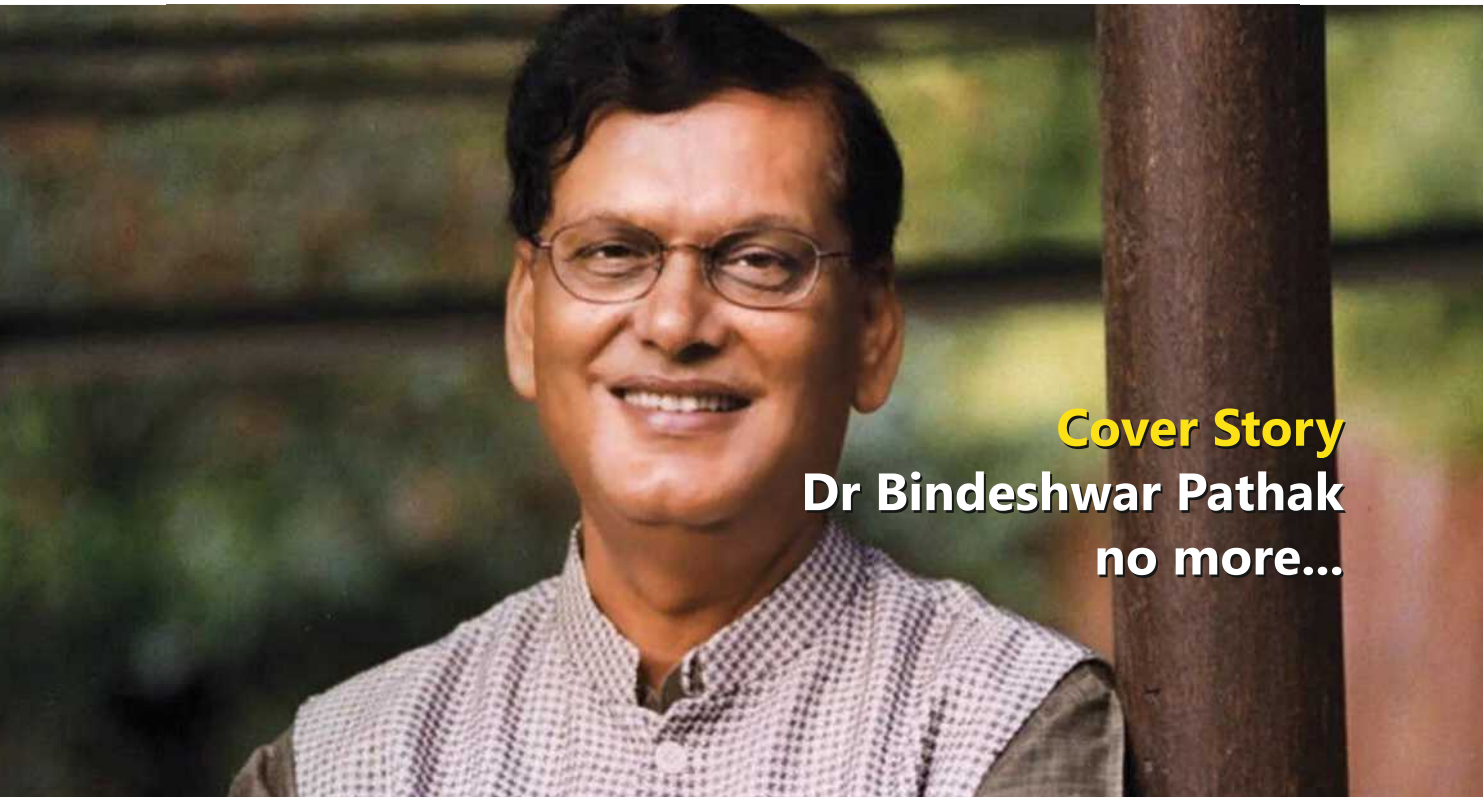


# Jalasangvad

A Dialogue on Water  
Editor: Dr. Datta Deshkar



## Cover Story Dr Bindeshwar Pathak no more...



# Famous rivers in the world

(1) Rio Grande River (Mexico)



(2) Atoyac River (Mexico)



(3) Rio Conchos River (Mexico)



(4) Nazas River (Mexico)



# Jalsamvad



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I had decided for myself to visit Stockholm at least once in my life to attend the World Water Week which is held there every year. This year, the dates declared were from 20th to 24th August, 2023. Since it was a costly proposition I requested my son to come forward to assist me and as he readily agreed to do so I could move forward. My grandson stays at Dusseldorf (Germany). After enjoying some time with him I proceeded to Stockholm, the venue of the conference.

Before leaving India, I had decided to present one paper in the conference. I wrote it and while submitting it I came to know that I was required to pay a fee of Rs. 2,50,000 for this presentation. I instantly dropped the idea and decided to go without it.

I came to know that a close relative of mine stays there in Stockholm. I contacted him and asked him if he could accommodate me for a week. As he readily agreed, my major problem was solved. I am not used to European food. Throughout my stay there, I could enjoy Indian food at his place.

After reaching there, I could get a copy of the complete programme of the deliberations there. In a period of 5 days, there were about 300 sessions, many of them going on simultaneously. I needed at least one hour to choose the topics of my interest. Theme of the conference was Climate Change and Water. Most of the presentations there, were technical in nature, based on mathematical models. A common person like me knowing very little of mathematics was a bit perplexed. I thought myself to be a misfit there.

To my surprise, I met the waterman of India, Dr. Rajendra Singhji in the conference. Both of us were equally delighted. He was camping in Sweden for more than two months. In Maharashtra, in collaboration with Shri Devendra Phadanwis, the then Chief Minister of the State, he had designed the campaign of Jalayuct Shivar. He found it very much useful to overcome the water problem here. As he thought that it would be more useful to different countries, he had started to move from country to country and I was happy to know that he was successful in convincing 32 heads of these countries to take up this programme there. As every country has different water problem, he had made some minor changes in the text useful to each country.

When I talked to Rajendra Singhji about the conference, he fully agreed that for last few years the nature of deliberations in the conference has drastically changed. The dominance of corporations working in the field of management of water has terribly increased. More than 90 percent of the participants were the representatives of these companies. They look at the conference as a business deal where they can find customers for their products. As the organizers receive huge donations from these businessmen they have readily accommodated this change. To my surprise, I found that nearly 75 percent of the participants were from African Countries.

This year's Stockholm water prize went to Professor Andrea Rinaldo for his research in river networks, demonstrating their significance in the spread of solutes, aquatic species and diseases. I could not attend this ceremony as I was required to pay handsome fee for attending this function. Poor Deshkar!

I could attend some sessions of my interest like Water delivery in remote areas in India using solar energy, Groundwater economics under Climate Change, Investing in rains-pathway to sustainable future, A world tour of sustainable WASH innovations, The impact of Climate Change on water resources, Increasing the productivity of agriculture etc.

This year, the conference was held in the newly constructed site. All the arrangement were nice. I had an opportunity to meet different water activists from India and other countries. My friend, Shri Gajanan Deshpande was also there with me. He has written one book titled Towards Excellence in Water And Culture. This book was published there at my hands. Thanks to Mr Deshpande that he gave me this opportunity.

**Dr. Datta Deshkar**  
**Editor**

**Dr. Bindeshwar Pathak no more.....**

**Tributes to the Departed Leader**



Dr. Bindeshwar Pathak, the founder of Sulabh International Social Service Organisation, is widely recognized in India – and around the world – for dedicating his life to build a nationwide sanitation movement spanning over five decades. His contribution has made a critical difference in the lives of millions of severely disadvantaged poor who couldn't afford toilets, and those who worked as manual scavengers and hence faced severe discrimination in the society owing to their low caste.

Dr. Pathak was inspired by Mahatma Gandhi; subsequently, his work and ethos have intrinsically contributed to the purposes and principles of the United Nations. In the last 50 years, he has worked tirelessly for the human rights of the manual scavengers who clean dry latrines, come from the lowest stratum of India's caste-based system and are mostly women. His actions aimed at

rehabilitating manual scavengers, restoring their dignity by providing alternative employment through skill development presents an inspiring example of promoting peace, tolerance and empowerment by a non-violent means.

**Early Life :**

Dr. Bindeshwar Pathak was born in a Brahmin family Rampur Baghel village of district Vaishali, Bihar. His mother was Yogmaya Devi and his father was Ramakant Pathak – a respected member of the community.

Pathak was close to his mother and was strongly influenced by her. Pathak says, 'my mother always taught me to help others. She never turned anyone away who came for help. From her, I learned to give without expecting anything in return. It is said a man is not born for himself but for others.' Pathak ingrained these values early on in life. Honesty and integrity have been his guiding principle throughout his life and career. Sulabh



International, the prestigious organisation that he founded was built through enterprise and tenacity embedded on those values.

