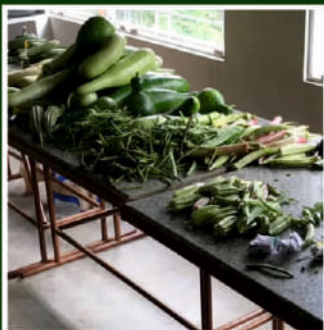


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# Jalasangraha

A Dialogue on Water  
Editors: Dr. Datta Deshkar, Shri Satish Khade



## Cover Story:

**Couple Transformed Drought-Hit District By Brewing Rural Revolution**





## Water Quality :



We have a glass of water in front of us. Can we say for sure if it is drinkable or not? The answer is NO. It may contain metals, salts, chemicals or some organic matter. Some of these are visible and some are invisible. Some of them change the colour, taste and even smell of water. But if they are not visible, then the quality cannot be checked by looking at the water glass.

### **What exactly is water quality?**

Water quality depends on the percentage of dissolved physical and chemical substances in water. Water quality is considered to be degraded when these substances are mixed in more than a certain amount of water. Water quality does not need to be the same for all uses (such as water used for agriculture, factory, drinking water). Since man is a sensitive animal, the quality of water he needs should be higher. Likewise, plants and land also need different quality of water. Polluted water, if used for irrigation, spreads the contamination to grains and vegetables and as human beings use these, eventually human beings will be harmed by it. Water supplied to the machines can be used even though it is of comparatively low quality. The waste water from the city of Nagpur is purified to some extent and used to keep the machinery cool in Koradi power plant in Nagpur. This use is called water recycling. Use of the same water naturally reduces the overall demand for water.

Quality water is useful for the proper growth of human being, animals and plants. It is unfortunate that approximately 29 percent of the world's population today does not have access to safe drinking water. Consumption of such water leads to various ailments. Water quality can be enhanced by natural and chemical action.

If we consume polluted water, that is harmful for the human body. The medical world says that nearly 90 percent of the illnesses are caused due to such consumption of polluted water. Diseases like cholera, typhoid, influenza, dysentery, Hepatitis are generally caused by consuming impure water.

# Jalsamvad



Mouth Piece of Bharatiya Jala Sanskriti  
Mandal

■ September 2022

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My close friend, advisor and mentor Shri Sharad Mande passed away on August 21, 2022, very saddening news for all of us. He was a regular reader and admirer of Jalsamvad magazine. As soon as he received the monthly issue of Jalsamvad, he would thoroughly read it immediately and call me to discuss it within four to five days. Those discussions were in fact the in-depth evaluation of the issue, which included his hearty appreciation as well as a harsh criticism. However, that used to be a sort of guidance and future direction for the magazine. He was such a meticulous man that he used to bring to notice even the spelling mistakes in the issue. I was so habituated to it, that if I didn't get his call timely, I would feel something was badly missing. But, that hardly happened. After the latest August issue was published, I kept on waiting for his call as usual; however, I did not receive it this time. I thought, I should wait for another day and then call him for his usual feedback. But, unfortunately, it was not destined this time. Instead, I received a message from his son that he was badly ill and perhaps counting his last moments of his life in the hospital. Very soon the news of his sad demise reached to me.

I used to make one visit to his house every month. In those visits, he would give me an overview of what had happened that month. That used to be a detailed guidance about various things, which included the information about the new books on water he has read, what new information it contained about water, how can that be used in our country; and how important that would be to include it in the Jalsamvad magazine, etc. He used to go to his son, who was in the US, every year. On his return, he used to bring with him many new books bought there in the US, related to water. He used to give me some of these books for reading.

I always felt that shri Mande was a rich mine of new ideas. I regularly had an insistence to him that he should write amply, so that others would get benefit of his knowledge. But, he was a bit lethargic towards writing. However, I made him to write and in the course of time he wrote a lot for Jalsamvad in its Marathi and English editions. At an instance, I urged him to write a series elaborating his association with various water-related organizations. He immediately accepted it, but, the fate did not. I am still haunted by the fact that he passed away before the series could materialize.

He spent his life for the Indian Water Works Association. It brought the organization to fame. He was the head of the local branch for many years. Similarly, he also worked as the secretary of the National Executive body for some years. Mr. Mande had a lion's share in the construction of the building this organization built for itself in Mumbai. However, he regretted a bit that this organization did not appreciate his work and finally was sidelined like a thorn. He always used to talk to me about this.

After working with 'Maharashtra Jeevan Pradhikaran' for many years, he took voluntary retirement from there and started his own consulting firm. Through this firm, he carried out construction of water storage works at various places in Maharashtra. He also worked as a Project Management Consultant at Dehu Road Cantonment Board and at Ambivalli project.

He is a former student of Shankarao Gutte Patil Vidyalaya, Junnar. He was valued in the Alumni Association of this institution. He played a major role in bringing that organization to prominence. The construction of the first floor of that school was completed under his guidance. He was to take me to that school to give a speech on water awareness, however, that was not possible.

He always kept on insisting that a lot of deliberations should take place on the topic of various water related issues. He was of the view that whenever any felicitation ceremony for a person associated with water development takes place, a seminar should always be arranged on the sidelines of it for the positive deliberations on various topics of water.

