

TIMES EVOKE

WATER FOR THOUGHT

The world faces a water crisis today. While 70% of Earth is covered by water, only 2.5% of this is fresh, the rest being saline. Of this freshwater, only 1% is easily accessible — in effect, just 0.007% of Earth's water is available for use by nearly eight billion people. Yet, despite this constriction, water use has grown globally at over twice the rate of population increase in the last century. Its unsustainable usage now reflects in more than one billion people lacking clean drinking water and over two billion facing severe water scarcity — by 2030, half the world's population could face major water shortfalls. This crisis is compounded by climate change altering rainfall patterns, hampering Earth's natural ability to recharge itself. The deepening lack of water affects more than humanity — freshwater animals have declined by over two-thirds since 1970, with those remaining facing extinction as their streams and ponds vanish.

Multiple causes underlie this crisis — over 80% of Earth's wetlands, crucial for the rejuvenation of water systems between land, sea and sky, have been destroyed since the industrial age began. Large dams and levees have altered the natural sways and bends of rivers and the rich universe of life, from birds to fish, plants to microbes, these supported. Wasteful industrial patterns have parched our planet — a pair of shoes involves 8,500 litres of water to make while a cotton shirt requires 2,600 litres. Growing one kilogram of rice demands 2,500 litres — one latte coffee involves 200 litres.

However, as Times Evoke's global experts emphasise, multiple solutions are possible. Changes in crop patterns — 72% of all water withdrawals are for agriculture — would have an enormous impact while rejuvenating wetlands, instead of building over these, would recharge vital groundwater. Reviving ancient water harvesting methods would store precious rain to tide over arid phases while changes in our own behaviour — to responsible consumption, recycling, reuse and limiting wastage — would return water from industrial systems to vibrant life. Join Times Evoke on a journey of valuing the elixir of life, which composes 60% of our own human forms, and for which there is simply no substitute.

'We've broken the water cycle — we must work with nature to ensure water security'

Sandra Postel is the 2021 Stockholm Water Prize Laureate. Director of the Global Water Policy Project, Postel spoke to Srijana Mitra Das at Times Evoke on the freshwater challenges the world faces, solutions to mitigate these — and the enormity of water in maintaining all life:

What is the core of your work on water?

■ Much of my research has focused on how we can have a prosperous society and, at the same time, repair and replenish the water cycle. For a couple of centuries, we've disrupted the water cycle for human benefits, mostly by substituting engineering for ecosystem-based solutions — this includes dams to store water, diversions to move it around and levees to control floods. This infrastructure brought many benefits but it has also broken the water cycle — the



natural storage and movement of water between land, air and sea that sustains life and is critical to human prosperity.

By working with nature's services, rather than against these, we can achieve water security more cost-effectively and with less environmental damage. Combined with conservation and more efficient water use, nature-based solutions can help us solve multiple problems simultaneously. Protecting wetlands, for example, can



and fish that were around 50 years ago, there are only 17 now. That is a dramatic loss of life in a geologic twinkling of an eye.

Water sustains a great deal — why do you not use the term 'water resources'?

■ I think language is very important. Nearly 30 years ago, I made a conscious decision not to use the phrase 'water resources' because that implies the primary purpose of water is to serve the human economy — water's most fundamental purpose, however, is to sustain life on the planet. In contrast to oil or coal, freshwater is much more than an input to our economy. It is the source of life itself.

Why do you say we will experience climate change largely through water?

■ The basic driver of climate change is the heating of the atmosphere from greenhouse gas emissions. As the atmosphere warms, it expands, which means

and glacial melt also threatens the integrity of dams while more intense wildfires in Australia, the western United States, etc., threatens watersheds and drinking water. The intensity of storms is expected to increase as well. In 2017, the US experienced climate-related disaster costs of over \$300 billion, mostly from hurricanes and wildfires. That high cost, stemming from water, is expected to become the norm this century.