Both his parents were, however, firm in the belief that education alone would help the family get out of difficulty. Pathak's grandfather was an astrologer. Pathak says, 'with time and experience, I have learned to respect the teachings of my parents and maternal grandfather. They gave me a life of love and compassion beyond my dreams.'

Pathak spent all his childhood and adolescent years in the village where he completed his school education. He later moved to the state capital Patna and enrolled in B.N. College from there he graduated in sociology.

After completing his studies, he worked as a teacher for a while before joining the Gandhi Centenary Committee in Patna as a volunteer. This was, however, not his original plan. He wanted to study masters in criminology from Sagar University in Madhya Pradesh. While travelling to Sagar, he was advised by two gentlemen to join the Gandhi Centenary Committee – they said he would be paid well. Since money was the need of the hour, Pathak was convinced. However, when he approached the committee, he learnt that there was no job. Since he had missed the deadline for the admission at Sagar, he decided to stay on and work as a volunteer.

By the time Pathak completed his advance degrees including a doctorate, he was married and even had children. By that time Sulabh International, the organisation he founded was just taking off.

#### **Mission Sanitation :**

Whilst working for the Bihar Gandhi Centenary committee, Pathak was asked by the general secretary of the organisation, Saryu Prasad, to work for restoration of human rights and dignity of untouchables – he was dispatched to a town called Betiah.

'I had my initiation with Mahatma Gandhi's philosophy while working for this organization. Gandhi strongly advocated cleanliness and was an ardent advocate for the promotion of rights and dignity of the harijans particularly manual scavengers. He longed for a solution that could replace dry latrines. I was extremely inspired by his cause which was furthered strengthened by own life experiences.'

As a child, Pathak had often noticed his grandmother treating women who came to clean dry latrine with discrimination. They entered through back door as they were considered impure. And, once they left she would sprinkle Ganga water on the ground thinking it would purify the house. Once Pathak touched an 'untouchable' woman out of curiosity in front of his grandmother. The consequences were severe: he was made to eat cow dung and urine, bathed in Ganga water in a



wintry morning in order to cleanse and purify him. This was the level of superstition and discrimination that prevailed in rural India against untouchables.

His childhood memories came alive when he was in a town called Betiah in Bihar. Here, he saw the magnitude of the problems first hand: the community of manual scavengers – also known as untouchables – were brutally treated and almost condemned to live an inhuman life. One incident, in particular, left a lasting impression:

Pathak says, ‘One day, whilst working there I witnessed a harrowing incident. I saw a bull attacking a boy in a red shirt. When people rushed to save him, somebody yelled that he was untouchable. The crowd instantly abandoned him and left him to die.’ Pathak adds, ‘this tragic and unjust incident had shaken my conscience to the core. That day, I took a vow to fulfil the dreams of Mahatma Gandhi, which is to fight for the rights of untouchables but also to champion the cause of human dignity and equality in my country and around the world. This became my mission.’

In 1968, troubled by pathetic conditions of the untouchables, and inspired by Mahatma Gandhi’s philosophy and teachings, Pathak came up with a technology that could replace dry latrines. He hoped that this technology would eventually bring an end to the problem of cleaning bucket toilets by the community of untouchables in India.

‘My idea was not just to provide a solution but to liberate the society that remained imprisoned in the formulaic traditions. I was determined to restore the dignity of manual scavengers that they were deprived of,’ says Pathak.

He adds, ‘for these women, their freedom, voice and basic human rights were forfeited the moment they were born as they were perceived to

belong to the lowest stratum of India’s caste-based society. By virtue of their birth, they worked as manual scavengers, cleaned dry latrines and faced severe social discrimination.

Dr. Pathak thus started the sanitation movement to liberate the manual scavengers.

### **The sheer saga of perseverance and patience:**

Pathak was convinced that to liberate manual scavengers of their inhuman occupation every household had to have a proper toilet. In those days in Indian villages, most households simply

didn’t have a toilet. Households that had a toilet were dry latrines which had to be manually cleaned by the “untouchables.”

Open defecation was a common phenomenon. Women were the worst sufferers. They had to go out for defecation in the cover of the dark – early morning or after sunset – and hence ran a very high risk of being exposed to crime, snake bites and even animal attacks. Lack of toilets exposed children to diarrhoeal diseases and scores died before attaining the age of five. The concept of public toilets was non-existent.

Despite these huge social challenges, Pathak’s project was initially a non-starter and got entangled in perennial bureaucratic processes. Pathak was undeterred.

‘I was in need of funds, I sold a piece of land in my village and my wife’s ornaments and even borrowed money from friends to run the organization. This period of my life was very difficult,’ Pathak recalls.

‘At times I even contemplated suicide. Since I had no money, I slept on railway platforms and often skipped meals. For long, there was no sight of any work. I was going through a miserable



phase and was on the verge of a breakdown.'

But during this phase of the struggle, Pathak received an important piece of advice: in 1971, one civil servant who had reviewed Pathak's file pending with the government for approval of funds was impressed by his noble cause and the massive impact that it was likely to create in resolving India's sanitation problems. He advised that instead of asking for grants, Sulabh should take money for implementing projects and, from the savings run the organisation. This way the organisation would be sustainable and that way it would be more likely to awarded government contracts.

In 1973, Pathak persuaded a member of Bihar Legislative Assembly (MLA) to write a letter to the then Prime Minister of India, Mrs Indira Gandhi, about the situation and liberation of scavengers, requesting her to pay personal attention to the problem. Within a fortnight he received a reply from Mrs Gandhi which stated that she was writing to the chief minister to give his personal attention to this matter.

Although the government took note of Mrs Gandhi's letter and started to act upon it, the issue again got lost in the cobweb and red tape of bureaucracy. Thus the problem remained unsolved.

However, for Pathak, the moment of reckoning came in 1973, when an officer of Arrah municipality – a small town in Bihar – gave Pathak 500 rupees to construct two toilets for demonstration in its premises. The toilets impressed the authorities who sanctioned a project for its wider implementation. Pathak toiled hard going from door-to-door to motivate and educate the beneficiaries to get their bucket



latrines converted into Sulabh toilets. The project was a runaway success. Pathak was invited to replicate the project in Buxar – and within a year Sulabh started working in the state capital, Patna.

In 1974, the Bihar Government sent a circular to all the local bodies to take the help of Sulabh in the conversion of bucket toilets into Sulabh two-pit pour-flush toilets designed by Pathak with a view to relieving the scavengers from the sub-human occupation of cleaning human excreta manually and carrying it as head load. The programme was then rolled throughout the state of Bihar. In the same year, Pathak introduced the system of maintenance of public toilets on a pay-and-use basis. At that time, it was a new concept in India but very soon it became popular all over the country. By 1980, 25000 people were using Sulabh public facilities in Patna alone. Such was the success of the programme that it soon received the attention of national and international press.

The New York Times, in a piece in 1980 hailed Dr. Pathak's mission and described him as an "articulate advocate of the role of voluntary organisations in development." The paper further added, "the major reason for success has been Pathak's sociological and psychological genius – he knows how to translate ideas into action and get people to act."

The Washington Post in 1985 defined Pathak's mission as "formidable".

### **Raising the voice for the human rights of manual scavengers:**

The Sulabh Sanitation Movement was not just about sanitation but it was about human rights framing to sanitation. Pathak was determined to change the discriminatory social structures that prohibited manual



scavengers from entering temples. In 1988, Pathak led a group of manual scavengers to the Nathdwara temples along with a group of Brahmins to perform rites and rituals. Initially, there was resistance from the people and they denied them entry into the temples. Instead of taking a confrontationalist attitude Pathak took the path of persuasion and successfully convinced the priests to let them in. It was a historic step. This unprecedented step was widely hailed. Pathak and the group were given an audience by the then President Venkataraman, Vice-President, Dr Shankar Dayal Sharma and Prime Minister.

The then Indian Prime Minister, Mr. Rajiv Gandhi commented, “unless these things are achieved India cannot be said to be going on the road to development.”

In 1991, Dr. Pathak was awarded the Padma Bhushan for his monumental work for liberating and rehabilitating manual scavengers and also for preventing environmental pollution by providing pour-flush toilet technology which served as an alternative to dry latrines.

Shortly after that in 1992, Pathak was bestowed with The International Saint Francis Prize for the Environment – Canticle of All Creatures by Pope John Paul II. The jury in a statement that Pathak was unanimously chosen for his

“comprehensive and interdependent nature of Pathak’s environmental and social commitment to the human responsibility of the earth.”

Over the years, Pathak’s actions have had a large implication in altering the process of inheriting an inhuman occupation based on caste. Through his leadership and vision, he provided support and inspiration to the marginalized manual scavengers and put them on the path of social mobility, especially in the two towns of Alwar and Tonk. He rehabilitated former manual scavengers and trained them as beauticians or in food processing, sewing or embroidery.