**Contd on Page No 18 .....**



## Organization- Desh Bandhu And Manju

### Gupta Foundation

Shri Vinod Hande (M) : 9423677795



Decades before Corporate Social Obligation (CSO) became mandatory, Desh Bandhu And Manju Gupta Foundation were the first corporate to take concrete steps towards ensuring that benefits of economic progress and scientific and social development reach rural India. The Lupin Human Welfare & Research Foundation was founded in 1988 on the day of Gandhi jayanti. Foundation aim to transform rural India by creating sustainable progress around economic, social and infrastructure development targeted for uplifting the poorest residing in remote villages of India. Desh Bandhu And Manju Gupta Foundation is a sister concern of Lupin.

Founder and Chairman of the organization is Dr. Desh Bandhu Gupta. He always believed that an individual is grateful to the society for his or her growth. His inner voice led him to the formation of Lupin Human Welfare & Research Foundation(LHWRE). They have chosen to work in the poorest of villages and their activities were for human development. Over the years they have expanded to ensure the growth and progress of rural communities across the country. The foundation reached to 2.5 million people, living in 4171 villages of 9 states of India. They operates through 18 centers. In Rajasthan (Alwar, Dholpur and Bharatpur), Maharashtra (Nagpur, Tarapur, Aurangabad, Dhule, Nandurbar, Pune and Sindhurg), Madhya Pradesh ( Bhopal and Dhar), Uttarakhand (Rishikesh), Goa (Dhargal), Gujarat (Dabhasa and Ankleshwar), Jammu & Kashmir( Jammu) and Andhra Pradesh(Vizag.)

Desh Bandhu And Manju Gupta Foundation has taken a initiative in Dhule district of Maharashtra to create model of backward district



development for India. Though quickly we are urbanizing, India is still predominantly rural. Rural India yet to come out from low productivity, low income, less profitability, debt and poverty. Key focus area of organization are as given below,

- Transforming Agriculture
- Promoting Rural Industries.
- Boosting income through livestock development.
- Livelihood security through skill and Enterprise Building.
- Women empowerment through financial inclusion and self help groups.
- Providing quality Health Service in remote areas.
- Infrastructure development and Natural Resource Management.

With 30+ years of intense experience in some of the most backward and remote villages, organization has shown a successful mode of Corporate Social Obligation (CSO) practice and district development that is scalable and sustainable.

To make the above program successful Desh Bandhu And Manju Gupta Foundation receive support and cooperation from following partners and funders. 1) National Bank For Agriculture and Rural Development(NABARD), 2) Govt. On India, 3) Govt. of Rajasthan, 4) Govt. of Maharashtra , 5) Rashtriy Mahila Kosh, 6) SIDBI ( Small Industries Development Bank of India), 7)



Habitat for Humanity and 8) BCI ( Better Cotton Initiative).

There is long list of funding and collaborative partners of organization. Among them few are mentioned. 1) Rashtriy Mahila Kosh, 2) NABARD, 3) SIDBI, 4) Khadi and Village Industries Commission, 5) Ministry of Rural Development, Govt. of India, 6) United Nations Development Program, 7) National Institute of Rural Development, Hyderabad etc.

Values of Organization,

- Integrity
- Team Work.
- Respect and Care
- Passion for Excellence.

Since the formation of Desh Bandhu And Manju Gupta Foundation it is implementing it's "Change India Programme" in Dhulia district of Maharashtra. The district has four blocks Dhule, Sakri, Shirpur and Shindkheda. Dhule falls under drought prone area with a average annual rainfall of district is 592 mm. . DBMGMF has purposefully chosen Dhule since it is poorest district in the country. In terms of Human Development Index (HDI) Dhule is at bottam among the districts of Maharashtra.

#### **Agriculture**

Agriculture for enhancing crop productivity. Farm productivity plays a main role in the development process at the village level. Considering this various measures are taken in this area to increase crop yield and productivity. To achieve this , training, seed support and demonstrations were organized by DBMGMF. System Rice Intensification (SRI) technology was introduced in rice cultivation to improve the yield at the same time to reduce input cost of labor and seed. Integrated Cotton Production Technology(ICPT) has also increased per acre production.

Crop Diversification- promoting vegetable and floriculture. Diversification of crop is necessary for farmers to adopt variation in climate and market conditions. Many farmers in the area are cultivating different vegetables and floriculture

crops due promotion by DBMGMF. More than 30661 farmers have availed training or assistance for vegetable farming. Now vegetable crops are grown on 5062 hectares of land. Tribal area farmers have adopted vegetable farming as a result of promotion of DBMGMF. Improved varieties of seeds and technical support and exposure offered by organization. Through this adoption of diversification farmers are getting enhanced income. Farmers were also provided with handy equipment and tools available in the market to reduce labor cost, time and for more effectiveness. Tools were made available to marginal farmers at affordable rates. 3040 spray pumps were supplied to farmers to protect their crops. Through this programme 2729 got support from Organization.



Land topography and soil conditions also affect crop productivity. DBMGMF also supported farmers in land development with an objective to make waste and barren land cultivable. Aim was also made to maintain greater soil moisture ratio. Poor farmers were given support of JCB machine and tractors at 50 percent rate.