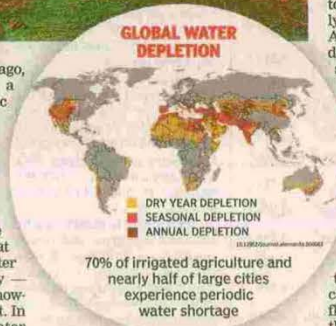
What are some effective mitigation strategies?

■ We need to work together to repair the water cycle and replenish reserves. Groundwater has been depleted in some of the world's most important irrigated farmland areas — including in China, India, Pakistan and the US, which are the four biggest irrigators. Groundwater is a critical reserve during droughts. We must replenish this by reducing pumping to levels that match recharge and actively recharging the aquifers we've depleted. Another important strategy to safeguard drinking water is to protect our watersheds because healthy forests help cleanse water and mitigate wildfires.

How would you describe India's water situation?

■ India is highly prone to both droughts and floods, so building resilience, especially in the face of climate change, is very important. Smart engineering will be important — and so will working with nature's services. For example, instead of relying only on big levees to control floods, India could strategically re-connect rivers to their natural floodplains. As floods get more intense, this will help reduce risks and recharge groundwater. These solutions are being tried in the US Mississippi River Basin and in Europe's Danube River Basin.

Enhancing aquifer recharge and reducing withdrawals are crucial for India. And all the major irrigators in the world, India included, have got to irrigate crops more efficiently to get more crop per drop.



it can hold more moisture. So, dry areas will get drier and wet areas will get wetter. Hence, we'll experience more intense floods, droughts and rainfall events. Higher temperatures are also causing glaciers to melt — that will impact India which depends on rivers replenished by glacial meltwater. More intense flooding

CONSUMING WATER RESPONSIBLY

- Every aspect of our daily lives has water embedded in it — it takes 2,700 litres of water to grow the cotton for one T-shirt. One phone needs 1,000 litres of water to produce it. Responsible consumption is a huge water-saver
- 1 cup of coffee needs 130 litres of water to grow the coffee beans — a half-kg loaf of bread requires 730 litres for its wheat while 1 kg of cheese requires 3,000 litres
- 1 glass of orange juice needs 170 litres of water to make while 1 kg apples needs 822 litres
- 1 pizza requires 1,239 litres of water — 1 kg chocolate demands 17,196 litres of water to be produced
- To produce 1kg meat needs 5,000 to 20,000 litres of water. One hamburger alone demands 2,400 litres — a plant-based diet is water-friendlier with 1 kg cabbage needing 237 litres and 1 kg tomato requiring 214 litres

Research: WWF, The Guardian, WaterCalculator.org

Have you seen people effectively reviving water in their landscapes?

■ There are many great examples of that. In my book, 'Replenish', I write about farmers enabling streams to flow again. I write about irrigators working with conservationists to restore a river by switching the crops they grow. One of the most inspiring stories I've witnessed was the cooperation between Mexico and the US to return enough water to the Colorado River Delta to enable a portion of the river to reach the sea again — due to dams, diversions and the overallocation of the river's water, this hadn't happened for years. This experiment in 2014 showed me what we can do if we put our minds to it and work together.

IT'S THEIR WATER TOO

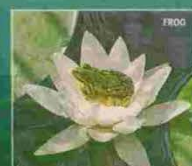


Over 20% of the 10,000 known freshwater fish species have become extinct or endangered. Large freshwater fish and mammals like manatees have declined globally by 90% since 1970 — twice as much as the vertebrate species lost on land or the seas. Sturgeons existed since the age of the dinosaurs but 23 of the 27 species face extinction now, due to dams blocking their migration routes along the Yangtze, Danube, Rhine and other rivers



freshwater across the Amazon and Orinoco river basins in Brazil, Colombia, Ecuador, etc., is now vulnerable with polluted rivers and dams fragmenting its habitat

In the Caribbean and Latin America, water-dependent amphibians like frogs have seen population drops of 83% recently — the Amazon river dolphin, living only in