They have also taken courses in personality development. These factors largely contributed to their economic empowerment – making them self-reliant and helped them live with dignity in society. Further, Pathak set up a school and a vocational training centre in New Delhi that offers modern education to former manual scavengers and their children. His sanitation movement is largely helping change the mindset of the society towards health, equality and dignity and the rights of women and girls.

#### **Restoring the dignity of the widows :**

In 2012, Dr. Pathak undertook a great philanthropic mission at the behest of the Supreme Court of India. The court recorded that the government and its agencies were not doing enough to reduce the suffering of the widows of Vrindavan, after the National Legal Services Authority charity filed a public interest litigation petition to improve living conditions for the widows. The charity told the court that the conditions in the government shelters of Vrindavan were so bad that when a widow died, her body was chopped into pieces and disposed of, as there was no money to pay for the funeral rites. The court then gave Sulabh International the task of providing better services and care for the women.





Dr. Pathak immediately moved to help them. 'When I first moved to Vrindavan [in 2012] to get firsthand experience of the condition of the widows, I was horrified to learn about their heart-wrenching plight,' says Bindeshwar Pathak. 'It was inhumane and was a blot on our culture and civilization.'

Pathak started by giving a monthly stipend of 2,000 rupees (\$30) to each of the Vrindavan widows. 'Money offers the widows much-needed security and by paying it to them directly rather than giving it to the officials who run the shelters, we guarantee they have control over the money and they can spend it in the manner they want,' he says. The charity also provides ambulances, free weekly health checkups and training to teach the women new skills including reading and writing, embroidery and candle making.

Since 2013, Pathak has also been leading the widows in an annual celebration of the Indian festival of colour, Holi, in defiance of old customs that even today bar most widows in India from remarrying, celebrating festivals or wearing coloured attire. His act of rebellion sparked a nationwide debate about doing away with rigid traditions that deprive widows of the opportunities that other women in India enjoy.

'The neglect of widows living in Vrindavan is a problem specific to some families and some communities,' says Pathak, who is also campaigning for a government law for the protection, welfare and maintenance of widows. 'It is the question of moral

deprivation and greed of some families. But times are changing. We must teach the new generation to look after its elders.'

**Be the change that you want to see :**

Pathak championed the need for toilets in schools. Today, in many parts of India, the attendance of girl students in schools have remarkably improved due to toilets but more needs to be done. Sulabh International, under his leadership, has been playing an instrumental role in fulfilling the dream of prime minister Narendra Modi to make India a clean country. Recognising its efforts Sulabh was awarded the Gandhi Peace Prize for implementing the Swachh Bharat Abhiyan (Clean India Campaign).

Pathak's humanistic actions have changed the lives of thousands of men, women and children in India, who are able to live a life of dignity. Pathak says, 'God helps people to help others. Change in society is possible if we ourselves become the agent of change. We need the collective action of everyone to reform the unjust practices of our society.'

In the words of Mahatma Gandhi's grandson, Professor Rajmohan Gandhi, "I am the son of the son of Mahatma Gandhi but Dr. Bindeshwar Pathak is the son of his soul. If we were to go to meet M.K. Gandhi, he would first greet Dr.Pathak for the noble work that he is doing and then meet me."

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## Organization - Water for People

Shri Vinod Hande

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“Water for People” was founded in 1991 by the American Water Works Association (AWWA) as a response to the increasing water crises. It is a non-profit international development organization that helps people in rural parts of developing countries to achieve greater access to the drinkable and potable water and sanitation facilities. It is working for 6th Sustainable Development Goal of United Nation. 6th SDG is : availability of clean water and sanitation and monitoring of freshwater facilities for progress of human health. “Water for People” also works in educating people for healthy sanitation. Organization is working in 30 districts of nine developing countries. These developing countries are Guatemala, Honduras, Nicaragua, Bolivia, India, Peru, Rwanda, Uganda and Malawi. Head quarter of “Water for People” is at Denver, Colorado United States and Eleanor Allen is CEO of organization. “Water for People’s country team carefully selects region that they call district of that country where work will be focused. The goal is to bring 100% coverage in water and sanitation with each district. “Water for People” was founded in 1991 by American Water Works Association. In early 1980 Ken Miller, former president of AWWA, Wayne Weiss of Black & Veatch and John B. Mannon former executive of AWWA, shared a vision of a world where people have access to safe water and adequate sanitation. These three are responsible of creation of “Water for People”. Today “Water for People” has become the leader in social responsibility and innovation sector. “Water for People” partner with AWWA, The Water Environment Federation, National Association of Water Companies, National Association of Clean Water Agencies and US Water Alliance. Mission of

Organization is about people and their work is for people. Organization thanks their partners for solving their challenges of unsafe water and poor sanitation in the developing world.

Vision of “Water for People” – A world where every person has access to reliable and safe water and sanitation service. Values of organization are based on integrity in all they do.

- Accountability – to communities, partners and each other
- Courage – to innovate, to risk, to lead
- Empowerment – of citizens, families and local institutions
- Partnership – on the ground, in the sector and at all levels of government
- Transparency – in what we do, what it costs and what is working

Organization believe everyone deserves lasting access to safe water and sanitation. They have proven solution to the global water and sanitation crises. Their programs in nine countries they bring together local entrepreneurs, community members and local governments to build and deliver water and sanitation services that lasts long.

Everyone Forever- What is Everyone Forever? They want every family, clinic, and schools to have lasting access to safe water and sanitation for generations to come. This they call Everyone Forever.

Why Everyone Forever works.

- Ownership- “Water for People” never fully funds water and sanitation infrastructure, because they want to make sure the districts they work should invest in their own water and sanitation services. Individuals, communities and government become

the partners of organization where they work. Districts own the system they build and are responsible for maintenance and care of structures.

- Capacity Building (Sustainability)- Sustainability is the main criteria of everything they do. They are creating systems that will last and focus on building capacity of communities for maintenance of system after they leave the site.

- Monitoring and Reporting - “Water for People” trains local services authorities to collect data, monitor operations and keep data record system at high level. This monitoring keeps service authorities accountable to the people about the system working.

- Replication - “Water for People” believe that once momentum builds at the district level replication across countries becomes easier led by national water authorities.

hours every day spent for fetching water specially for women and girls. Safe water keeps family healthy. Establishing safe and reliable water services is more than digging wells and installing pumps. Water changes every thing. Safe water means people live longer and healthier life. Parents



are more likely to see their children grow up well. Their economic condition should also grow. Families can keep their kids in school. There is more time for work, rest and play.

“Water for People” empowers local communities to create lasting change. Organization also ensure communities have water that lasts for generations. So they achieve this by following few steps,

- Listening- They do everything in partnership with local government and communities. When they go to their area they meet with their partners, listen to their ideas and assess existing sources.

- Planning- They make a plan that covers every family, clinic and school. No one get overlooked.

- Building- They build wells, lay pipes and install taps. They make sure that the water is treated and tested.

- Training- They also train local mechanics and govt. offices to monitor, repair, and manage water system. They also train communities and local partners for tariff collection and manage water resources.

- Advocating- In the process they work hand in hand with local and national Govts. for advocating laws that will manage and protect water services for a long.

There are further few more steps like Monitoring, Observing and Existing for ensuring water that lasts long. Till date “Water for People”



Community, Government, Market and Technical are forces of Everyone Forever. “Water for People” helps building capacity within each of these forces to promote water and sanitation services that lasts.

**Water :**

Round the globe 2.1 million people don’t have access to safe water. Safe water reduces water borne diseases like diarrhea and cholera and save

provided reliable water access to 4.7 million people. **Sanitation-** In the world 4.5 billion people lack access to adequate sanitation. Safe sanitation services give families dignity, good health, and eliminates probabilities of contamination of water supply. Almost 500 million people still defecate in open. Unless until families invest in their own toilets they are less likely to use them. For this “Water for People” have a affordable toilet option. They achieve this in six steps like

- **Educating-** “Water for People” educates families about stopping open defecation to improve community health by taking help of their partners.
- **Inventing-** Based on local communities need, organization invent new ways of sanitation services and new sanitation products. This includes new type of toilets, methods of financing and constructing toilets and ways to safely manage waste.
- **Testing-** After installation of toilets, organization test them with customers and entrepreneurs in local markets. This test shows where improvement require in product and future demand.
- **Monitoring-** Monitoring require for satisfactory working of product, whether they are reaching to the new families and supply is maintained for spares.
- **Scaling-** If a new product is doing well in markets they are marketed in other cities and areas so that more people can access better sanitation services.
- **Exiting-** When organization see enough growth of a product or service they stop their involvement and trust the market to sustain strong sanitation service.

By providing families with affordable option for materials to built bathrooms, contractors to build and maintain their bathrooms and safe management of waste, “Water for People” has reached till date 1.77 million people by sanitation initiatives program.