#### **Animal Husbandry**

Livestock are source of supplementary income of poor farmers in rural areas. This has become a allied occupation for farmers. Dairy development is the preferred activities of small, marginal farmers and landless people as it provides continuous income. DBMGMF has initiated different measures in this sector for increasing production as well as for better returns. Programs like organizing animal vaccination camp, animal healthcare at the door steps and assisting farmers for fodder DBMGMF.



DBMGF also brought in about 4504 cattle of superior quality. Assistance of 5 to 10 percent offered by organization to the farmers and rest is arranged by farmers themselves through finance. Goat farming and backyard poultry also provides monetary support to small farmers. Till date 2864 goats were provided to goat farmers and landless.



Nutritive value of feed and fodder also plays important role in productivity of livestock. In the race of increasing pressure on land for growing food grains, oil seeds and pulses, production of fodder take back seat. Under this programme DBMGF helped farmers to grow high yielding varieties of fodder seed to make more fodder production. Around 2733 farmers are now cultivating fodder crops on about 538 hectares of land with the support of DBMGF.

#### **Non-Farming**

DBMGF is also working in non-farming sector for skill building for employment and micro enterprise development in order to develop and upgrade skill among the rural youth and women of adopted area of organization for skill building training to enable beneficiary either to get job or self employment. Trainings are organized to impart 23 different skills for meaningful employment. Till date 12527 persons got training, of them 30 percent secured jobs. Readymade garment design and stitching have received highest response. This is preferably for women. Training skills to become driver, dairy farmers, beautician, security guard,

electrician, welder, poultry farmers, house keeper, photographer and nurse also received good response. Training is also extended for self employment. So far 4848 person benefited in self employment training.

#### **Natural Resource Management**

Water resource development is at main centre of programs of DBMGF because water is a scarce and vital resource and lifeline of agriculture. Increase in the availability and access of water is necessary for enhancing farm productivity. Water conservation structures and measures initiated in the programme of DBMGF aims to raise





groundwater level through increased percolation by arresting flow of surface water. This program focus on `accessibility and optimum use of water by adopting measures like group well irrigation, lift irrigation and drip irrigation. Moto behind this projects is to make water available for human being, agriculture and livestock round the year.

Group well irrigation – Small farm owners are unable to access water even if it is available beneath their own land. This program encourages poor farmers to come together to tackle water scarcity and to bring more land under irrigation. Small farmers having adjoining lands and willing to share water equitably within the group were motivated to form a group for constructing, repairing common dug wells and bore wells. DBMGF also supports water harvesting structures. Activities like water harvesting through storage structures like check dams, form ponds can have immediate impact of charging wells. DBMGF give priority to these activities so that communities have the benefits instantly in this drought prone area. Till March 2016 DBMGF built 163 check dams in their area. These structures have direct impact on downstream wells with greater water recharge through percolation. More water is available for winter crop. Around 10633.43 acres of land is likely to receive irrigation due to increased percolation in the downstream wells. Around 11477 families were benefited till 2018.

Women empowerment is also a part of program of DBMGF. Women are most disadvantaged section of the society. True development needs women empowerment. DBMGF aims to empower women through formation and strengthening of the Self Help Group in their working area. These groups are link with bank and financial institution and thus become a centre of public activity for women. This gives personal identity and social status to women. Apart from formation of SHG, skill up gradation programs are organized for women such as garment designing, beauty parlor operation, quilt making.

By all this, women have found their space, voice and identity in the villages where DBMGF is operating.



### Health

DBMGF is proving heath services at doorstep to improve heath condition of the rural poor communities to enable them to lead productive life. This program aims to provide quality health service that can lead to early diagnosis and timely care in rural area of Dhule district.

Throughout the district general health check up camp with free medicines are organized by the organization. These camps also raise health awareness among rural people. Mobile Medical Diagnostic Unit (MMDU) offers low cost health service at door step of rural poor. The MMDU operates in 12 villages mostly on weekly bazaar days.

### Tribal Development Fund program of NABARD

Upon the successful experience of Adivasi Development Programme , NABARD decided to implement this wadi model across the country. In this direction NABARD created a Tribal Development Fund of Rs.50 crore out of its profit. The project TDF are implemented by partnering with State Governments, Government of India, NGOs and Corporates. Desh Bandhu And Manju Gupta Foundation is also implementing this TDF projects in Sakri and Shirpur block of Dhule district with 2200 families. The purpose of TDF to promote participatory livelihood program for economic uplift through sustainable agriculture, social empowerment, improvement of quality of life





Management(UPNRM). Currently this Umbrella Program for Natural Resource Management program of NABARD is being implemented by Desh Bandhu And Manju Gupta Foundation in Sakri, Shindkheda and Sirpur block of Dhule district.

Impact of work done by Desh Bandhu And Manju Gupta Foundation for tribal community of Dhule is broadly categorized as below.