In addition to freshwater-based species, terrestrial species are also experiencing water stress. In 2019, over 105 African elephants lost their lives in Zimbabwean conservation zones, with water drying up due to extensive drought conditions. Elephants searching desperately for water fell into wells or entered villages, facing human-animal conflict



Research: National Geographic, AP, BBC

Times of India 17-April-2021

'Changing India's agricultural patterns can solve water challenges'

Upmanu Lall teaches earth and environmental engineering at Columbia University. Sharing his insights with *Times Evoke*, he discusses powerful mitigations for India's water crisis:

Photos: iStock

My research focuses primarily on understanding global water sustainability. That covers infrastructure and access on the one side, and the role of climate in determining floods and droughts on the other. Studies show we are already in a water crisis — we simply haven't elevated this to the status of climate change. In the early 2000s, I began researching hotspots of water crises globally — India jumped to the top of the list very quickly.

Most people talk of shortages of water when they refer to a water crisis — in India, it's more. There is a serious problem with the overuse of water in agriculture, the unchecked pollution of water resources and flooding which costs almost a billion dollars a year in damages. No other country faces water challenges like these.

Of course, other nations have problems too. In America, Europe and Japan, for instance, most water infrastructure, including dams and urban water infrastructure, was built 50 to 100 years ago. It's beyond its design life now — the US needs two to three trillion dollars just to bring things back to grade. Rural areas and smaller cities in the US and Europe already have endemic failures of water systems.

But the world has enough water for everyone to use. Yet, we're in this

AT THE ROOT

situation, mostly because those in decision-making roles generally think only of drinking water supplies. But the majority of water use on the planet — consumptive water use, which is removed from the system and is no longer available until it rains again — is in agriculture. Globally, around 70% of freshwater is used for agriculture — in India, it's over 90%.

Such water use efficiency is very low in India because we practice flood irrigation for crops — we mostly have an arid to semi-arid climate. So, if a farmer in Punjab maintains 2-3 inches of water in the fields all the time for growing paddy, that water is continuously evaporating. The water application is as much as 2.2 metres during the season per unit area — but the plant itself needs only 60 to 70 cms. Most of that water just evaporates.

This loss affects us all. Most Indian cities use groundwater. With heavy agricultural use, as this drops in level, it becomes more expensive to pump. Farmers get free electricity for



A DRYING FIELD: Growing paddy is water-intensive. Doing so in dryer states is denuding India's groundwater

pumping but cities don't. So, they pump water only twice a day to save money. The middle class manages because it's built its own water storage systems. But the poor suffer from the lack of water.

This situation arises from the excessive use of water in agriculture. Therefore, we've examined solutions to help farmers improve their water use efficiency. In Gujarat, Punjab and Andhra Pradesh, we did pilot projects with local universities involving over 12,000 farmers for five years. We found technologies which helped even highly water consuming crops achieve significant reductions in water use without losing productivity — you could save 30% water without much expenditure. But other issues impacted their widespread adoption — in Punjab, for example, over 60% farmers initially chose a moisture sensor technology which indicates when there's a water shortage in the soil, so flood irrigation can be used just then. But this dropped to 20% farmers eventually — the reason was this required extra labour as they had to go physically to the fields to check the moisture status. Since electricity also came on randomly, farmers preferred to simply leave their pumps on. This means they were perpetually flooding their fields, whenever electricity was supplied.

Significantly, we found around two-thirds of farmers were interested in paying for regular electricity. The richer farmers weren't — the poorer farmers were. That seemed paradoxical but this was because the richer farmers got reliable electricity through connections and money. Poorer farmers were spending more on diesel and therefore, they were willing to pay for a reliable electricity supply — which would help save a large amount of water.

We also researched crop choices — in India, government procurement of staples happens only in some states like Punjab, Haryana, Telangana, etc. Surprisingly, some of the most arid states contribute to rice-wheat procurement — we studied if water could be saved by growing different crops there. We found that if you continued irrigation at the same level, farm incomes would



WHY IT'S FLOWING AWAY: Both free and irregular electricity supply has caused increased water pumping in Indian agriculture

actually increase by 30% on shifting certain crops around — rice could shift to Bihar, Odisha, Bengal, some Himalayan areas and the Ghats while Punjab could return to growing corn, lentils and winter wheat.