**Hygiene :**

Water and sanitation infrastructure are important but people must understand the importance of using it. “Water for People” put

thrust on education about safe hygiene practice. Hand washing with soap could reduce diarrheal death by 50%. Every year 3.5 million deaths occur from water borne disease. On community level they motivate hygiene behavior change and in school they create hygiene curriculum and support teacher who lead sanitation club in their classroom and teaches about proper hygiene practices. Organization make sure about school have hand washing and toilet facilities. In 2019 “Water for People” educated 269361 people about hygiene.



In 2017 “Water for People” had a five year plan to benefit 4 million people of 40 district where they work by Everyone Forever sustainable module program and further multiply it’s impact by 20 times i.e. 80 million people.

Above it is mentioned that “Water for People” is working in nine countries and India is one of them. Work of “Water for People” in India.

## India

Like many other countries, India has many boreholes and hand pumps installed to supply safe drinking water are broken condition and non operational state due poor maintenance. “Water for People-India is working to solve this problem and create long lasting water solutions by educating communities and local governments. This program is known as Jalabhandhu (friends of water). The Jalbandhu are provided with training on how to repair and maintain different hand pumps. These jalbandhu are independent and earning their income from communities, schools and local govt. . This provides job security to Jalbandhu.

“Water for People” began working in India



from 1996. Initially they started with small project in West Bengal to help eliminate naturally occurring arsenic in water supply. In 2007 organization established a full fledge country program with office in Kolkata. By the end of 2010 they had programs in several districts of West Bengal. In 2012 organization expanded their work of operation in Bihar State.

### Everyone Forever program in India

Everyone Forever is a unique effort to provide water and sanitation to Everyone in targeted districts and municipalities. Forever means, these districts and communities will not need to rely on support from external water agencies to meet their water needs. “Water for People” is focusing it in two Blocks in the districts of South 24 Parganas in West Bengal and all five Blocks in the district of Sheohar in Bihar. “Water for People” believes long lasting water and sanitation solution can be achieved when all players like private sectors, civil society, and local government support them and understand them. “Water for

People” build the skill of district, block government, Gram Panchayat and Panchayat Raj, local self groups and communities based organizations. Sagar block south Paraganas district of West Bengal is a home for approximately 211991 people and mostly are farmers and fishers. Neighboring Sagar is Patharpratima is also a home for approximately 346064 people and mostly of them are also farmer and fishers. Sheohar district of Bihar have five blocks with combined population of 656916 people and mostly are farmers and day laborers. Their team is working on the system of arsenic removal technology in schools and communities.



### Sanitation

Sanitation solutions are also a part of “Water for People-India”. Organization works in schools to increase sustainable sanitation and water facilities. This promotes good hygiene practice among students. Organization is helping local partners in constructing of toilets and water infrastructure.

In addition to above work “Water for People-India” developed a voucher scheme and e-Catalogue to promote demand driven sanitation programming.

The scheme allows consumers to purchase household toilets before they receive their subsidy. Scheme was launched in 2015 and some 2000 vouchers were distributed. e-Catalogue helps them to decide what kind of toilet they can have to meet their demand. In 2016 “Water for People-India” continued to work with local partners to construct water points and implemented water, sanitation and hygiene education programs. Working area are the districts of West Bengal and Bihar. They have also started working in Chikhaldara in Amravati dist. of Maharashtra.



#### Other countries

**Guatemala** : “Water for People” is working in Guatemala since 1997. More than 100 water, sanitation and hygiene system installed and implemented throughout the country.

**Honduras** : Since 1997 “Water for People” supported water and sanitation work in Honduras. From 1997-2006 “Water for People-Honduras” worked with partner organizations in more than 90 rural communities.

**Nicaragua** : In 2010 “Water for People-Nicaragua” received legal status of NGO. They initiated their first water and sanitation program in the municipalities of San Rafael and La Concordia.

**Peru** : In 2013 Everyone Forever implemented in two districts i.e. Cascas and Asuncion .

**Bolivia** : “Water for People” started working in Bolivia in 1997. Since then they have developed a strategic program to deal water and sanitation needs in four municipalities.

**Uganda** : 95 percent of people in urban areas and 71 percent in rural areas have access to the safe water but 34 percent of the population in both urban and rural are using improved sanitation facilities. Despite major water infrastructure, a lack of operation and maintenance system they are broken and not meeting govt. standards for access,

quantity and quality.

**Rwanda** : Since 2008 “Water for People” is providing education through Everyone Forever program on sustainable drinking water, sanitation and hygiene in targeted districts.

**Malawi** : Organization is working in Malawi region since 2000.

#### Achievement of “Water for People” till 2022

- 229682 people reached with new or improved water services.
- 296767 people reached with new or improved sanitation services
- 171 schools with access to improved WASH
- 22 health clinics with access to improved WASH

Solving the global water and sanitation crises is a big challenge. Organization needs help of people to reach Everyone Forever program with safe water and sanitation services. Interested can join organization.

Similarly “Water for People” accepts donations from individuals right from \$25 onwards to bring water and sanitation services for every family and school.

“Water for People” is having strategic partnership with Charity:water, Focusing Philanthropy, Kimberly-Clark, Sea Grape Foundation, American Water, One Drop, etc.

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## World Water Day - 2018

### Nature for Water

**Shri. Gajanan Deshpande, Pune -(M) : 9822754768**



(A new article series has been launched from August 2021 to learn more about the importance of World Water Day and the various water awareness programs implemented every year.)

The theme for world water Day-2018 was 'Nature for water'. The theme emphasized finding nature-based solutions to the water challenges we face in the 21st century and stressed the need to work with nature to improve global water management by raising awareness of nature-based solutions.

Environmental degradation (including climate change) is driving the water-related crises seen around the world. Disasters such as floods, droughts, and water pollution become more damaging due to degraded vegetation, soils, rivers, and lakes. When we neglect our ecosystems, it becomes increasingly difficult for everyone to access the clean water we need to survive and thrive.

Nature-based solutions have the potential to solve many water-related challenges. We need to do more about 'green' infrastructure and align it with 'grey' infrastructure wherever possible. Measures such as planting new forests, connecting rivers to flood zones, and restoring wetlands can rebalance the water cycle and improve human health and quality of life.

The report published on the occasion of World Water Day that year highlighted practical nature-based management practices for agriculture, which were set to achieve the twin goals of high food production and smart conservation of resources. The report focused on three main principles. Those principles are

minimum tillage, permanent soil cover, and preservation of biodiversity. By cultivating crops with minimal tillage, farmers can create a natural environment for bacteria, fungi, and microorganisms in their soil. In that they can improve soil health and reduce soil erosion. Continuous tree growth and the use of mulch to cover the soil improve the water-holding capacity of the ground and reduce erosion. Biodiversity in agriculture has many benefits. However, using those practices for water management can be beneficial in cultivating crops that are resistant to pests and diseases and thus reduce the need for chemical inputs.

Agriculture depends on clean, sustainable sources of water. However, common modern farming practices harm the water supply. For example, excessive plowing can damage the soil and cause erosion. Up to 40 billion metric tons of soil is carried away by waterways every year due to erosion. Improper use of chemical fertilizers, pesticides, and herbicides leaches these chemicals into streams and rivers and ultimately into urban water supplies. Long-term planning for sustainable agriculture requires sound farm management practices that meet the goal of efficient food production while ensuring the future health of soil, water, and ecosystems.

The above-mentioned report for this year's World Water Day highlights many other nature-based solutions for water management beyond agriculture. For example, the creation of natural buffers by cities between water sources and natural waterways can improve the water quality of rivers and streams. In general, restoration of forests, grasslands, wetlands, floodplains, and other natural



ecosystems will greatly increase the amount of freshwater available worldwide.

While global water management and conservation face significant obstacles, it is becoming increasingly clear that the answer lies in nature. Global policies that harness the power of natural systems rather than fighting them can greatly improve water management and conservation.

With the help of isotopic hydrology, scientists can determine the quantity and quality of water supplies. They use naturally occurring isotopes as tracers to find out where groundwater comes from, whether it is recent or old, whether it is being recharged or polluted, and how it travels.

In addition, naturally occurring radioactive isotopes in water such as tritium, carbon 14, and

noble gases can be used to estimate the age of groundwater (from a few days to a millennium). When groundwater is found to be ten thousand years old, it means that the flow of water is very slow, and if improperly pumped, it may take thousands of years to replenish it.

All in all, the more friendly you are with nature and the more you take care of your water sources, the more abundant nature will surely put in your pocket, and if you make appropriate changes and improvements in your habits, there is no doubt that your future will be happy.

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## How a 1,000-year-old system of irrigation

## channels could help protect Spain from extreme heat - Elias Chavez

A 1,000-year-old Moorish invention may be the answer to Spain's increasing heat problem.