- Financial upliftment of 1.02 lakh poor families so that they can get Rs.60000/- at the end of year.
  - Build 210 dams and rejuvenated 7 rivers.
  - Formed 2242 Self Help Group.
  - Migration stopped as jobs available within villages.
  - Developed awareness related to agriculture, husbandry and health.
  - Opened 56 tribal schools.
  - Business opportunities made available to 7833 young ones by arranging finance through bank. Etc.
- Dr.Desh Bandhu Gupta was the founder and president of Desh Bandhu And Manju Gupta Foundation. Mrs. Manju Gupta, Nilesh Gupta and Vinita Gupta are the trustee of Desh Bandhu And Manju Gupta Foundation.

including health in tribal area. This program also support activities related to development of tribal market, processing and marketing of product manufactured by tribal families.

NABARD has been implementing Natural Resource Management Project i.e, watershed development and Wadi development program under Indo-German collaboration. NABARD and German Development Corporation has launched the Umbrella Program for Natural Resource

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## India's position on the World Hunger Index

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India's position on the World Hunger Index has fallen and malnutrition and unemployment are rising due to a lack of healthy food

India is the second largest food producing country in the world and ranks first in the production of milk, pulses, rice, fish, vegetables and wheat. Despite this, a large population of the country is suffering from malnutrition. According to the United Nations' 'The State of Food Security and Nutrition in the World 2022' report, people's struggle for survival has increased sharply after the 2019 Corona period. In 2021, 768 million people in the world were found to be undernourished, of which 224 million (29%) were Indians. This is a quarter of the total number of undernourished people in the world.

Today, malnutrition is one of the most serious problems in India, yet it has received the least attention. Today, India has 4.66 million underweight and 2.55 million height-for-age children in the world. And this is very alarming as the data of National Family Health Survey-4 shows that the prevalence of malnutrition has reduced in the country, but still more than half 51% of children from the lowest income group families are stunted and stunted. And 49% are underweight.

The Government of India's own statistics on malnutrition show that India's malnutrition crisis has deepened. According to these statistics, more than 33 lakh children are malnourished in India at present. More than half of these, 17.7 lakh children, are severely malnourished.

The United Nations Food and Agriculture Organization presented a report titled 'The State of Food Security and Nutrition in the World 2022: Repurposing Food and Agriculture Policies to Make

Healthy Diets More Affordable'. According to this report, more than 97 crore people in India i.e. about 71 percent of the country's population cannot afford nutritious food.

According to the Food and Agriculture Organization, the definition of a healthy diet includes minimally processed foods. For example, for a balanced diet, the plate should contain plenty of whole grains, nuts, legumes, fruits and vegetables and a moderate amount of protein. A report by the Food and Agriculture Organization states that approximately \$2.97 per person per day (in 2020) is spent on a healthy diet in India. In terms of purchasing power parity, this means that a family of four spends Rs 7,600 per month on food. Purchasing power parity is a principle of international exchange that shows the difference in price of a good or service between two countries.

### **70.5% of Indians cannot eat a healthy diet**

The report suggests that 70.5 percent of Indians are unable to eat a healthy diet, while China (12 percent), Brazil (19 percent) and Sri Lanka (49 percent) have lower percentages. The position of Nepal (84 percent) and Pakistan (83.5 percent) is lower than that of India.

According to the report, there has certainly been some slow progress in India on the anti-hunger front. But, on the other hand, the problem of obesity is increasing. 3.4 crore people in the age group of 15 to 49 fall under the 'overweight' category. Four years ago this number was two and a half crores.

The gap between male and female participation in food insecurity has also widened. 31.9 percent of the world's women are moderately or severely food insecure, compared to 27.6



percent of men. Similarly, the problem of anemia has increased among women. A total of 18.7 crore Indian women are found to be disabled in 2021. In 2019, this number was close to 17.2 crore. That is, the number of women suffering from anemia has increased by one and a half crore in two years.

According to this report, about 80 crores i.e. about 60 percent are dependent on subsidized ration provided by the Indian government. Under the Pradhan Mantri Garib Kalyan Anna Yojana, apart from the special epidemic assistance of free five kg of food grains, the beneficiaries are given five kg of food grains per month at only Rs 2-3 per kg per person. The food subsidy program has been criticized for being a food grain, that is, the scheme provides enough calories but does not take into account adequate nutrition.

Interestingly, India's position in the Global Hunger Index has also fallen further. India was ranked 94th out of 116 countries in 2020, while in 2021 it has slipped to 101st. India is now lagging behind its neighbours Pakistan, Bangladesh and Nepal. This is very worrying. During the Corona crisis, the rich got richer, while the wealth of ordinary Indians declined by 7%. Many lost their jobs and lost their earnings. In such a situation, it is obvious that the government's policies and claims of development are far away from the reality on the ground.

The National Family Health Survey has revealed that there has been no significant progress in child nutrition in the last four to five years under the Central Government. This situation has become worse in the lockdown. Hunger-Watch surveys also show that more than 60 percent of people are not getting enough nutritious food and their health has worsened during the lockdown. Despite this, the present government of India has consistently neglected schemes like mid-day meal and ICDS in the budget. And not realizing that these schemes have been useful in fighting malnutrition and hunger.