Amazingly, the most economically suitable and sustainable cropping pattern from a water point of view turned out to be similar to the crop patterns that existed across India before the Green Revolution. By simply changing the crop system, the water situation in the entire country could be significantly improved. This wouldn't need much technology — and it would yield a rich harvest of water for all.

Times of India 17-April-2021

'Ancient India harvested every drop of rain. We must restore this science'

Sunita Narain is director general of the Centre for Science and Environment (CSE). Sharing her perspective with *Times Evoke*, she discusses ancient India's incredible water harvesting systems — and why we must revive these:

Photos courtesy: 'Dying Wisdom', CSE

The water situation in India is a complex one — we have apparent scarcity. There are fears of running out of water and having wars over it — these are terrifying scenarios. But the fact also is, water is the world's most replenishable resource — we don't need to have scarcity. There's enough for everyone. If there is a looming water scarcity, it's because we are mismanaging a precious and life-saving resource. We need to focus on management practices we must fix.

CSE began researching India's water conservation science in the early 1990s. A team of us were driving through the Rajasthan desert where we found these upside-down 'flying saucers' — it turned out to be an extremely clever water harvesting structure with an artificial catchment. Whatever rain fell was harvested and stored in an underground well. The science was incredible — one hectare of land could give



you a million litres of water, even in Jaisalmer, which had the driest conditions of the world. The city itself had flourished despite receiving just 50 millimetres of rain in a year; thanks to harvesting every drop.

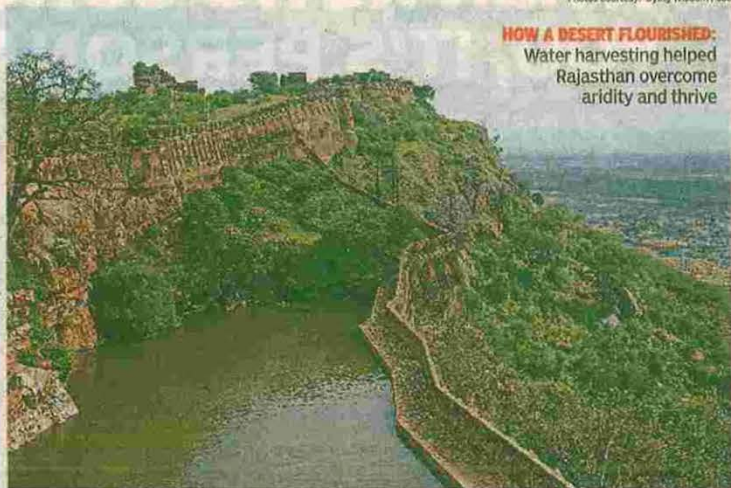
Our book 'Dying Wisdom' then documented every region of India, pulling

CATCHING RAINDROPS

out the knowledge stored in the British Gazetteers of how each state had grown its own unique system of water harvesting, based on catching rain and community management. Ladakh had zings, the Himalayan region had guls, Bihar had its ahar payne, Meghalaya had bamboo drip irrigation, Kerala had water harvesting structures actually built into the Ghats while Tamil Nadu had cascade tanks. Every region valued its rain endowment.

This system fell apart when the British came to India. They didn't understand this scientific diversity or community-based water management. They replaced this with canals and diversion systems — water was taken out of the hands of communities and given to bureaucracies to manage. Independent India repeated this and these ancient wisdoms declined. By the time we wrote our book, they seemed lost. But a turning point came after this research and today, with the MGNREGA program, many villages are rejuvenating water systems. Restoring this science widely would be a huge help because these systems knew how to live with nature's excesses and its scarcities. This science was a gentler way of coexisting with nature, as compared to the very masculine way of colonialism, which wanted to conquer nature.

