committed to achieving this goal.”

S.No	Name of District	Year	AE		JE	
			Cases	Death	Cases	Death
1	Gorakhpur	2018	451	38	39	03
		2019	316	15	33	04
		2020	235	14	14	02
		2021	251	15	14	00
		2022	97	03	17	00
		2023	112	02	06	00
		2024	24	00	00	00
2	Basti	2018	180	13	23	00
		2019	91	11	14	00
		2020	70	03	06	01
		2021	59	00	06	00
		2022	50	02	07	00
		2023	46	00	03	00
		2024	21	00	00	00
3	Maharajganj	2018	244	18	60	03
		2019	196	15	44	04
		2020	174	12	07	02
		2021	178	09	16	02
		2022	88	04	12	01
		2023	85	02	16	00
		2024	18	00	04	00
4	Bahraich	2018	112	18	21	04
		2019	38	05	06	01
		2020	50	03	04	00
		2021	21	01	04	00
		2022	28	01	07	00
		2023	57	01	04	01
		2024	22	00	02	00
5	Balrampur	2018	34	01	06	00
		2019	21	02	01	00
		2020	18	00	01	00
		2021	15	00	03	00
		2022	26	00	04	00
		2023	17	00	06	01
		2024	01	00	00	00
6	Siddharth Nagar	2018	168	22	20	04
		2019	111	04	06	00
		2020	114	04	07	00
		2021	95	03	04	01
		2022	75	02	07	00
		2023	64	01	05	00
		2024	11	00	00	00
7	Kushi Nagar	2018	302	37	23	02
		2019	287	13	22	00
		2020	298	17	19	00
		2021	299	11	28	01
		2022	146	05	09	00
		2023	140	05	12	01
		2024	34	00	00	00
8	Sant Kabir Nagar	2018	127	09	09	00
		2019	84	01	13	01
		2020	102	02	07	00
		2021	104	02	07	00
		2022	67	00	04	00
		2023	66	00	09	00
		2024	19	00	01	00

AE - Autoimmune Encephalitis
JE- Japanese Encephalitis

Source: Health Department Data



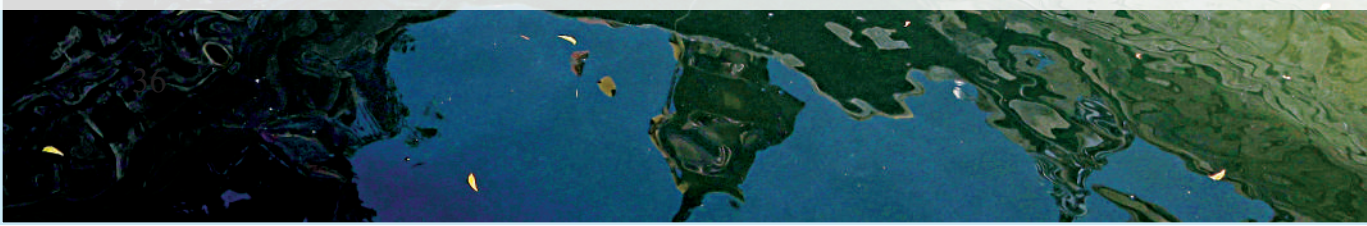
The story of four wells of sorrow, misery and pain!

No one can know the infinite importance of a tiny drop of water better than a thirsty bird or a little ant or a man of desert! -Mehmet Murat Ildan

The people of Balabehat, a small village in the rocky region of Uttar Pradesh's Lalitpur, had been struggling for water for ages.

The village had four wells, but all was not well with those wells!

Though these wells were the only lifeline of the villagers, they were the source of misery and suffering for them as well. The water in the wells was contaminated and unhealthy as they



were levelled with ground, open and with no boundaries to protect the water.

Villagers had no other choice but to drink from these wells. Snakes, fish, and crabs would often be found in this water, putting the villagers' lives at risk and forcing them to fight for survival many times.

A tragic incident occurred in 2010 in Balabehat village due to contaminated water, casting a pall of grief over the entire village. Back then, a cholera outbreak claimed the lives of around 45-50 villagers. Many lost their near and dear ones. The elderly still vividly recall the agony of lives lost due to impure water.

"We often fell ill after drinking water from these polluted water sources. Wells were open and sometimes animals fell into these wells. Drinking that water was like risking our lives. I suffered with an infection in my leg for a long time. Though there were tankers, they too gave us water which was impure and yellowish in colour. Even that came at a price," says Kunjan Singh of Balabehat.

Sumit Katari, a resident of Balabehat village, recounts, "One night, my grandmother went to fetch water from the well around 12 am. She slipped and fell into the well. Luckily, people heard her cries for help and rushed to rescue her using a cot. She suffered a waist injury and remained bedridden until her death. If our village had tap water earlier, my grandmother would still be alive."

This was not all.

Another problem the villagers faced was the drying up of these wells at different times of the year. The villagers, for their convenience, had

named the wells after the name of months (the period when they have water). The first well that have water in the first month of the year was named January and towards the end of the next month it is left with no water. Similarly, another well was named March, yet another was called May, and the last one was called June. By the end of June, all four wells would go dry.

As the temperature rose during summers, the struggle for water became even more intense. Women and children had to walk miles to fetch water from the river. The exhaustion and pain of struggling for water, along with the sorrow of the drying wells could be seen in their tired eyes. The situation was such that people would hesitate to give water even to their animals.