According to the United Nations report 'The State of Food Security and Nutrition in the World 2022', by 2020 there were 307.42 crore

people worldwide who did not have access to a healthy diet. That means 42 percent of the world's population cannot eat healthy food. At the same time, there are 97.33 crore people in India who do not have a healthy diet. According to this, 70 percent of Indians do not get healthy food. This report also says that if a person eats healthy food every day, how much will he have to spend? If he eats a healthy diet in India every day, he will have to spend 2.9 dollars i.e. 235 rupees more for this. Accordingly, every person will spend more than 7 thousand rupees per month to eat healthy food every day. Due to expensive food, people cannot have a healthy diet.

If we talk about a healthy diet, 3 out of every 10 malnourished Indians in the world are so expensive that 97 crore people cannot afford a healthy diet. Although it is true that India is the second largest producer of wheat and rice in the world, it is unfortunate that more than 70 percent of the population does not have access to a healthy diet.

However, the report also said that the situation in India was improving, but the Corona epidemic put a brake on it. In 2017, 75% of Indians did not have access to a healthy diet. The number dropped to 71.5% in 2018 and 69.4% in 2019, but in 2020 the figure rose again to over 70%.

We can understand how big this problem is in India, China has more population than us, but the number of people who do not eat healthy food there is 5 times less than that of Indians. There are no fewer than 170 million people in China who cannot eat a healthy diet.

A United Nations report shows that the number of undernourished people in India has definitely decreased in 15 years, while the number of undernourished Indians in the world has increased.

According to the report, 24.78 crore people were malnourished in 2004-06, which declined to 22.43 crore in 2019-21. But in 2004-06 Indians accounted for 31% of the total undernourished Indians, while in 2019-21 the number of Indians increased to 32%.



Not only this, India still has more than 2 crore children under 5 years of age who are underweight for height. More than 3.6 crore children under 5 years of age are stunted.

The National Family Health Survey-5 (NFHS-5) report came out in November last year. The report states that only 11.3% of children aged 6 to 23 months are getting enough food.

According to the US Foreign Agriculture Service (FAS), India is the largest producer of rice and wheat in the world, followed by China. According to the Ministry of Agriculture, India produced 130 million tonnes of rice and 110 million tonnes of wheat in 2021-22.

In India, under the National Food Security Act, food grains are available at affordable rates to the poor. From March 2020, under the Pradhan Mantri Garib Kalyan Anna Yojana, the central government is giving free 5 kg food grains to 80 crore poor people every month. This scheme is applicable till September 2022. The government has spent 3.40 lakh crore rupees for this.

Children in class 1 to 8 or 6 to 14 are provided free meals in all government schools. Now the name of this scheme has been changed from midday meal scheme to PM-poshan scheme. Under PM-POSHAN, Rs 1.31 lakh crore will be spent from 2021-22 to 2025-26.

As news of looting of public welfare schemes of the government make headlines every day, we see how these public welfare schemes are being sabotaged with the connivance of administrative, political and middlemen.

The recently published Center for Monitoring Indian Economy (CMIE) report showed that the country's unemployment rate rose by 0.68% to 7.80% on a monthly basis, as against the level of 7.12% in May. This increase in the unemployment rate is mainly due to the increase in the rural unemployment rate which has increased by 1.41% to 8.03% on a monthly basis.

At the same time, according to the United Nations report, more than 22 crore people are malnourished in India. More than 97 crore people do not have access to healthy food. In China, the

number of people who do not get a healthy diet is 5 times less than that of Indians.

Talking about unemployment in 2022, the urban unemployment rate increased by 0.91% on a monthly basis to 7.30% in June and was at a level of 8.21% in May. The Center for Monitoring Indian Economy said around 1.3 crore jobs were lost in June, leaving the rest out of the labor market, with the number of unemployed rising by only 3 million. This brought the labor force participation rate to a June low of 38.8%. In the last two months (April-May) it was 40%.

This sharp decline in employment is alarming. In the agriculture sector, around 8 million people lost their jobs in June, as rainfall fell below normal in many parts of the country in June. Therefore, the work of sowing crops in rural areas has not been speeded up. Unemployment in the rural areas has increased due to the delay in the employment of agricultural labourers.

According to Center for Monitoring Indian Economy data, Haryana had the highest unemployment rate at 30.6 percent. It is followed by Rajasthan 29.8 percent, Assam 17.2 percent, Jammu and Kashmir 17.2 percent and Bihar 14 percent. It is worrying that such a large number of workers are affected by the monsoon. Another worrisome factor is the loss of 2.5 lakh salaried jobs in June 2022. A cut in salaried jobs in June also added to the concern. The government reduced demand for the armed forces and opportunities in private equity-funded jobs began to dwindle. These jobs cannot be saved by good rains alone. To save and create these kinds of jobs, the economy needs to grow rapidly in the near future.

On the other hand, there is a severe lack of any kind of strong employment structure in the government's policies. Every kind of undemocratic game has become the government's priority just to stay in power.

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## Couple Transform Drought - Hit District by Helping 400 Farmers Go Organic

### by Helping 400 Farmers Go Organic

(Cover Story)

Karnataka-based couple Valliammal Krishnaswamy and Rajan Palaniappan run Anisha,



an NGO that trains farmers and school students in organic farming, helping hundreds take it up and earn a better living.

Against the backdrop of the Male Mahadeshwara Hill range, a biodiversity hotspot where the mighty Western and Eastern Ghats converge, Valliammal Krishnaswamy and her husband Rajan Palaniappan have been brewing a rural revolution for the past 16 years.