A chain of over 15,000 miles of acequias throughout the mountainous region of Spain is being restored as a low-cost way to bring water to crops during a time of increasing heat and droughts. Acequias are a network of irrigation canals set up by the Moors that bring snowmelt down from the mountains and distribute it to the land below.

Experts believe that the ancient solution will help spread water throughout the arid region of Spain and maintain agrarian practices. The only problem is that few people know how acequias work.

As Spain moved toward an agricultural model that emphasized reservoirs and many in rural communities in Spain moved to cities, knowledge of the acequias system dwindled. Only a handful of people in these communities know how to restore the acequias.

Historians and conservationists are working together to restore these systems and build back the generational knowledge required to operate them.

The acequias, from the Arabic word "as-saqiya" — meaning water conduit — were built by the Moors between the eighth and 10th centuries in what was then known as the Al-Andalus region of the Iberian Peninsula.

The acequias was an elegant solution of moving water that transformed the entire landscape of the mountainous region.

Spain's Andalusia region has a Mediterranean climate with long summers and dry winters.



*A view of the Alhambra Palace in Granada, Spain. Berk Ozkan/Anadolu Agency via Getty Images*

The acequias was an elegant solution of moving water that transformed the entire landscape of the mountainous region.



*An aerial view of the various crops in the Andalusian area of Spain. Universal Archive/Universal Images Group via Getty Images*

Spain's Andalusia region has a Mediterranean climate with long summers and dry winters.

When the Moors introduced the acequias to Spain and used it to move water more effectively through the mountains, they changed the landscape. Now the Andalusian provinces, Granada and Almeria, are the leading agricultural regions in Spain.

The acequias take water from snowmelt and precipitation up in the hills and mountains of Spain.



*Landscape of Sierra Nevada Mountains in the High Alpujarras, near Capileira, Granada Province, Spain. Geography Photos/Universal Images Group via Getty Images*

By diverting the water into these constructed pathways, the snowmelt is able to slow down and replenish more of the land along the way.



*Landscape of the River Rio Poqueira gorge valley. Geography Photos/Universal Images Group via Getty Images*

Without the acequias, the snowmelt would run into rivers and lakes that dry in the summer, and the water would have a shorter life.



*Landscape of the River Rio Poqueira gorge valley in Spain. Geography Photos/Universal Images Group via Getty Images*

Acequias also replenish aquifers and feed streams and rivers that originate further down the mountain. As the water moves through acequias, it soaks into the soil and is stored in the bedrock until it's needed again.

While the water moves through the acequias, it not only replenishes aquifers but it irrigates crops, softens the soil, and even fills fountains throughout the Andalusian region.



*Woman filling plastic water bottle from natural spring in the High Alpujarras, Spain. Geography Photos/Universal Images Group via Getty Images*

However, in recent decades, the acequias were abandoned in favor of industrial practices.



*An aerial view of the vineyards and fields in Spain. David Silverman/Getty Images*

In the 1960s, Spain began to favor using reservoirs for farming, pushing rural farmers away from small farms. Spaniards in rural areas started leaving for cities; according to the National Statistics Office, the country has lost around 28% of its countryside population over the past 50 years. Over time, debris, rubble, grass, and other plants have grown over and into the forgotten acequias.



*Landscape of the River Rio Poqueira gorge valley. Geography Photos/Universal Images Group via*

Getty Images

Temperatures have also been increasing in Spain, which have been devastating for farmland.



*A dog walks on a cracked riverbed due to the drought in July 2023. JORGE GUERRERO/AFP via Getty Images*

The rising temperatures combined with the rise of industrial farms have left the Alpujarra region of Spain barren as water is diverted to larger, more financially lucrative farms.

To combat severe drought and its effects on farms, farmers, volunteers, and researchers in Spain are working together to revitalize acequias systems.



*An acequia in the Sierra Nevada Mountains in the High Alpujarras, Granada Province, Spain. Geography Photos/Universal Images Group via Getty Images*

Armed with garden tools, shovels, and pickaxes, these volunteer groups work together to help bring water back to drought-stricken areas. Thanks to the restored acequias, farmers have said that they've been able to regrow fruit crops again.



*A collection of tropical fruit from a tropical fruit farm in Almeria, Spain. Edwin Remsberg/VWPics/Universal Images Group via Getty Images*

However, the ancient technology presents a unique set of problems.



*A hillside photo of the Alpujarra region of Spain. Universal Archive/Universal Images Group via Getty Images*

In order to maintain functional operation, these communities need to build back strong

generational knowledge of acequias. As fewer people live in rural areas, the cultural knowledge of where acequias are located and how they work has diminished.



*Houses in the village of Bubion, High Alpujarras, Sierra Nevada, Granada province, Spain. Geography Photos/Universal Images Group via Getty Images*

The disappearance of this knowledge makes it harder to find acequias and know how to operate them.

In an interview with BBC, Jose Antonio Peña, an "acequero" who tends to the acequias, said these customs are being lost because, "young people don't want to know about it."

Because the money produced by local farming can't compete with larger-scale industrial agriculture, there's a lack of financing for acequias reconstruction.



Spanish farmers using a machine to mow a wheat field. Joan Cros/NurPhoto via Getty Images

"If you understand efficiency in terms of multifunctionality, then the traditional irrigation systems are much more efficient. They better retain water, they recharge the aquifers, they improve the fertility of the soils," Martín Civantos, a Spanish archaeologist coordinating the acequias project, told the New York Times.

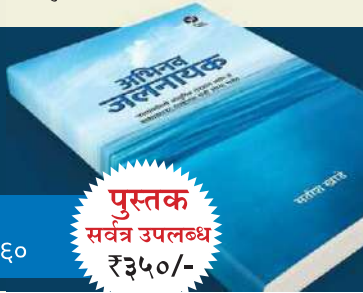
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## अभिनव जलनायक सामाजिक कार्यकर्त्यांनी का वाचावे ?

१. ओढ्यात, बंधान्यात, तळ्यात पाणी साठवले, पण त्या साठवलेल्या पाण्याचे अचूक व्यवस्थापन करण्यासाठी लागणारे विविध तंत्रज्ञान.
२. गावचे सांडपाणी ओढ्यातच करा नैसर्गिक पध्दतीने शुद्ध ! ट्रीटमेंट प्लांटचा मोठा खर्च, वॉज, केमिकल्स, मनुष्यबळ यापैकी काहीही लागत नाही अशी दोन तंत्रज्ञाने. ओढे नाले स्वच्छ झाले की नद्या ही होतील अमृतवाहीन्या !
३. आरो प्लांट पेक्षा कितीतरी स्वस्तात पाणी निर्जंतुक करणारी ओझोन टेक्नॉलॉजी ची माहिती.
४. कचऱ्याचे डोंगर वेगाने खतात रूपांतर होण्यासाठीचा मंत्र आणि तंत्र.
५. कचऱ्याची दुर्गंधी पूर्ण थांबवली पुणे महानगरपालिकेने, काय केले त्यांनी? त्याची माहिती.
६. बंद पडलेल्या बोअरवेल साठी जमिनीतच असणारे पाणी शोधून बोअरवेल भरण्याची किमया
७. बारा गावांचा गट करतो भूजल व्यवस्थापन व नियोजनाचे यशस्वी प्रयत्न.
८. दुर्गम भागात पिण्याचे पाणी शुद्धी करण्यासाठी मोबाईल फिल्टर
९. गावच्या तळ्यातले पाणी भिजवते दुपट क्षेत्र या तंत्रज्ञानाने
१०. बंधान्यातून, तळ्यातून, जमिनीतून होणाऱ्या पाणी गळतीला थांबवण्याचे उपाय. ही सर्व तंत्रज्ञाने सोप्या शब्दात वाचा या पुस्तकात.

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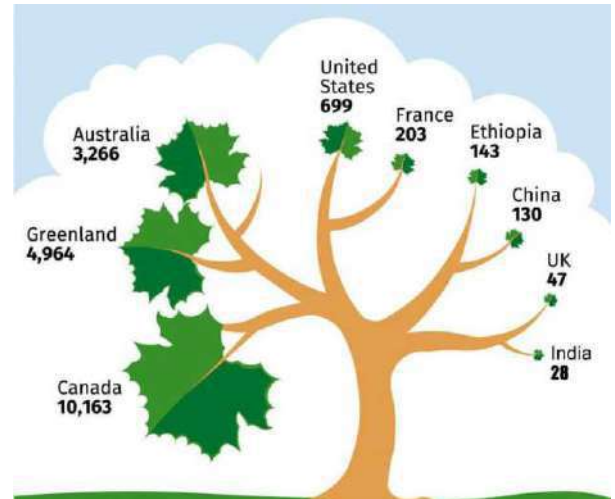


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## Innovation Journey to find the solutions at

### People's World Conference in Urlika - Sweden

Drought-Flood Treatment Innovation Journey to find the solution ended at People's World Commission on Drought and Flood's office in Urlika, Sweden.