Consider Bihar, an endemically flood-prone region. Bihar had developed an



HOW A DESERT FLOURISHED:
Water harvesting helped Rajasthan overcome aridity and thrive

amazing system of floodwater management — a British engineer called William Willcocks sent there during the Bengal Famine wrote how the British could do nothing better than to recreate this system. His advice was ignored but he was right. He found 'kaani nadis', channels to divert floodwater, spreading this widely across the land. During floods, people depended on this water for food — these lakes and ponds produced makhana or lotus seeds, fish and rice varieties growing above the water.

But, over time, these channels were seen to be a waste. They were given away for revenue first and then built over. This happened because our mindset changed to thinking, 'We can tame the river'. The traditional thought was, we'd live with nature and even optimise its excesses like floods. The modern way was, no, we'd build embankments. We'd bind the river down. Today, those embankments have constricted silt — so, the riverbed is often higher than the surrounding areas, making floods even more intense.



THE ORIGINAL FLYING SAUCER: The Kundi system in Rajasthan worked by paving the ground with lime, making it drain to the middle. When it rained, all the water got channeled into a well, kept covered to keep the water clean

If we learn to respect nature, we can live with it. But we are working against nature today. I am not against big dams — but their value is smaller than the millions of water harvesting structures we could build everywhere. Once, Jodhpur had the extraordinary Padamsar and Ranisar lakes — the latter was inside the Jodhpur fort. The hills behind the fort were the catchment which first brought water to Ranisar. This would get filled and then, the overflow would go to Padamsar, the lake of the people. The overflow of that would go to all the stepwells which were the groundwater recharge points across the city of Jodhpur. Now, we've destroyed that catchment of Jodhpur for mining and quarrying. So, the water harvesting potential has shrunk and Jodhpur depends today on water from the Rajasthan Canal which is very expensive because it has to be pumped over a long distance. This has deepened the cost, the unsustainability — and the crisis.

The ecological rationality of these ancient Indian systems must be understood and blended with the challenges of today. The biggest crisis now is climate change. It will bring more rain with fewer numbers of rainy days — this means more flooding in cities. The only way to manage this is to increase the water harvesting potential of urban regions, with lakes, ponds and parks having such systems. Building this is quite simple. It requires you to plan for a pond and a catchment which must be kept clean. It makes you conscious of your local environment. And it requires community participation, from villages to RWAs. We must rebuild our relationship with water now. We can do this by respecting ancient India's wisdom.

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timesevoke@timesgroup.com

Deccan Chronicle 17-April-2021

WEATHER | REPORT

Rainfall in Odisha, Jharkhand, eastern UP, Assam, likely to be below normal

Monsoon to be normal this year: IMD

New Delhi, April 16: The Southwest monsoon, which brings nearly 75 per cent of rainfall to the country, is expected to be normal this year, the India Meteorological Department (IMD) said on Friday.

The Long Period Average (LPA) will be 98 per cent with an error margin of plus and minus 5 per cent, said M. Rajeevan, secretary of the ministry of earth sciences.

Rainfall in Odisha, Jharkhand, eastern Uttar Pradesh, Assam and Meghalaya is likely to be below normal, but normal or above normal in the rest of the country, he said

while releasing the first Long Range Forecast for the four-month rainfall period from June to September.

"The monsoon will be 98 per cent of the LPA, which is normal rainfall. It is a really good news for the country and will help India have a good agriculture output," Rajeevan said at a virtual press conference.

The LPA, the average of the season's rainfall across the country from 1961-2010, is 88 cm.

The news augurs well for economy, battered due to the Coronavirus pandemic. The Southwest monsoon is one of the primary

drivers of the country's economy, which is largely based on agriculture and its allied activities. Large parts of the country rely on the four-month rainfall season for agriculture and also for filling reservoirs.

This is the first time the IMD has made a specific forecast on spatial distribution.

Rajeevan said the IMD will also issue month-wise forecasts during the next four months and also for the homogenous regions of the country — IMD's four divisions — the Northwest India, East and Northeast India, Central India and South Peninsula.