Through their NGO Anisha, the couple has been working relentlessly to improve the livelihoods of the farming community in the drought-prone Chamarajanagar district of Karnataka by promoting organic farming.

The NGO was started in 1994 by Valliammal, Rajan, and their friend Srinivasan, while they were pursuing their LLB in Bengaluru.

Anisha, which translates to “from darkness to light”, then worked to engage street children in Bengaluru in educational activities.

“Working with those children gave me initial insight into the issue of migration from villages. Their parents had given up farming due to declining productivity and migrated to the cities

looking for greener pastures,” Valliammal tells The Better India.

The issue resonated with her on a different level, as her parents themselves had migrated to the city long ago from their villages.

In 2004, when she was visiting her husband’s village in Nallur, Chamarajanagar district, she noticed that most villagers there had either switched to chemical-based agriculture or abandoned farming and migrated to different places.

“The villages of Chamarajanagar depend mostly on farming, but the issue of low productivity has been weighing them down for years. The region is a rainfed area and depends highly on monsoons, as irrigation has always been difficult. But monsoons have not been very kind to them either. I saw vast patches of land that were abandoned there,” says Valliammal, who holds an MA in Sociology and an LLB.

Meanwhile, Rajan, who grew up in the fields of Nallur village, recalls that the region had extensive cultivation but has changed tremendously over the years. “Long ago, during the time of my grandparents, people used to practice only organic or natural farming. Over the years, they shifted to chemical farming for higher benefits and profitability, which affected the soil fertility and productivity,” he notes.

Motivated to understand the issue and find a solution, in 2006, the couple shifted their focus to rural development by promoting organic farming and ensuring food security in these villages. They shifted their NGO to Martalli in Kollegal Taluk of Chamarajanagar.

So far, they have been able to train over



2,000 farmers in organic farming and have helped set up over 400 kitchen gardens in and around 20 villages across the Martalli region.

#### **An effort to reinstate organic farming**

As an initial step, Valliammal interacted with different farmers in the area. She found that the older generation still endorses natural methods of farming and doesn't support the idea of using chemicals. "They say if bhoomi thayi (mother earth) hasn't given any yield this year, then she would definitely provide it next year. Then what's the point of spoiling the fertility of the soil by infusing such chemicals?" says the 51-year-old. Soon, Valli and her friend Srinivasan started visiting different villages across the Martalli region and conducting orientation classes for farmers to create awareness about the disadvantages of chemical farming.



"It wasn't easy to convince them, as they had many apprehensions about switching to organic farming. So we took it as a challenge and asked them to give us a small piece of land to show them how to do it successfully," she says,

The farmers allotted them land next to their chemically laden farm. "We helped them ready the given land for organic farming and adopt natural methods for cultivation. All this was done while they were simultaneously involved in chemical farming on the other side. From the results, we proved to them that organic farming is possible and more cost-efficient than chemical farming," she adds.

Valli says that their aim was to make the farmers self-sufficient in their ventures.

"We taught them how to set up their soil for organic cultivation, to use native seeds instead

of hybrid seeds from the shops, and prepare their own organic fertilisers or pesticides at home. This helped them cut down expenses and increase the value of their produce. We provided them with A to Z guidance," she explains.

"Since 2006, we have been able to train over 2,000 farmers in and around 20 villages. Among them, around 400 are currently practicing organic farming," she adds.



John Joseph, a farmer from Martalli, has been organic farming for the past six years after receiving training from Anisha. He says that switching from chemical farming has been more profitable.

"They trained us in making different fertilisers and pesticides using organic inputs like cow dung, urine, compost, etc. This helped me reduce the expense of buying chemical fertilisers. This has also been giving me a very good yield. I started earning more than I used to earn before, as the organic produce has more value in the local market," says John, who grows several fruit trees like sapota, bilimbi, and mangoes, as well as vegetables like spinach, coriander, and so on.

#### **Sowing seeds of hope and conservation**

While embarking on a mission to promote organic farming among villagers, Anisha also tried to set up a seed bank for the native seeds.

"As we were propagating organic methods it was important to provide people with native seeds and healthy varieties. Therefore, we set up a seed bank by sourcing native seeds from different parts of the country and systematically testing and documenting how it would grow in the Martalli region. Later, we would distribute it to farmers for free," explains Valliammal, adding that the NGO has



a research centre and a 9-acre working farm for the testing of seeds and fertilisers before reaching it to the villagers.



She says that farmers, after multiplying the seeds, are taught to save native seeds for the next year. They are also requested to return at least double the number of seeds to the bank after the harvest. "Currently we have more than 300 varieties of vegetables, millets, oil seeds, and more," Valli says.

The NGO also helped landless labourers who only have limited spaces around their homes to grow their own vegetables. This initiative was aimed at helping these households to reduce expenses and also provide their family healthy nutrition.

"Men in these families either work in rock quarries or in another state, living away from home. But the women have a chance at cultivating at least a few vegetables in their available space at home. So we started distributing vegetable seeds and providing them training in how to set up kitchen gardens," explains Valli. "Currently, we have helped to set up around 410 kitchen gardens in 20 villages."