Raja Bhai Tomar, 50, says, "We used to fetch drinking water from these four wells. When the water level in the wells decreased, we would climb down into the well and fill buckets with water using a

pot. The bucket was then pulled out of

the well. Sometimes, we even had to guard the wells during the night to prevent people from using the water for irrigation instead of drinking."

By the time July arrived, more than half of the villagers would migrate due to water scarcity, he says.

Every year, the village of Balabehat would look up at the sky with the hope that the monsoon would arrive on time and fill up their wells. Rainfall was no less than a festival for the villagers, and when it didn't arrive, their hopes would be dashed.

This struggle for water in Balabehat has finally ended. The flowing water from the taps at the doorstep has infused new energy and enthusiasm into the lives of the villagers. The women of the village can now spare time for themselves and their families, and the girls can enjoy their childhood.

Now, with clean drinking water reaching every household through the Jal Jeevan Mission, they can't help but wish this had happened sooner, sparing many precious lives. The mission has brought hope and assurance to the villagers. Taps installed under this scheme ensure pure drinking water.

Earlier, people spent hours searching for water. Now, it's available right at their doorstep.

Pali Bai smiles, saying, "No one needs to beg for water anymore. We'll live with dignity now." Saroja's eyes fill with contentment as she says, "I never thought I'd drink water from a tap in my lifetime; it's nothing short of a miracle."

Hair raising Mission

How JJM has brought back smiles in Lalitpur

For years, women in Kakoriya village, Lalitpur district, Bundelkhand, struggled with a peculiar problem: thinning hair and bald patches on their heads!

"Hairs have, from time immemorial, been a symbol of beauty and femininity, which is why growing bald patches troubled the women of the village immensely."

As the problem spread, with more women reporting the same issue villagers began to look for the reason.

It was then that they realised that their daily long trek to fetch drinking water, balancing heavy pitchers on their heads, had caused thinning hairs and bald patches.

The trauma of losing their crowning glory was palpable. Many poets had glorified hair as the ultimate adornment of a woman, and now, these women were losing theirs due to the scarcity of water!

For years, women in Kakoriya would wake up before dawn, prepare for their daily chore, and set out to fetch water. The scorching sun, the weight of the pitchers, and the endless walking took a toll on their hair. The constant friction of pitchers and tension caused hair loss, leaving behind bald patches and a loss of confidence.

Lakshmi, a resident of Kakoriya village in Lalitpur district, who suffered the pain of baldness, recalls, "There was a time when the entire village was struggling with water crisis. I got married and moved to my in-laws' house, but there was no happiness in life for decades. Whether it was scorching heat or freezing cold, one had to leave the house for water. We even went out at midnight. Every day, we used to trek six kilometers to fetch water," she said.

"We would get blisters on our feet. But the suffering intensified when my hair started thinning, and slowly a bald patch appeared. Putting pitchers on our heads daily had caused baldness. I didn't even want to look into the mirror; the feeling of inferiority engulfed me," she adds.

"For me, the practice of putting a 'pallu' on my head had become a compulsion. People also started distancing themselves from me as if I was suffering from a disease," she says.

"At that time, I kept

cursing myself, wondering what kind of life this was. I wished my family had not married me into this village; today this problem would not have occurred," she says.

"Had this water problem not existed, I wouldn't have become a victim of baldness," she says.

"I had never expected that I would ever be able to see the solution to the water scarcity. But the Jal Jeevan Mission has become like boon as it has brought happiness into our lives as the coming generation will not go bald for now, they won't need to balance pitchers on their heads," she says.

"With water now readily available at my doorstep, I feel empowered, and my confidence has been restored. No one will have to endure the hardships that we once faced," she says.

JJM ends Lalitpur's 'fatal' quest for water

Lalitpur district in the Bundelkhand region had witnessed generations enduring unimaginable hardships due to water scarcity. The consequences of this often resulted in tragic incidents in villages of this district that was plagued by an acute water crisis. Quest for water even claimed lives of women here, says Goribai from Pathari village as she recalled the tragic circumstances in which her sister-in-law Sheelabai also from the same village lost her life.

"Fetching water repeatedly from the well during the scorching summer heat was extremely difficult as we had to walk miles under the blazing sun to reach the well. There we had to wait for our turn to fetch water. So to avoid this village women would try to fetch water at night," Goribai reminisced.

"My sister-in-law too went to fetch water one night but slipped while balancing pitchers on her body on return. She fell down and lay writhing in pain through the night. There was none to hear her cries even as she fell unconscious due to gruelling pain," she recalled.

Sheelabai's nephew, Pappu, remembers the incident well. "It was only in the morning that some people spotted my aunt and informed me. We immediately reached the spot and rushed her to the hospital where doctors said her back was broken and would need costly treatment. We did everything we could for her treatment, even mortgaged ancestral land to ensure treatment after all savings had been spent. But we still couldn't save her."

Pappu said: "Aunt would have been still alive had the tap water been accessible seven or eight years ago. Even the money spent on her treatment and our ancestral land that we had to mortgage would have been with us too."