Location-Urlika, Sweden

On August 26, 2023, the Drought-Flood World Innovation Tour was held at the office of the People's World Commission on Drought and Flood in Urlika, Sweden. A meeting was held here at the office of People's World Commission on Drought and Flood. The process of People's World Commission on Drought and Flood started on 26 August 2022 itself and the innovation journey was discussed. Today, after completing one year of the innovation journey, it was concluded in Urlika, Sweden. You know that the innovation journey started in the village Gopalpura, district of Alwar Rajasthan. Because the work that has been done in Gopalpur village in the last 4 decades has brought back the people who were devastated by drought and flood. After coming back they have established their natural prosperity. This is a great example to understand the technique of flood-drought treatment. That's why the journey started from Gopalpura village. In this journey, chapters were consecutively added one by one. Here in Sweden, Urlika, the first phase of the innovation journey has come to an end, today. In today's meeting, a discussion on the experience and conclusion of the dialogue of the innovation journey also started.

The conclusion is that, flood-drought is unfortunately increasing in the world today. The main reason for this is that the human relationship with nature has been broken in our current daily

life. Now, human education technology and engineering only teach the exploitation of nature. Due to the exploitation of nature, the relationship of love with the forest, soil, and nature has deteriorated. Due to this, the density of forests is continuously decreasing. The roads leading to the free flow of the rivers have been blocked as well. Meantime, the encroaching and polluting activities on natural routes have increased. The erosion of soil due to the problems mentioned above is becoming more common in the water-affected area because the rainwater comes rapidly and sweeps and brings the soil into the rivers, which results in the undesirable increase in the bed of the rivers. The variation in the cycle of rain also causes an increase in the flood-drought. Due to this, we are observing that suffering and crisis have arisen in the lives of humans day by day. It is very dangerous not only for human health but also for whole livings in the world and also has a frightening potential to trigger the World War III.

The programs that took place after the formation of the commission in the year 2022-2023, have also been accepted by the United Nations. By studying the work of Tarun Bharat Sangh, the general report was published. Therefore, as mentioned earlier, the journey started from Gopalpur village which was devastated and subsequently displaced due to the drought. Then, villagers retained water themselves by rejuvenating the water to conserve their prosperous village. There cannot be a lesson for the whole world from such prosperity of the village because the world is a world of diverse geo-cultural diversities. Biodiversity includes the diverse effects of climate change and the relationship of climate to

agriculture. In all these variations there are droughts and floods everywhere. But in the areas where there is flood-drought, their malpractices are beginning to be faced in the near future, unfortunately.

Where the land is bare, there are more side effects of drought and flood. Due to the earth being bare, when there is no spongy action of greenery between the earth and the sun from the sun's rays, then it creates heat and spoils it. That's why greenery is the only way to get rid of drought and flooding, which forced the people to increase greenery. The Society also needs to understand that the countries which have increased greenery on their land – like Sweden, when the first Earth Summit took place in 1972, had only half as many forests as today. They have doubled the forest on their land in the last 50 years. The countries which have increased their greenery, along with not only the health of the society, the health of the earth, and the health of humans but also the health of water have also improved.

It has been very clearly understood from this innovation journey that water is the most important element in the world. It is a substance that exists in liquid, gas, and solid. Science, technology, and engineering need to work on this with more sensitivity. It will be more auspicious than beneficial only by understanding the environment around the earth made of water in totality. Water, food, health, climate change, etc. all types of security will be available on the whole earth. So let us work for beneficiary and security, this is our biggest challenge today. The task of restoring the health of nature will not only be done by scientists, social workers, and politicians via finding convenient solutions and making proper laws and regulations but also correct practical work must be applied to fix everything. For this, all of us have to work in perfect harmony with nature. By stopping fragmented research, there is a need to do research work by connecting it with totality.

It was also concluded in this meeting that, so far the innovation journey had only gone to communities, social institutions, educational institutions, and schools, now next year in 2024 it

should go to the best educational institutions of the world in one year. Because the journey emerges a new and deeper understanding that would be found through this way. On the other hand, a relationship of love and respect for nature will also become widespread among people, who will be interacted and communicated. Then those people will, hopefully, also start working towards the protection of the auspicious, along with their benefits. There is a need to move education towards learning. So go to the top 100 educational institutions in the world and advance the learning of natural nutrition. They will also have the culture of connecting with the totality of nature and then they will do further research by including their education in the totality of nature. The facts that have come to the fore in the innovation journey so far, will make a good starting book to present those facts to the world. We need to work so that the world can also learn from this experience. In the end, Jalpurush Rajendra Singh thanked to everyone before concluding the meeting.

After this meeting, the innovation journey was concluded by the chairmanship of Ashutosh Tiwari and the chief guest, the Mayor of Urlika, Wartil Ederson. You all will remember that, last year on August 27, 2022, the Institute of Advanced Materials, Urlika itself started the formation process of People's World Commission on Drought and Flood. Mr. Wartil Andersen said that, it is a matter of pride for me too that, last year, the process of finding a way to get rid of drought and flood was started from here itself.

Dr. Ashutosh ji while speaking on the occasion of concluding the innovation journey said that this is not the end of the journey. This is just the beginning of the next water wisdom process. On 27 August 2023, we are starting the journey from the Baltic Sea to the 100 best institutions of the world to inculcate water consciousness and flood-drought treatment. Only, the first phase of this journey is successfully completed.

At the conclusion of the innovation journey, Shreyansh explained to Mayor Vartil here in Swedish language that, 12 International World Water Conferences have been held in this period.



1st conference Udaipur India, 2nd Delhi India, 3rd Dhaka Bangladesh, 4th Shreemosekh Egypt, 5th New York USA, 6th California USA, 7th Salvador Brazil, 8th Nimli-Bhikampura India, 9th Mahavir Ji Karauli Rajasthan India, 10th Newberg Germany, 11th Dharwad in Karnataka, India, and finally 12th Stockholm, Sweden. Along with this, two water and peace conferences were held – first at Narayan Dutt Tiwari Bhawan Delhi and second at Chambal. Thus, there were totally 14 conferences in total.

In addition, 52 national level conferences were held and 9 conferences were organized in flood-prone areas. 102 understanding of groundwater recharge and 107 skill-developing workshops were organized. 260 public meetings were held to create a dialogue channel with the public. Thus, a total of 544 programs took place. More than 250000 people participated in these programs. This journey was about one million kilometers long because it, starting from Sweden, it traveled from India to Brazil, Australia, Portugal,

Portugal to India, then America, New York in America, California, Los Angeles, Chicago, many and many countries in Europe, Germany, Denmark, Spain. Kenya, Somalia, Ethiopia in Africa as well as China, Tibet etc., circulated almost all over the world. In this information, it was learned that Tarun Bharat Sangh in India has also started physical work in countries like India, Mount Sinai, Egypt, South Africa, Kenya, California, Brazil etc.

In its conclusion, it is understood that modern education in the world has done natural exploitation very quickly with the help of technology, engineering, and science. That's why climate change happened and floods and droughts have started coming. Now to sensitize technology and engineering one must visit the world's highest educational institution. The second form of the journey will start from August 27 itself.

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## Stockholm Water Prize-2016

Prof Joan Rose, US

Shri. Gajanan Deshpande, Pune ( M ) : 9822754768



(An article series has been launched in August 2020 to learn more about the World Water Prize winners and their work.)

Prof. Joan Rose of the US was awarded the 2016 Stockholm Water Prize for her tireless contributions to global public health. She has been heavily involved in assessing water-related human health issues and developing guidelines and tools for decision-makers and communities involved in improving global health.

Prof. Joan Rose is the head of the 'Homer Nolin Chair' for Water Research at Michigan State University. She has dedicated her professional life to water quality and public health safety. She is regarded as a world-class authority on aquatic microbiology.

In its citation, the Stockholm Water Prize Nomination Committee stated, "The interrelationship of water microbiology, water quality, and public health, theoretically and practically, is fraught with uncertainty. The world is blessed with a few individuals who can meet the growing and changing challenges of clean water and health. Starting from cutting-edge science through dedicated and original research, then moving to professional dissemination, effectively reaching the legislatures, influencing practitioners, and raising social awareness, their work has made great progress. Mrs. Joan Rose is a shining example of a very rare talent in this field.

Prof. Joan Rose says that the prize has drawn attention to the most important issues related to water and water quality in the 21st century. She was always inspired by the principles of public health and how to prevent diseases. A key weak link is that our water infrastructure is

crumbling or nonexistent in many parts of the world. The global population without access to wastewater treatment facilities is estimated to be in the billions.

It is estimated that about 1000 children under the age of five die every day from diarrheal diseases, which are a leading cause of child mortality. However, it is only one of the diseases caused by poor water quality. There are more than two billion people in the world who lack adequate sanitation, and over one billion do not have access to safe drinking water. The World Health Organization says that 8.42 lakh deaths from diarrheal diseases every year could be prevented with access to clean and safe water, sanitation, and hygiene facilities. We need to develop a global water curriculum to educate the next generation of problem solvers, said Prof. Joan Rose.