In 2016, Anisha expanded the work to

students by helping them set up organic school gardens in their schools.

"We worked with 23 schools in three panchayats, with around 1,500 students between 2016 and 2020. With permission from the education department, we have conducted training and orientation classes in organic farming and provided them with seeds required for the initiative," says Rajan

"We also teach them to save the seeds and request them to return them to the bank if possible. Several students have taken up farming at their own houses," he adds.



John Britto, a teacher at Government Lower Primary School in Godest Nagar near Martalli, says, "Anisha came to our school in 2016, and ever since, we have been cultivating our own vegetables in our school compound. They trained our students and provided them with seeds and tools to set up the vegetable garden."

"Teachers and students have been equally involved in the farming efforts. Now we grow tomatoes, radish, brinjal, chilli, moringa, etc and have been including all the produce in our mid-day meal. We are glad that we could provide more nutritious food to our students, thanks to the training and continuous guidance from Anisha," he says.

Anisha provides schools with whatever they need to help these vegetable gardens flourish. "Currently we are working with 30 more schools in the Hanur taluk," says Rajan.

Edited by Divya Sethu



## Europe's rivers run dry as drought could be worst in over 500 years

Across Europe, drought is reducing once-mighty rivers to trickles, with potentially dramatic consequences for industry, freight, energy and food production - just as supply shortages and price rises due to Russia's invasion of Ukraine bite, local media reported.

Driven by climate breakdown, an unusually dry winter and spring followed by record-breaking summer temperatures and repeated heatwaves have left Europe's essential waterways under-replenished and, increasingly, overheated, The Guardian reported.

With no significant rainfall recorded for almost two months across western, central and southern Europe and none forecast in the near future, meteorologists say the drought could become the continent's worst in more than 500 years, The Guardian reported.

"We haven't analysed fully this year's event because it is still ongoing," said Andrea Toreti of the European Commission's Joint Research Centre. "There were no other events in the past 500 [years] similar to the drought of 2018. But this year, I think, is worse."

Germany's Federal Institute of Hydrology (BfG) said the level of the Rhine, whose waters are used for freight transport, irrigation, manufacturing, power generation and drinking, will continue dropping until at least the beginning of next week, The Guardian reported.

A vital part of northwest Europe's economy for centuries, the 760 miles (1,233km) of the Rhine flow from Switzerland through Germany's industrial heartland before reaching the North Sea at the megaport of Rotterdam.

In Italy, the flow of the

parched Po, Italy's longest river, has fallen to one-tenth of its usual rate, and water levels are 2 metres below normal. With no sustained rainfall in the region since November, corn and risotto rice production have been hard hit.

The Po valley accounts for between 30 per cent and 40 per cent of Italy's agricultural production, but rice growers in particular have warned that up to 60 per cent of their crop may be lost as paddy fields dry out and are spoiled by seawater sucked in by the low river level, The Guardian reported.

--IANS

**Stockholm Water Prize 2004**  
**Sven Erik Jørgensen, Denmark**  
**and William J. Mitsch, USA**  
**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. Sven Eric Jorgensen of Denmark and Prof. William J. Mitsch of the United States had been the joint winner of Stockholm Water Prize-





2004. Their work on how lakes and wetlands work has added to the world's knowledge. Prof. Jorgensen and Mitsch have made significant contributions to understanding as to how to better protect and nurture lakes and wetlands in the future and how to use them more efficiently for human use. Their work has been at the forefront of the development of environmental models of lakes and wetlands and has been recognized as an effective tool widely used globally in sustainable water resources management.

Sven Erik Jørgensen is a professor of environmental chemistry at the Danish University of Pharmaceutical Sciences in Copenhagen, and William J. Mitsch is a professor of natural resources and environmental science and director of the Olentangy River Wetland Research Park at The Ohio State University in Columbus.

Their theoretical research on ecosystems, lakes and groundwater quality management in lakes and wetlands, as well as protection, rehabilitation and use of lakes, rivers and wetlands has been accepted and practiced in both developing and developed countries.

The lakes have become a source of drinking water, hydropower, food, irrigation as well as recreation. But they are at risk of pollution and excess water uptake. Wetlands are important breeding grounds for biodiversity, providing water and primary productivity and on which numerous species of plants and animals depend for survival. Conservation of lakes and wetlands is a major need of life for people in many parts of the world, given their cultural, environmental and socio-economic value.

The concept of how work in lakes and wetlands should be sustainable is fine on paper, but it remains only a concept unless it is divided into activities managed by the right tools. Professor Jorgensen's unique ecosystem models provide an in-depth look at the entire lake and wetland system and the physical, biological and chemical interactions that occur between them.

Models of these types of systems provide concrete tools for managers and planners to solve problems and implement solutions. To this end, he and his colleagues developed modelling software for the United Nations Environment Program, which helps in planning and decision making for the management of lakes and wetlands in developing countries.

Today, more and more freshwater reservoirs are polluted by wastewater from domestic and industrial sources, which makes them eutrophic, where excessive algal growth results in severe changes of water quality and the ecology and overgrowth of algal there causes serious changes in water quality and the environment.