"The 'Jal Jeevan Mission' has

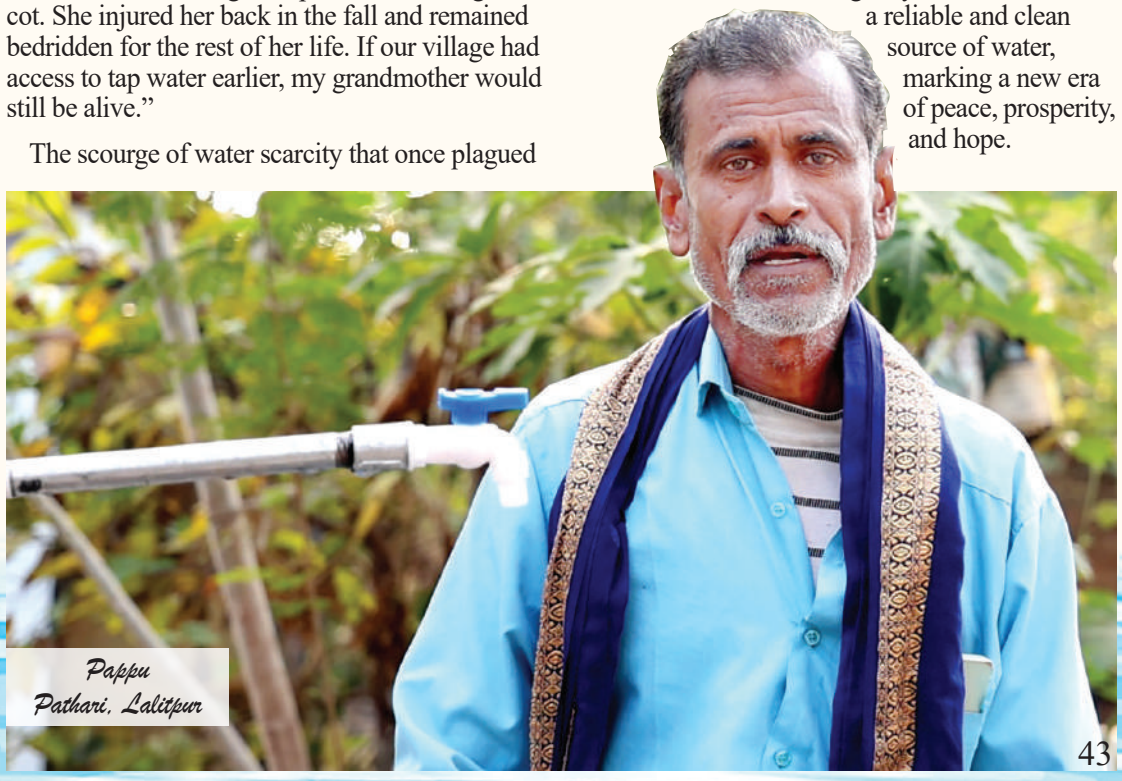
Gori Bai
Pathari, Lalitpur

come as a blessing for us. My aunt is gone but memories of her struggle for water now mean that we all must understand the value of water and conserve it. Our generation had to endure such horrific living conditions due to water scarcity but now with Jal Jeevan Mission, a reality, the future generations won't have to face the hardships that we did. The tap water at each doorstep is indeed a big blessing," he said.

Sumit Katare
Balabehat, Lalitpur

Sumit Katari, a resident of Balabehat village, in Lalitpur recounts, "Once, my grandmother went to fetch water from the well at midnight. She slipped and fell into the well. When she called out for help, people rushed to the well and managed to pull her out using a cot. She injured her back in the fall and remained bedridden for the rest of her life. If our village had access to tap water earlier, my grandmother would still be alive."

The scourge of water scarcity that once plagued the villages, claiming lives and causing countless injuries, is finally a thing of the past. Now, future generations will be spared the agony of searching for water. Today, rural women can rest easy, knowing they have access to a reliable and clean source of water, marking a new era of peace, prosperity, and hope.



Pappu
Pathari, Lalitpur

New Dawn For Labkani

JJM inspires magical makeover in this UP village

In the quaint village of Labkani, nestled in the Deoria district of east Uttar Pradesh (UP), the residents have faced numerous challenges due to the polluted water from their village source. The consequences of consuming this contaminated water have been devastating for many families.

Nagendra Maurya and his wife Sadhana Devi were living a simple life. Their world revolved around their adorable six-month-old daughter, Shristi. Little did they know that their joy would be short-lived.

Tragedy struck when Shristi fell ill after consuming polluted water from their village source. Despite their best efforts, Shristi's condition showed no signs of improving and, in fact, started to worsen. She suffered from recurring fever, convulsions, and frequent vomiting. Nagendra and Sadhana took their ailing daughter, who had turned pale by now, to village-level health centers and then to district-level hospitals, but unfortunately, none of these efforts helped as Shristi's condition didn't improve. After three agonizing years, Shristi's struggle finally ended as she succumbed to the disease at the Gorakhpur Medical College, where she breathed her last. For Nagendra and Sadhana, the loss was devastating, filling their lives with unimaginable gloom.

However, fate had a silver lining in store for the villagers of Labkani. The Jal Jeevan Mission, a government initiative, aimed at providing clean drinking water to every household, finally reached their village. With the mission's implementation, potable water began flowing into all rural households, and Nagendra's family too was a beneficiary of this noble initiative. Though the Mauryas know that their loss can never be undone, they admit that the knowledge of the Jal Jeevan Mission's initiative to ensure a safer future for their

community has been emotionally comforting. They say a sense of gratitude and relief envelops them as they drink clean water, knowing that no family will have to endure the same pain they suffered due to polluted water.