Prof. Joan Rose has since long begun her quest to secure the health of the entire human community, and she has not stopped there. She expanded that work to ensure that water also supports health in aquatic ecosystems. Prof. Rose has provided dedicated leadership to make this world a better place for humans and other species to share.

*Cryptosporidium* is a parasitic microorganism that lives in the intestines and exists in both humans and animals. Prof. Rose is a keen scholar of this microorganism and is recognized as the world's foremost authority on the subject. These microorganisms cannot be killed by chlorine and can survive in the host's body for several months, even becoming fatal in severe cases. Prof. Rose and her team, whom she calls "water-spies," investigate outbreaks of waterborne diseases

globally to determine how they can be prevented or stopped. In 1988, she was the first to identify the widespread occurrence of *Cryptosporidium* in water supplies.

In the drinking water standards established by the World Health Organization in 2004, Prof. Rose's work was important, having a positive impact on countries around the world. She also worked in Malawi and Kenya to help translate this standard into local regulations. She was requested to take the lead in assisting Member States in meeting the goals of resource management and capacity building under UNESCO's International Hydrology Programme. She chaired a specialist group on international water cooperation, through which it was ensured that countries around the

world understood the latest engineering standards at the state and national level and incorporated those principles into their country's implementation.

Her expertise in identifying and prioritizing water quality issues facilitated the legal implementation of the Great Lakes Water Quality Agreement. She chairs the Singapore Water Audit Panel of the influential Public Utilities Board and is also a consultant to government water departments in both Canada and Korea. She also established the Global Aquatic Pathogens Project, which has the online participation of 140 water-related scientists.

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# The Earth Is Telling Us We Must Rethink

## Our Growth Strategy

### News

Why COVID-19 previews a larger crash. What we must do to save ourselves.



As the pandemic builds, most people, led by government officials and policy wonks, perceive the threat solely in terms of human health and its impact on the national economy. Consistent with the prevailing vision, mainstream media call almost exclusively on physicians and epidemiologists, financiers and economists to assess the consequences of the viral outbreak.

Fair enough — rampant disease and looming recession are genuine immediate concerns; society has to cope with them.

That said, we must see and respond to the more important reality.

However horrific the COVID-19 pandemic may seem, it is merely one symptom of gross human ecological dysfunction. The prospect of economic implosion is directly connected. The overarching reality is that the human enterprise is in a state of overshoot.

We are using nature's goods and life-support services faster than ecosystems can regenerate. There are simply too many people consuming too much stuff. Even at current global average levels of consumption (about a third of the Canadian average) the human population far exceeds the long-term carrying capacity of Earth. We'd need almost five Earth-like planets to support just the present world population indefinitely at Canadian average material standards. Gaian theory tells us that life continuously creates the conditions necessary for life. Yet humanity has gone rogue, rapidly destroying those conditions.

When will the media call on systems ecologists to explain what's really going on? If they did, we might learn the following:

That the current pandemic is an inevitable consequence of human populations everywhere expanding into the habitats of other species with which we have had little previous contact (Homo sapiens is the most invasive of "invasive species.")

That the pandemic results from sometimes desperately impoverished people eating bushmeat, the flesh of wild species carrying potentially dangerous pathogens.

That contagious disease is readily propagated because of densification and urbanization — think Wuhan or New York — but particularly (as we may soon see) because of the severe overcrowding of vulnerable people in the burgeoning slums and barrios of the developing world.

That the coronavirus thrives because three billion people still lack basic hand-washing facilities and more than four billion lack adequate sanitation

services.

A population ecologist might even dare explain that, even when it comes to human numbers, whatever goes up must come down.

None of this is visible through our current economic lens that assumes a perpetually growing, globalized market economy.

Prevailing myth notwithstanding, nothing in nature can grow forever.

When, under especially favourable conditions any species' population balloons, it is always deflated by one or several forms of negative feedback — disease, inadequate habitat, self-pollution, food shortages, resource scarcity, conflict over what's left (war), etc. All of these various countervailing forces are triggered by excess population itself.

Human-set fires in the Amazon: The current



pandemic is an inevitable consequence of human populations everywhere expanding into the habitats of other species with which we have had little previous contact. Photo: Pixabay Creative Commons.

True, in simple ecosystems certain consuming species may exhibit regular cycles of uncontrolled expansion. We sometimes refer to these outbreaks as “plagues” — think swarms of locusts or rodents.

However, the plague phase of the cycle invariably ends in collapse as negative feedback once again gains the upper hand.

Bottom line? There are no exceptions to the first law of plague dynamics: the unconstrained expansion of any species' population invariably

destroys the conditions that enabled the expansion, thus triggering collapse.

Now here's the thing. *Homo sapiens* has recently experienced a genuine population explosion. It took all of human evolutionary history, at least 200,000 years, for our population to reach its first billion early in the 19th century. Then, in just 200 years, (less than one thousandth as much time) we blossomed to more than seven billion at the beginning of this century.

This unprecedented outbreak is attributable to *Homo sapiens*' technological ingenuity, e.g., modern medicine and especially the use of fossil fuels. (The latter enabled the continuous increases in food production and provided access to all the other resources needed to expand the human enterprise.)

The problem is that Earth is a finite planet, on which the seven-fold increase in human numbers, vastly augmented by a 100-fold increase in consumption, is systematically destroying prospects for continued civilized existence. Over-harvesting is depleting non-renewable resources; land degradation, pollution and global warming are destroying entire ecosystems; biophysical life support functions are beginning to fail.

With increasing real scarcity, growing extraction costs and burgeoning human demand, the prices for non-renewable metal and mineral resources have been rising for 20 years (from historic lows at the turn of the century). Meanwhile, petroleum may have peaked in 2018 signalling the pending implosion of the oil industry (abetted by falling demand and prices resulting from the COVID-19 recession).

These are all signs of resurgent negative feedback. The explosion of human consumption is beginning to resemble the plague phase of what may turn out to be a one-off human population cycle. If we don't manage a controlled contraction, chaotic collapse is inevitable.

Which brings us back to society's restricted focus on COVID-19 and the economy.

Listen to the news, to politicians and pundits in this time of crisis. You will hear virtually

no reference to climate change (remember climate change?), wildfires, biodiversity loss, ocean pollution, sea level rise, tropical deforestation, land/soil degradation, or human expansion into wildlands.

Nor is there a hint of understanding that these trends are connected to each other and to the pandemic.

Discussion in the mainstream focuses doggedly on defeating COVID-19, facilitating recovery, restoring growth and otherwise getting back to normal. After all, as Gregory Bateson has written, “That is the paradigm: Treat the symptom to make the world safe for the pathology.”

Let that sink in: “Normal” is the pathology.

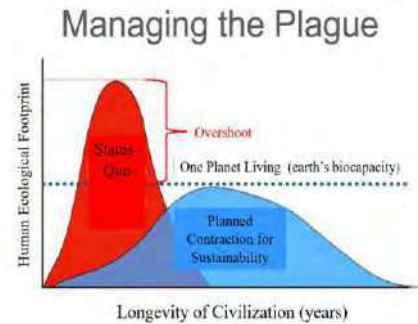
But returning to “normal” guarantees a repeat performance. There will be other pandemics, potentially worse than COVID-19. (Unless, of course, some other form of negative feedback gets to us first — as noted, there is no shortage of potential candidates.)

Consider the present pandemic as yellow flagging for what nature may yet have in store. Earth will have its revenge. Unless, to avoid full-on negative feedback, we stand back and re-focus. This means consciously overriding humans’ natural myopia, thinking generations ahead and abandoning our perpetual growth narrative.

Surely the time has come to reconsider what seems to have become a “self-terminating experiment with industrialism.”

To save itself, society must adopt an eco-centric lens. This would enable us to see the human enterprise as a fully dependent subsystem of the ecosphere. We need to script a new cultural narrative consistent with this vision. We must reduce the human ecological footprint to eliminate overshoot — below is a curve that really needs flattening.

Our cultural reset cannot end there. As medical supplies and equipment run out and supply chains stretch or break, people everywhere are becoming conscious of hazards associated with today’s increasingly unsustainable entanglement of nations.



We will have much to celebrate if community self-reliance, resilience and stability are once again valued more than interdependence, efficiency and growth. Specialization, globalization and just-in-time trade in vital commodities have gone too far. COVID-19 has shown that future security may well reside more in local economic diversity. For one thing, countries under stress may begin hoarding vital commodities for domestic use. (As if on cue, on April 3, Donald Trump, president of Canada’s biggest trading partner, requested 3M to suspend exports of badly-needed respirator face masks to Canada and Latin America.) Surely we need permanent policies for the re-localization of vital economic activities through a strategic approach to import displacement.