The country has recorded above normal rainfall for the last two rainfall seasons.

The La Nina and El Nino factors major influences on the Indian monsoon. The former is associated with the cooling of the Pacific waters and brings good rainfall while the latter is linked to the heating of Pacific waters and could lead to deficient precipitation.

"There are less chances of formation of an El Nino," Rajeevan said.

He said in the recent years, the year after La Nina has usually seen a normal rainfall season.

The Indian Dipole is

another major influence on the outcome of the monsoon. A negative IOD is associated with the heating of the Indian Ocean waters and a positive IOD is linked to the cooling of Indian Ocean waters.

The latest global model forecast indicates that neutral ENSO (El Nino Southern Oscillation) conditions are likely to continue over the equatorial Pacific and negative IOD conditions are likely to develop over the Indian Ocean during the ensuing monsoon season, IMD Director General

M. Mohapatra said. "La Nina is favoured through March-May with

80 per cent chances of a transition to ENSO-neutral in April-June 2021 and continuing through the fall of 2021," Rajeevan said, implying these conditions are favourable for a good rainfall season.

Earlier this week, Skymet Weather, a private weather forecasting agency, had also predicted a normal monsoon. However, it had pegged the precipitation during the four-month season at 103 per cent of the LPA, which is on the higher side.

Precipitation in the range of 96-104 per cent is considered to be in the 'normal category'.

— PTI

Indian Express 17-April-2021



RATTAN LAL KATARIA

River of life

Technology, community participation have restored Ganga's purity

THIS MONTH, INDIA witnessed the world's largest religious congregation as millions of pilgrims gathered for a holy dip in the Ganga during the Kumbh Mela.

Since time immemorial, the Kumbh Mela has been a melting pot for varied beliefs, practices, philosophies and ideologies. Its earliest mention can be found in the Rigveda Parisista (Supplement to the Rigveda 1200-1000 BCE). The Mahabharata (400-300 BCE) also mentions a bathing pilgrimage at Prayag as a means of atonement for past mistakes and guilt.

I cherish my childhood memory of large hordes of sadhus, along with their disciples, travelling through our village, en route to Haridwar. Living in a Dalit hamlet, I would trudge long distances, barefoot, just to catch a glimpse and listen to them, especially at the Triveni Sangam. Their awe and reverence for Ganga *maiyya* (mother) left a lasting imprint on me. I internalised that Ganga is much more than a glacial river — it is the very cradle of our civilisation.

Unfortunately, over time, the increase in population, coupled with unregulated industrialisation and unsustainable agricultural practices, have led to a significant increase in pollutants in the river. As a result, Ganga, which once sustained various forms of life, struggled to support its rich biodiversity. Depleting numbers of the Gangetic dolphins was a glaring example of this.

Erstwhile governments tried to address this problem, but their efforts didn't make a

mark. Perhaps, the challenge was graver than perceived. After coming to power in 2014, the Narendra Modi government started a flagship programme called "Namami Gange". It adopted a holistic approach which I term as a "Sangam" of public policy, technology intervention and community participation.

In 2016, the government issued a notification to authorise the National Mission for Clean Ganga (NMCG) to exercise powers under the Environment (Protection) Act, 1986. As a result, NMCG officials regularly conducted surprise checks on sewage treatment plants (STPs) and issued notices/directions to authorities wherever required. NMCG also issued directives regulating mining activities on river banks, prohibiting encroachment and regulating activities like the immersion of idols.

Unrestricted flow of sewage and industrial effluents into the Ganga has adversely effected its "*nirmalta*" (purity). Previous half-hearted attempts to address this were marred by faulty planning, leading to inadequate STP infrastructure, lack of proper maintenance and frequent technological breakdowns. Hence, novel technical interventions were the need of the hour.