Neha Bharti, also a resident of Labkani village, also shared a heart-wrenching account of her 15-year-old brother, Neeraj. “He suffered from brain fever,” Neha said, her voice trembling with emotion. “After his illness, he was never the same as his health and behavior changed drastically,” she says. Neha’s eyes welled up as she recalled the struggles her brother faced. “The brain fever left him with severe cognitive and physical impairments. He would often get seizures, and his memory and concentration were severely affected,” she says. The Bharti family took Neeraj to various hospitals and consulted several doctors, but his condition remained a challenge. “We tried everything, from medication to therapy, but nothing seemed to work,” Neha said, her voice mirroring her sadness.

The villagers of Labkani believed that the polluted water from their village source was the root cause of Neeraj’s illness. “We had no choice but to drink from the same contaminated water source,” Neha said. “But now, with the Jal Jeevan Mission providing clean drinking water, we hope that no other family will have to suffer like ours,” she added.

Water-at-the-doorstep initiative has brought back smiles.

Vantangiyas get potable water after decades of wait!

Deep within the Kushmi jungle near Gorakhpur, the Vantangiya community (forest dwellers) had lived in isolation for generations. In Tinkonoia No 3, their village, life was a daily struggle. Despite their rich history, they remained excluded from mainstream society and development.

For the Vantangiyas, accessing clean water was a daunting task. The water they found was often contaminated, posing a constant threat to their health.

But in May 2018, their lives took a dramatic turn. Chief Minister Yogi Adityanath declared the Vantangiya villages as revenue villages, finally connecting them to the mainstream.

As part of this initiative, the Jal Jeevan Mission also reached out to the Vantangiyas, bringing with it clean drinking water. Household tap connections were installed, providing potable water right at their doorstep.

Phulwasi Devi of Tinkonia No 3 is overjoyed with gratitude for CM Yogi Adityanath, who brought clean drinking water to her village.

Her words were laced with emotion as she recalled the struggles of the past. "We never even dreamed of having access to clean drinking water," she said. "But now, it's a reality, and we're forever grateful."

Narsingh Nishad, another resident, recalls a neighbour's death due to contaminated water. "But now, I'm hopeful no one will suffer like that again," he says, optimistic about the village's new beginning.

Narsingh Nishad and Phulwasi Devi of Tinkonia

Solar Power boosts 'Har Ghar Jal' mission

UP template a model for all

Water has been the elixir of life (Jal Jeevan) since time immemorial. But, it was only on August 15, 2019 that the adage 'Jal Jeevan' found its 'Mission'.

Hon'ble Prime Minister Shri Narendra Modi had fittingly chosen Independence Day to announce his government's 'commitment' to liberate the poor from water woes through the farsighted Jal Jeevan Mission of which 'Har Ghar Jal' (Water for All) was a crucial subtext. The mission's motto is to provide 55 litres per capita per day (LPCD) drinking water as per Bureau of Indian Standards (BIS) 10500 on a regular basis by 2024.

In Uttar Pradesh, the country's most populous state, with 2.66 crore rural households and barely 1.94% household coverage (till 2019), the challenge was to not just provide potable

Solar Based Project at a Glance

No. of solar based water supply schemes

33,157

No. of villages covered

67,013

No of Households

1,67,49,905

Total population covered under solar based schemes.

13.30 Cr.

No. of FHTC's achieved till date (Solar based)

1,40,61,545

water at the doorsteps of the rural poor but also to make the scheme cost-effective and sustainable in long term.

In 2019, Prime Minister Shri Narendra Modi had also laid the foundation stone of the Piped Water Scheme for rural areas of Bundelkhand region and aptly described it as not just a "pipeline project but a lifeline for the region" making it evident that helping UP get rid of an age-old problem of lack of drinking water at the doorstep of the rural poor, must surely been in his mind when he announced the Jal Jeevan Mission.

Besides Bundelkhand, eastern Uttar Pradesh, that witnessed child deaths with distressing regularity each year, due to water-borne diseases, including Japanese Encephalitis and Acute Encephalitis Syndrome (AES), was also a focus area.

The problem was, in the past, many water schemes had flattered only to deceive, faltering after an initial start. In most cases, this was because the conventional electric power-based schemes required huge initial capital cost in setting up the electrical infrastructure for ensuring electricity connections for inordinately large number of scattered water supply schemes.

Besides huge recurrent expenditure on electricity bills, uncertainty in electricity supply persisted due to increased cost of operation & maintenance of supply schemes. This led to the Uttar Pradesh State Water and Sanitation Mission (SWSM) opting to think an 'out of the

box' solution.

The solar shift

A shift was clearly needed from the conventional approach and after much brainstorming a solution emerged. Transitioning from conventional power sources to solar power to address the issue of elevated electricity demand and consistent supply for 'Water-For-All' schemes was needed and this was what was decided.

The decision gave birth to as many as 33157 solar-power-fuelled water supply projects -- currently generating a hugely impressive 900 MW power – and which were gradually launched in different parts of Uttar Pradesh, covering 67013 villages, a whopping 2.07 Crore households and 13.30 Crore population.

Envisaged as a game changer due to their high-reach and penetration capability in remote areas, the manifold benefits of these solar-power driven water supply schemes manifested themselves straightaway.

Lower O&M Cost and Carbon Footprints

Besides lowering operation and maintenance costs by cutting down or eliminating reliance on high-cost fuel or electricity supply and thus contributing to long term savings, solar power-driven energy systems were environment friendly too – a huge plus.