We might also build on the better side of human nature as ironically invigorated by our collective war on COVID-19. In many places, society’s fear of disease has been leavened by a revived sense of community, solidarity, compassion and mutual aid. Recognition that disease strikes the impoverished hardest and that the pandemic threatens to widen the income gap has renewed calls for a return to more progressive taxation and implementation of a national minimum wage.

The emergency also draws attention to the importance of the informal care economy — child rearing and elder care are often voluntary and historically subsidize our paid economy. And what about renewed public investment worldwide in girls’ education, women’s health and family planning? Certainly individual actions are not enough. We are in a collective crisis that demands collective solutions.

To those still committed to the pre-COVID-19 perpetual-growth-through-technology paradigm, economic contraction equates to unmitigated catastrophe. We can give them no hope but to accept a new reality.

Like it or not, we are at the end of growth. The pandemic will certainly induce a recession and possibly a global depression, likely reducing gross world product by a quarter.

There are good reasons to think that there can be no “recovery” to pre-COVID “normal” even if we were foolish enough to try. Ours has been a debt-leveraged economy. Thousands of marginal firms will be bankrupted; some will be bought up by others with deeper pockets (further concentrating wealth) but most will disappear; millions of people will be left unemployed, possibly impoverished without ongoing public support.

The oil patch is particularly hard hit. Canada’s tarsands producers who need \$40 a barrel to survive are being offered one tenth that, less than the price of a mug of beer. Meanwhile, oil production may have peaked and older fields upon which the world still depends are declining at a rate of six per cent per year.

This heralds a future crisis: GWP and energy consumption have historically increased in lock-step; industrial economies depend utterly on abundant cheap energy. After the current short-term demand-drop surplus dries up, it will be years (if ever) before there is adequate new supply to replicate pre-pandemic levels of global economic activity — and there are no adequate “green” substitutes. Much of the economy will have to be rebuilt to size in ways that reflect this emergent reality.

And herein lies the great opportunity to salvage global civilization.

Clearing skies and cleaner waters should inspire hopeful ingenuity. Indeed, if we wish to thrive on a finite planet, we have little choice but to see the COVID-19 pandemic as preview and our response as dress rehearsal for the bigger play. Again, the challenge is to engineer a safe, smooth, controlled contraction of the human enterprise. Surely it is within our collective imagination to

socially construct a system of globally networked but self-reliant national economies that better serve the needs of a smaller human family.

The ultimate goal of economic planning everywhere must now turn to ensuring that humanity can thrive indefinitely and more equitably within the biophysical means of nature.



**Note :** While designing the issue of Jalsamvad - English we find very interesting news, information and articles specially on water and its management. That tempts us to include the same in our issues. Getting formal permission for this inclusion is that way difficult. Therefore our effort is to print them as it is in our magazine. We may kindly be excused for such inclusions. We express a deep sense of gratitude to the original writers.

Thanks.

# How India's civil society can shape the country's water policy

## country's water policy

### News

India's National Water Policy is meant to provide a definite course of action on water management, ensuring the country's population of nearly 1.3 billion and industries have access to adequate water for various uses.

The country first adopted a National Water Policy (NWP) in 1987, which was revised in 2002. Technocrats and bureaucrats drafted the first two versions of the policy. The third revision took place in 2012. Although the water ministry held consultations with all stakeholders, including civil society, the drafting committee had only one representative of civil society.

The civil society has always opposed engineering-based water management, such as large dams, river linking and canal irrigation, sometimes for environmental and social reasons, but often for ideological reasons.

Another revision is now due and, for the first time, civil society organisations make up the majority of a committee to draft the National Water Policy.

Civil society representatives, who for the past 30 years have been critical of India's water policies, now have the opportunity to drive policy recommendations for water management in the world's second-most-populous country.

But, with a majority on the drafting committee, they now have a responsibility to not get carried away by romantic and unimplementable ideas. They must produce a policy draft that is workable in the real world.

In this piece, we provide some dos and don'ts for developing a credible NWP which will have an impact on India's water management policies, practices and processes.

#### 1. Avoid ideological preaching :

Members of the drafting committee should understand that a water policy should not be a lofty statement of how the nation wishes things to be.

Rather, it must be a realistic and achievable statement of how water resources should be managed, so the desired social, economic and environmental outcomes can be achieved.

All recommendation must be SMART: specific, measurable, achievable, realistic and time-bound.

#### 2. When presenting a paradigm shift, NWP must provide evidence

Civil society has criticised engineering interventions such as dams, barrages, inter-basin transfers of water, flood control embankments and hydropower. Therefore, one presumes the policy drafted by civil society actors will move away from these traditional interventions and suggest some new paradigm.

The drafting committee needs to assure the decision-makers, and also the people at large, that their paradigm is realistic and will provide food and water security.

The best way to ensure confidence in their paradigm is to quantify the recommendations.

The policy should include a basin-wise statement of the total estimated demand, the quantity of water to be set aside for environmental objectives, and the quantity of water that will be available for human consumption, separately from surface and groundwater sources, as per the new paradigm.

#### 3. Be clear and concrete :

Vague statements like "The water resources available to the country should be



brought within the category of utilisable resources to the maximum possible extent”, as found in the 2002 National Water Policy, are simply good-sounding words that have no real meaning.

The drafting committee for the new policy must avoid such vague statements.

They must also avoid ideas that are good in principle only and cannot be implemented.

Typical examples are planning for the basin as a unit, river basin organisations, and integrated water resources management. These ideas have been in all the NWP's right from 1987, and the water sector's total inability to implement them has been demonstrated beyond doubt.

Why these can not be implemented is a topic for a separate article. However, the drafting committee must not ignore the evidence. Not even one interstate river basin organisation has been established in the past 30 years, let alone made to function.

#### **4. Be realistic :**

It is very tempting for the drafters of the National Water Policy to try to match water availability and demand by modifying cropping patterns.

For example, to turn a deficit river basin to a surplus basin, the drafting committee might dream up doing away with all sugarcane, or replacing rice and wheat with millets, and justify the switch by arguing that millets are health food.

However, to think the people will stop eating rice and wheat and start eating millets, or that the entire economy built on sugar mills can be sacrificed, just because the water policy says so, is a pipedream.

Moreover, there are many things India must consider as an exporter of a wide range of agricultural products, such as rice, wheat, sugar, cotton, fruits and flowers. These factors include production per hectare, profit margins, farmers' income, and trade considerations. All these cannot be subservient to the single consideration of which crop has the lowest water requirement.

In addition, agriculture is in the jurisdiction of the states. Even the central agricultural ministry

cannot enforce the cropping patterns devised by the drafters of the National Water Policy, let alone the central water ministry.

#### **5. Use instructional language :**

In all three versions of the National Water Policy so far, the language has been very unsure. For example Clause 6.1 of NWP-3 reads:

A system to evolve benchmarks for water uses for different purposes, i.e., water footprints, and water auditing should be developed to promote and incentivise efficient use of water.

To say that “water auditing should be developed” makes it a piece of advice, which the recipient is free to accept or reject. The authors of NWP-3 could have written: “A system to evolve benchmarks for water uses for different purposes, i.e., water footprints, and water auditing shall be developed ...”

One wonders what stopped the authors of NWP-3 from using decisive and assertive language. Unless NWP-4 does away with this “should” word, it will remain only a piece of advice. The state water resources departments will be free to flout it, as they have done consistently.

#### **Managing water resources is a huge undertaking :**

The task facing the drafting committee is huge and complex. India's Constitution places water, and also agriculture, in the jurisdiction of the states. This means, the states formulate plans and execute them.

Control of water is a very sensitive subject. Each state wants its share of water to be defined, either by an inter-state agreement or by a judicial process, and opposes any external control of how to manage the share of water given to it. The states are reluctant to allow what they perceive as a dilution of their authority and control. While the water ministry may produce policies and plans, many variables and policy actions depend on cross-sector agencies.

For example, the environment ministry decides how much water is required for environmental flows.

The agriculture ministry decides price support for farm produce. And the finance ministry

decides whether or not funds are available.

All these factors have major implications for water planning. The constitution gives jurisdiction over water to the states and they have the responsibility to provide water to the farmers. Therefore, the states will do what they must do, no matter what is written in the NWP.

The drafting committee faces another challenge. Having been very vocal in criticising the engineering-based policy, they have heightened the expectations from them, and they now have to live up to those expectations. If they write a policy that is high on ideology but deficient in hydrology and fails to deliver water and food security, they will have to accept that hydrology has veto power over ideology.

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# Famous rivers in the world

(5) Grande de Santiago River (Mexico)



(6) Yaqui River (Mexico)



(7) Rio Somoyta River (Mexico)



(8) Usuma Cinta River (Mexico)



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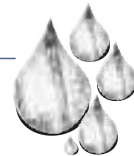
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# Jalasamvad



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