NMCG adopted cutting-edge technologies like satellite imagery, remote sensing and geospatial solutions which facilitated real-time monitoring of pollutants in Ganga and its tributaries. Scientific forecast models were deployed for designing new sewage treat-

ment infrastructure. As a first, a hybrid annuity model was adopted for project implementation, thereby entrusting long-term responsibility for operations and maintenance on the project executors. A total of 342 projects worth over Rs 29,000 crore have been sanctioned till date, out of which 145 are completed. Given Ganga's central role in cultural rituals and rites, 123 ghats and 36 crematoriums have been constructed so far, while the Ganga Avalokan Museum has been set up at Chandighat in Haridwar.

To encourage community participation in cleaning the river, an awareness campaign is regularly carried out in cities, towns and villages alongside Ganga through a newly-established community force called "Ganga Praharis". Through them, the government seeks to transform "*jal chetna*" into "*jan chetna*" and turn it into a "*jal aandolan*".

To restore the river's biodiversity, NMCG is actively collaborating with premier institutes like the Wildlife Institute of India, Dehradun, ICAR-Central Inland Fisheries Research Institute, Kolkata and the Centre for Environment Education, Ahmedabad. A baseline survey for mapping the biodiversity has been completed and more than 50 per cent of the river now offers high biodiversity value. NMCG, in association with the Ministry of Agriculture, is also promoting organic farming in villages of Uttarakhand (50,000 ha), UP (42,000 ha), Bihar (16,000 ha), Jharkhand (4,500 ha). A long-term

Intensive and Scientific Afforestation Plan is under implementation in the river basin along with the Forest Research Institute, Dehradun. So far, 26,764 ha of area has been covered with local varieties of trees with an expenditure of Rs 337.2 crore.

The integrated "Sangam" strategy is yielding results. The entire stretch of Ganga, spanning around 2,525 km, now has prescribed water-quality standards for bathing (dissolved oxygen is more than 5mg/litre). I'm proud to inform that after years, or even decades, Kumbh Mela at Haridwar offered "Class-A" water quality to pilgrims as almost all major projects in Uttarakhand, numbering 35 with an outlay of Rs 1,159.85 crore, have been completed. The newly constructed ghats, especially Chandighat, and the face-lift at Har ki pauri, along with sprucing up of 72 ghats at Haridwar shall add to the experience of the pilgrims.

Our efforts are only half way through, but I am happy that Mother Nature is responding positively to all our interventions. The significant increase in the range of sighting of Gangetic dolphins is a testimony to this fact.

Going back to my childhood memories, I feel content that the Modi government is working relentlessly towards restoring the *nirmalta* and *aviralta* of Ganga *maiyya* with the awe and reverence it deserves.

The writer is Minister of State for Jal Shakti and Social Justice and Empowerment

Deccan Herald 17-April-2021

Hassan's kalyanis spring back to life

DHANYATA M POOVAIAH

People queuing up before water tankers and parched water sources has been a familiar sight in Hassan, the land of *kalyanis* and lakes. Though part of the Malnad region, people still face frequent crop failures due to acute water shortage.

These distressing scenes prompted a group of 17 environmentally-conscious citizens to find a sustainable solution for the impending crisis. In 2017, they formed Hasiru Bhoomi Prathishtana, a civil society initiative, to give a fresh lease of life to lakes and *kalyanis* (traditional water tanks) which form the lifeline of the district. There are over 230 *kalyanis* in Hassan district, some of which date back to the Hoysala period. They knew rejuvenating them would address several water issues.

"Malnad region is typically characterised by heavy rainfall. So, ideally there should not be water shortage. But with Hassan reeling under drought, it was difficult to supply water through tankers. We, therefore, felt the need to revive the traditional water bodies to ensure water to villages and recharge the groundwater," says



Volunteers have rejuvenated 60 kalyanis and 14 lakes in Hassan district since 2017. (In pic) Silted Tirupathyhalli kere; volunteers cleaning Arisina Kalyani; fishing in a rejuvenated lake.

H L Nagaraj, who as the Assistant Commissioner of Hassan in 2017, played an important role in forming the Prathishtana.