Their minimal to no environmental impact by reducing carbon footprints compared to conventional power systems markedly elevated their utility quotient, making them more reliable, scalable and thus more stable.

The solar-based water supply projects thrive in sunny conditions, making them ideal for Uttar Pradesh which receives adequate sunlight for 320 of the total 365 days in a year, thus making them much less vulnerable to power outages in the country's most populous state.

Ensuring continuous water supply, empowering communities by providing them the control over their water resources and fostering sustainable development provided an added boost.

Further, solar power-driven schemes have led to reduced reliance on fossil fuels, thus contributing in a big way towards mitigating the climate change challenges, aligning with global efforts to address environmental challenges and reducing carbon footprints.

Expenditure on Operation & Maintenance per Household

S.No	Types of Schemes	Total No.Of Schemes	No. of Villages	No. of Households	Estimated annual O s M cost Per Households (in Rs)
01	Solar based schemes	33,157	67,013	1,67,49,905	1220
02	Electricity based schemes	10,985	29,908	98,33,346	2531

The impact of the 33157 solar-powered water supply schemes under UP's Jal Jeevan Mission (JJM) has thus meant significant saving of 900 MW power that would have otherwise been drawn from the National Power Grid.

These 33157 solar-powered schemes have been designed for 30 years with entire capital expenditure on solar plants at Rs 7812 Crore. Had these schemes been designed on conventional power sources, the one-time connection cost of all schemes alone would have cost nearly Rs 2487 Cr. The power cost would have further led to an annual expense of Rs 1115 Cr.

So, assuming 60-month breakeven period of these solar-based power schemes would mean a savings of Rs 28112 Crore (sans price escalation in tariff) over the entire 30-year duration. And, if one were to make the same calculation based on 2% price escalation year on year (YOY), the same would mean savings of Rs 37395 crore.

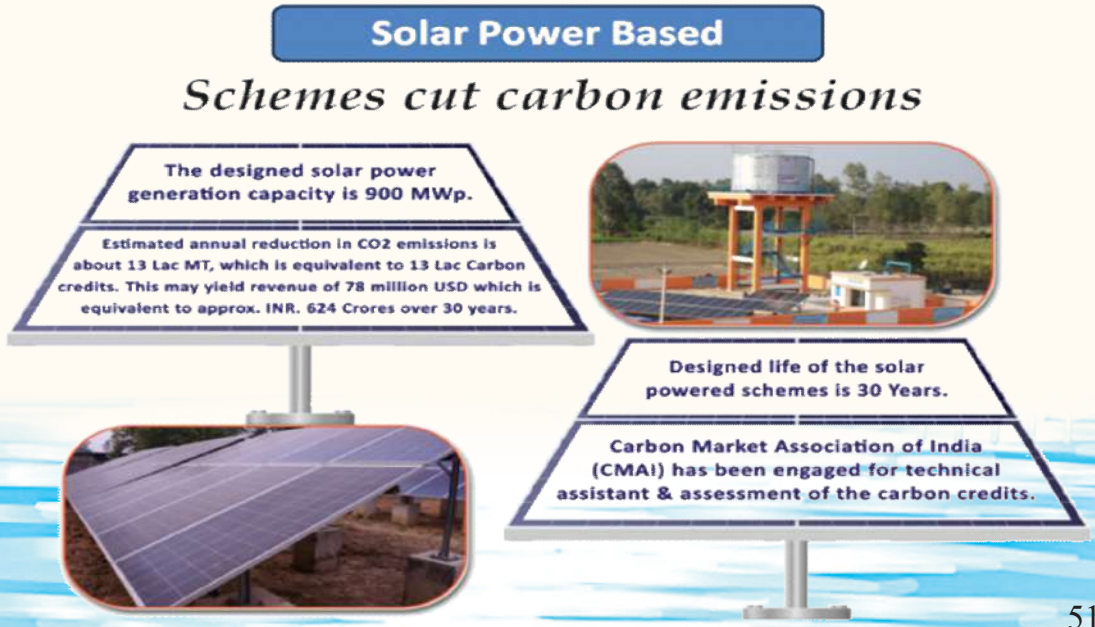
Solar Schemes, Carbon Credits And 'Net Zero' Emission Goal

What's more, these solar-based power schemes would mean an annual reduction of 13 lakh metric tonne (MT) CO2 emission, which is equivalent to 13 lakh carbon credits and contribute to the nation's 'net zero emissions by 2070' goal.

Assuming 2 US dollars (USD) per carbon credit would mean generating revenue of 78 million USD, equivalent to approximately Rs 624 Cr over a 30-year period.

Additionally, the solar-powered schemes are self-sufficient schemes and don't require no-objection-certificates or NOCs from statutory authorities. Additional land requirement needs too are done away with since the solar plants are installed within the premises of the water works compounds.

Besides saving huge expenditure on creating



a transmission and distribution power network, solar powered schemes are also greatly helpful given the depleting coal reserves, limitations of hydroelectric power and nuclear power.

Resilient and Self Sustaining

The solar-power-led innovation has also been found to be quite sustainable in emergency situations. The structures are earthquake-proof and steady enough to bear the impact of high-wind cyclones.

These adverse seismic and climatic conditions have not disrupted the performance of innovation. System is rather more useful in UP during the months when gusty winds frequently damage electrical lines. What's more, if site selection is proper, there is no risk to solar-based systems during floods too.

Stakeholders/ Beneficiaries of the Scheme

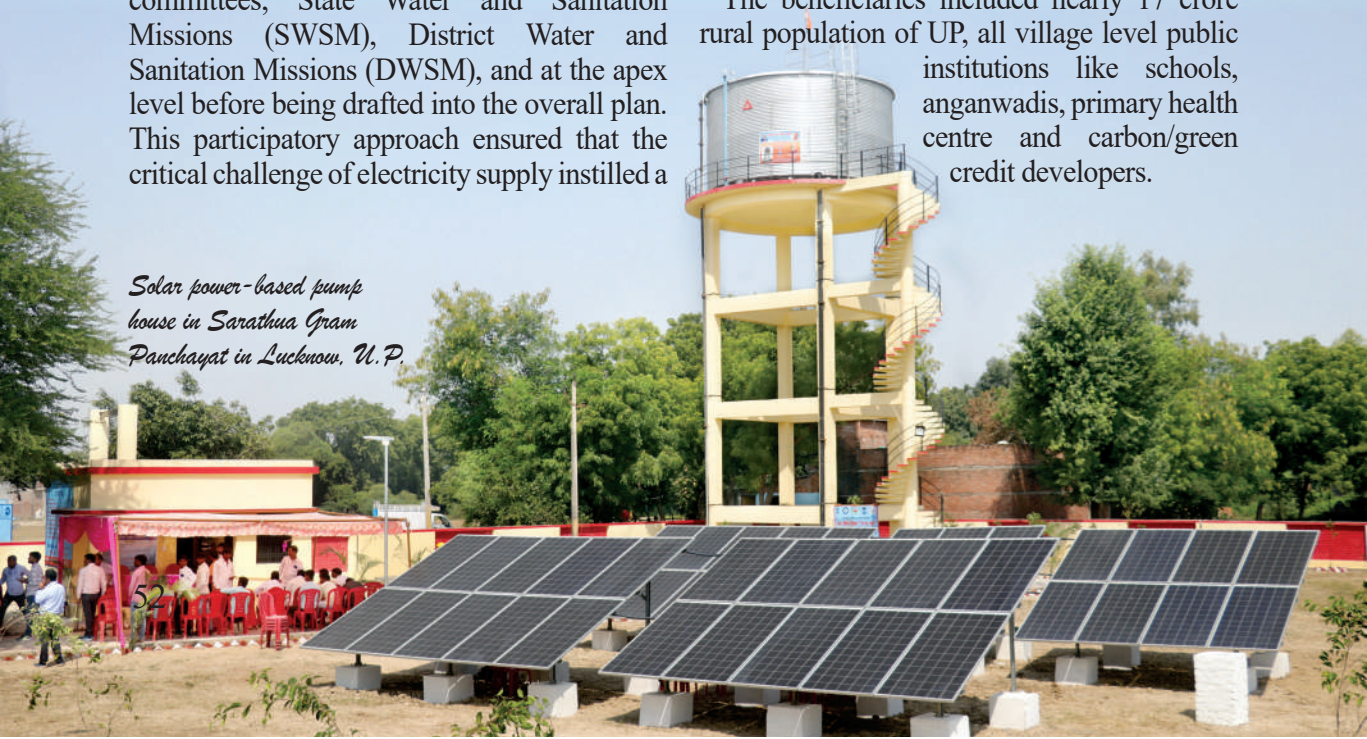
The implementation of solar-based water supply schemes was initially discussed at various levels, including village water committees, State Water and Sanitation Missions (SWSM), District Water and Sanitation Missions (DWSM), and at the apex level before being drafted into the overall plan. This participatory approach ensured that the critical challenge of electricity supply instilled a strong commitment among all the stakeholders to adopt solar solutions.

The SWSM – Uttar Pradesh planned the project in phases, dividing the entire project area into clusters and districts. Reputed execution agencies and vendors were shortlisted and engaged through a transparent tendering system, ensuring competitive processes. Contracts were awarded with a 10-year operation and maintenance (O&M) period, ensuring the long-term sustainability of the schemes.

The stakeholders of the solar power-based schemes are Government of India through the National Jal Jeevan Mission, state government through SWSM, Uttar Pradesh.

The executing agency is Uttar Pradesh Jal Nigam (Rural), while there are contractors and firms executing the works of JJM, third party inspection agencies (TPIA), project management consultants (PMC) and the gram panchayats of UP – all of whom are critical components of the scheme that is aimed at ensuring accessibility of water to all and at their doorstep.

The beneficiaries included nearly 17 crore rural population of UP, all village level public institutions like schools, anganwadis, primary health centre and carbon/green credit developers.



Solar power-based pump house in Sarathua Gram Panchayat in Lucknow, U.P.

The stakeholders guided by the immense benefit of solar power-driven schemes -- uninterrupted drinking water supply, reduction in O&M cost & carbon footprints and improved environmental sustainability – have been quick to adopt solar energy in running the drinking water schemes in rural areas.

Sharing Best Practices for Others to Emulate

The use of solar energy in water supply schemes has significantly strengthened the resilience of rural communities in adapting to climate change impacts and reducing dependence on non-renewable energy sources.

Post implementation of solar-based water schemes several best practices that could also be replicated in other areas were identified. One of the biggest takeaways of the transition from non-renewable energy sources to solar has been that it reduces/eliminates the burden of electricity bills on Gram Panchayats.