Community effort

Starting with the Doddakondagola lake, the Prathishtana has, so far, cleaned, desilted and rejuvenated 60 kalyanis and 14 lakes in and around Hassan district.

Working on the lines of Paani Foundation in Maharashtra, the Prathishtana, now comprising 27

trustees, aims to make conservation of water resources a people's movement. Villagers are encouraged to volunteer and funds are mobilised. Village-level committees are formed to monitor the rejuvenated water body.

While the lakes are cleared of garbage and desilted using machinery, the kalyanis and small tanks are cleaned and desilted manually with the help of volunteers.

"The members of the

Prathishtana held a meeting, and encouraged us to volunteer in rejuvenating the water tanks in our village. We then pooled in money and began cleaning them. In two months, two lakes and two kalyanis were revived," says Vasu, a member of Doddakondagola gram panchayat.

According to H G Kanchanamala, member of Chikkatte lake committee, cleaning a lake is easier than bringing about a behavioural

change in people.

"Chikkatte lake in Shantinagar was a dumpyard and even after cleaning it, people continued dumping garbage there. Later, we told people about proper waste disposal and put up no-dumping boards near the lake," says Kanchanamala.

Volunteers meet every Sunday to clean the lake and today, birds visiting the lake give the volunteers more reasons to rejoice.

"We were looking for a permanent solution for the water woes and this could be achieved only through rainwater harvesting. So, we came up with the idea of desilting the water bodies. Now after reviving them, the dried borewells in the surrounding areas have sprung back to life," said Rupa Hassan, trustee of the Prathishtana.

Fish have been introduced to maintain the health of these water bodies and generate income for

the local youth.

With an aim to rejuvenate the water bodies in over 2,400 villages in the district, the Prathishtana has been holding a Jal Andolan from March 22 (World Water Day) to April 22 (Earth Day).

"We along with panchayat development officers are conducting training programmes and awareness campaigns on proper methods of water conservation. We are also encouraging people and institutions to harvest rainwater," says Venkatesh Murthy, another trustee.

Lake festival

Murthy says that the Prathishtana continuously monitors the rejuvenated water bodies so that they do not fall into disuse again.

They hold Kere Habba (lake festival) regularly to highlight the success stories and to develop a bonding between people and water bodies.

Apart from reviving water bodies, the organisation has planted 25,000 trees along the tank bunds, parks and in other public places. They are also planning a tree plantation drive from April 22 to June 5 (World Environment Day) this year.

Rashtriya Sahara 17-April-2021

अगले एक वर्ष में मणिपुर के प्रत्येक ग्रामीण परिवार को पेयजल कनेक्शन

नई दिल्ली (एसएनबी)। जल जीवन मिशन के तहत उत्तर पूर्व के मणिपुर राज्य में अगले एक वर्ष में शतप्रतिशत ग्रामीण परिवारों को पेयजल कनेक्शन प्रदान कर दिया जाएगा। मणिपुर सरकार की ओर से केन्द्र सरकार के समक्ष इस संबंध में एक व्यापक योजना पेश की गई है। योजना के अनुरूप केन्द्र सरकार ने इस योजना के क्रिय्यावयन के लिए तकनीकी व आर्थिक सहायता उपलब्ध कराने का आश्वासन राज्य सरकार को दिया है।

मणिपुर राज्य ने जल जीवन मिशन के तहत अपनी वार्षिक कार्य योजना जल संसाधन और स्वच्छता विभाग, जल शक्ति विभाग की समिति के समक्ष पेश की। मणिपुर में लगभग 4.51 लाख ग्रामीण परिवार हैं, जिनमें से 2.27 लाख घरों में नल से पानी की आपूर्ति होती है। कोरोना महामारी के बावजूद 2020-21 में 1.96 लाख नए नल जल कनेक्शन प्रदान किए गए थे। राज्य ने शेष 2.25 लाख घरों को चालू वित्त वर्ष के अंत तक पेयजल कनेक्शन प्रदान करने की योजना बनाई है।