This was among the key factors that contributed to failure of previous schemes as gram panchayats were unable to meet the high cost of electricity required to run those schemes.

The transition from non-renewable energy sources to solar power, has thus ushered in several other benefits. For instance, solar-based water supply schemes operate effectively in remote areas where traditional power/non-renewable energy sources have proved to be impractical & unavailable, providing reliable access to drinking water and ensuring a continuous supply even during extreme weather conditions – a key determinant ensuring full benefits of JJM to rural population. That is why this has been introduced in ground water based single or multi village schemes where requirements of energy could be met without any additional requirement of land.

These schemes have thus reduced operational and maintenance costs by eliminating the need for high-cost fuel or electricity based on non-renewable energy sources, leading to long-term savings, and making them financially sustainable.

By selling carbon credits in the international market, the state stands to generate additional revenue, and the model could be replicated by other states. The entire effort could help the country achieve 'carbon neutral' status ahead of the set timeline. The Namami Gange and Rural Water Supply Department in Uttar

Solar based Pump house in Varmi Gram Panchayat of Sitapur, Uttar Pradesh

Pradesh model has already replicated the model in many sewerage treatment plants where it has made use of the available land and building to generate solar power and cut the operation cost of sewerage treatment plant (STP).

Some of the STPs are fully designed on total solar power under the Namami Gange Namami Gange and Rural Water Supply Department Program. The solar-power water supply model can be used in all public and private buildings on the roofs and connected to the grid, producing green energy. Additionally, the model's environment friendly nature is a huge advantage in helping departments generate funds to run the schemes by selling the carbon credits in the international market.

Demographic and Geographic Reach

Uttar Pradesh, with its large population and diverse geographic landscape, faces numerous challenges related to water supply especially in remote rural areas. Solar-powered water supply schemes have proven especially beneficial in remote and off-grid areas where traditional electricity infrastructure is either unavailable or unreliable.

The large-scale use of solar energy in Uttar Pradesh's water supply infrastructure has been transformative. The state's mission encompasses 44,142 water supply schemes spread across 75 districts, 826 blocks, 58,287 panchayats, and 96,921 villages, providing them with access to clean and sustainable energy for drinking water supply. It has also generated substantial scope of employment, benefitting rural communities and those located in remote areas.

It also promotes adaptation of solar power systems for domestic applications, especially in remote areas where the feasibility of a power grid is not practical.

Capacity building of stakeholders/beneficiaries

To date, over 12.36 lakh personnel have been trained in various aspects of the operation and maintenance of solar water systems. This includes training programs for plumbers, pump operators, and women involved in water quality testing. These initiatives have not only created jobs but also empowered local communities to take ownership of the water supply systems, ensuring their long-term sustainability.

Stakeholders have also been sensitized about the importance of reduction in carbon footprint, improvement in health, job creation, enhanced resilience through different Information, Education and Communications activities such as wall writings, hoardings, LED vans, nukkad natak or roadside plays, radio jingles, television broadcasts, in-media promotions in movie halls, road shows, village fairs, rallies by students. Workshops and Webinars have been organised for beneficiaries, villagers level officials and Gram Panchayat representatives in remote or inaccessible areas. Nal Jal Mitra (Tap water friends) are also being trained for maintenance of solar systems.

Efforts have also been initiated for capacity building of the stakeholders and beneficiaries so that they could benefit through the introduction of solar power innovation.

Public Delivery System becomes more responsive

The solar power-based scheme has made the public delivery system more responsive and efficient as it has improved reliability of providing regular water supply. This has helped avoid energy losses in the transmission and distribution power grids since the solar power system is installed locally in the same premises of water works. Environmental Sustainability is achieved through green power generation by solar energy.

One of the most innovative aspects of Uttar Pradesh's solar-powered water supply schemes is the integration of Supervisory Control and Data Acquisition (SCADA) systems. Real-time Monitoring through

the SCADA and automation via wireless communication is also being done. Automated monitoring dashboards provide insights into the performance of the water supply schemes, allowing for prompt interventions in the event of any discrepancies in water supply or system functionality. The centralized SCADA system not only ensures optimal performance but also minimizes resource wastage and downtime. By automating key processes, the system reduces the need for manual oversight, thereby lowering operational costs and ensuring more efficient use of resources.

Decentralised power generation in the waterworks, resilience to power outages to ensure uninterrupted water supply, achieving India's Sustainable Development Goals (SDGs), generating 'Climate Finance' in the form of carbon/green credit are some of the other takeaways of the scheme.

Third Party evaluation of solar schemes

Provisions have been made for third Party evaluation of the reduction in carbon footprints post solar power-based projects wherein Carbon Market Association of India (CMAI) has been engaged for technical assistance. The CMAI will assess the projects regarding generation of green energy, process of getting the carbon credits and then utilization of the Carbon Credit Certificates in the international market. This would play a part in helping India achieve carbon neutral status.

Toolkit provision

A Toolkit has been designed to ensure easy replication of solar innovation. This includes case studies with detailed assessments of the specific situation in the schemes. They also include the concepts of project development survey, data collection, analysis and gap mitigation, design and graphical presentations of the schemes.

There are many success stories as of the 33157 schemes, 22425 have been successfully completed with solar-based power and are running seamlessly and efficiently. There are capacity building modules, Financial Models, Best practices manual, Contract document and details about how to do trading of Carbon credits.

Knowledge sharing

Steps have been taken by the implementing unit for dissemination of its best practices

Officials taking information about solar panel during inspection in Bhawa Khera Gram Panchayat of Lucknow

Pump house operated by solar panels in Udaipur Gram Panchayat of Lucknow. Women in the areas express their happiness as now 'no power' does not mean 'no water' for them.

to the district/state/Union government. The dissemination includes online portals to provide detailed physical and financial progress in specific format, that could be referred to for understanding the overall scenario of the project components and its related progress.

A comprehensive documentation of the best practices has also been done that includes minute things that were observed during the implementation of the project from planning, execution to project maintenance.

Knowledge sharing workshops and seminars have been conducted to share experiences, insights and best practices with all stakeholders.

Collaborations with renowned government technical Institutions have been done and their feedback has been incorporated.

Webinars are conducted through video conferencing and web meetings with all the stakeholders on a regular basis.

Compilation and submission of regular progress reports and technical resolutions are uploaded in the portal and made available to all the stakeholders. Media engagement is done by sharing success stories and raising awareness about the positive impacts of the schemes/ project. Development of Guidelines and Manuals for all the schemes too has been done.

Community Participation in Solar Power-Based Schemes

The Water Supply Schemes were planned by the Village Water Committee and the solar system was discussed with the committee members before their inclusion. A total of around 12.36 lakh local women for water quality testing, plumbers, fitters and mechanics were specifically trained and involved for the maintenance and operation of the solar system and briefed about the importance of sustaining those water supply schemes.

Additionally, implementation support agencies and IEC agencies have also been roped in to motivate the community about the schemes and the role they need to play in ensuring their sustenance.

Grievance Redressal, Feedback Mechanism

Grievance Redressal Cells are active in

each water supply scheme. Citizens can report grievances through designated contact points, toll-free helpline contact number (18001212164), online portals & mobile app (under development).

Grievances Redressal Officers at respective water supply schemes are to address grievances and to initiate redress process within the response timeline. Public awareness campaigns are also conducted from time to time about the grievance redressal and feedback mechanisms through different IEC activities. Regular monitoring and evaluation system to assess the effectiveness of the grievance resolution mechanisms & identify areas of improvement has been established.

Ensuring Long Term Sustainability

The solar power-based water schemes are designed for around 30 years and hence sustainability is assured. Ideally suited to ensure uninterrupted power supply to drinking water schemes while guaranteeing sustainability, the sustainability aspect is embedded in the system since contractors who undertake the projects have also been tasked with maintaining, operating and running the schemes for 10 years.

Challenges and Future Outlook

While the adoption of solar-powered water supply schemes has brought numerous benefits, several challenges remain. One of the primary challenges is ensuring consistent solar power generation during adverse weather conditions such as winter and rainy days.

Additionally, the maintenance of solar infrastructure particularly in remote areas, requires careful planning and oversight to prevent system failures.

Despite these challenges, Uttar Pradesh's innovative approach to integrating solar energy into water supply systems serves as a replicable model for other states and countries facing similar difficulties.

To mitigate challenges during adverse weather conditions, portable diesel generators (DG) have been installed to ensure an uninterrupted water supply. Moreover, the water distribution system for all the solar-powered water supply schemes has been designed based on gravity. As a result, electricity is only needed to fill the elevated storage reservoirs (ESRs). During the winter season, the ESRs can be filled during sunlight hours. This ensures that the system can continue operating even in adverse weather conditions.

To further enhance security, solar panels have been installed within a gated, secured boundary campus, and 24-hour security personnel have been engaged to safeguard the infrastructure from damage or theft. Additionally, to prevent theft and vandalism, awareness programs have been conducted within local communities. The Village Water and Sanitation Committees (VWSC) have also been empowered to support, protect, and sustain these schemes, fostering community ownership.

Conclusion

This ambitious project stands as a model for other states and countries facing similar challenges in rural water supply and renewable energy adoption. By showcasing how solar energy can address pressing infrastructure challenges while reducing costs

and environmental impact, the JJM in Uttar Pradesh has set a new standard for sustainable rural development. The lessons learned from this initiative can provide a blueprint for future projects aiming to solve the dual challenges of energy and water access.

The future of solar-based drinking water schemes in Uttar Pradesh looks promising. As technology advances and costs continue to decrease, the feasibility of solar-powered water supply systems will increase. The state's commitment to renewable energy, combined with its urgent need for clean water, positions it well for further investments in this area.

Moreover, as climate change impacts water resources, adopting sustainable solutions like solar energy becomes even more critical. By focusing on innovation, community participation, and strong partnerships, Uttar Pradesh can make significant strides toward ensuring that all its residents have access to clean and safe drinking water.

In conclusion, the Jal Jeevan Mission – Uttar Pradesh has successfully demonstrated the transformative power of renewable energy in addressing rural water supply challenges. Its impacts on reliable water access, operational cost reduction, carbon footprint minimization, and community empowerment highlight the project's far-reaching benefits. As India continues to expand its use of solar energy, the success of this project underscores the crucial role that renewable energy solutions can play in achieving SDG targets and contributing to global climate action. The initiative serves as an exemplary model for sustainable development, setting the stage for future innovations in water supply and energy systems.


जल जीवन मिशन
पम्प हाउस
जल जीवन का है कुल आधार
इसे बचाने का करो विचार।

Quenching the Thirst

State Water and Sanitation Mission
Namami Gange & Rural Water Supply Department

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