Software developed by Professor Jorgensen is an easy-to-use tool that helps to better understand the origins and effects of the eutrophication process, as well as preventive and curative measures.

Prof. Jorgensen and Mitsch, who are proponents of an environmental approach, have often collaborated with each other. The approach to the ecosystem recommended by them is a great strategy for integrated management of living resources on land as well as in water.

From their theoretical developments and practical applications in environmental engineering to "The creation of a sustainable ecosystem for the benefit of human society and its





natural environment and both", they combined various existing ecological fields such as classical ecology, restoration ecology and agriculture.

Skills in this area are used to develop low-impact systems for waste processing, food and energy production, housing restoration and other benefits. As eminent writers, orators and pioneers in the field, Prof. Jorgensen and Prof. William Mitsch have directly or indirectly influenced and inspired many scientists and environmental engineers involved in the conservation of lakes and wetlands in all parts of the world.

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#### **From Page No 4.....**

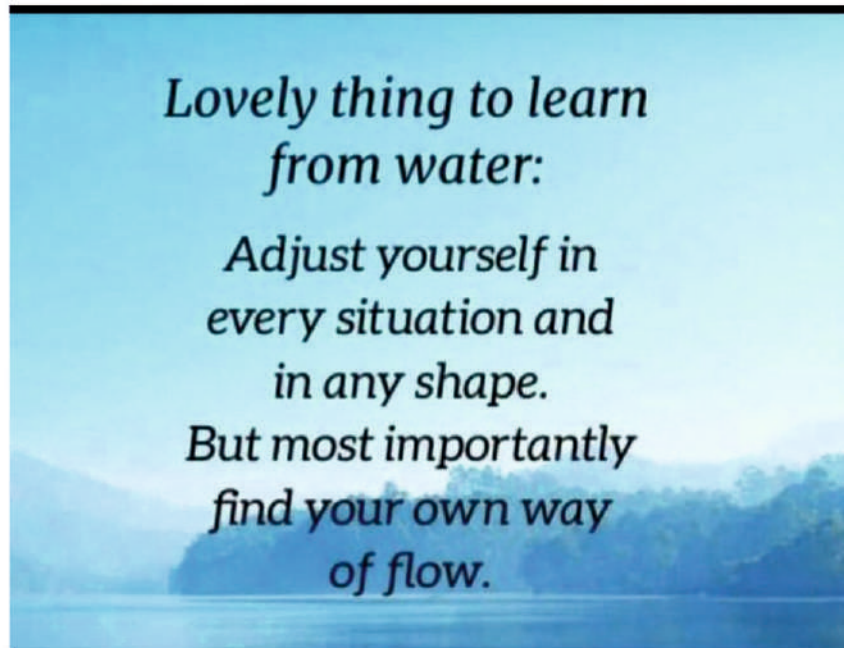
He was the mentor of Colonel Suresh Patil who revived Khadakwasla Dam and shri Anil Patil,

President of Maharashtra Development Institute.

He used to regularly participate in the events of organizations associated with the global water partnership. He also participated in World Water Week, Singapore Water Week as well as the World Water Council's annual events scrupulously.

We definitely feel sad that the global friend Sharad Mande is not among us today. But we have always to bow before the time. What else can we do except for feeling sorry that time has taken him away from us? Paying hearty homage to his memories, I stop here.

Dr.Datta Deshkar  
Editor







### **Sharad Mande, No more.....**

It pains me very much to write that our friend, philosopher and guide Shri Sharad Mande left us on 21 st August, 2022. He was working in Maharashtra Jeewan Pradhikaran for several years. He opted for voluntary retirement and started his own consultancy firm. His specialization was in erection of water distribution systems. He was associated with organizations like Global Water Partnership, Upper Bheema Area Water Partnership, Indian Water Works Association, Institute of Engineers and Bharatiya Jala Sanskriti Mandal. He was a great sympathiser of Jalsamvad and Jalopasana Magazines. He contributed regularly to both these magazines. May his soul rest in peace.



## Madhya Pradesh dam breach

(News)

Madhya Pradesh dam breach: Situation at 'under control now,' says CM

On Thursday, leakage was reported from the dam, being constructed about 35 km from the district headquarters, following which a flood alert was sounded downstream of the reservoir.

Madhya Pradesh chief minister Shivraj Singh Chouhan on Sunday said the situation in Dhar district, where a breach was reported in a wall of the reservoir, is under control now. He also said about a bypass channel being created, which will help enable the discharge of water to reduce the pressure on the reservoir walls.

On Thursday, leakage was reported from the dam, being constructed about 35 km from the district headquarters, following which a flood alert was sounded downstream of the reservoir.

"The whole team is keeping an eye on the Dhar dam. Preparations are on to ensure the safety of the public," the chief minister added.

### Here are the latest developments :

> On Sunday, the Indian Air Force (IAF) deployed two medium-lift helicopters to Indore following a request by the state government for humanitarian assistance disaster relief (HADR) near the Karam River dam.

> The IAF is working with the National Disaster Response Force (NDRF) and the state government for any operations that have to be undertaken, it said in a statement.

> Around 200 army personnel, including engineers, and three

teams of the NDRF from Bhopal and Gujarat's Vadodara Surat are at Dhar. Besides them, eight groups of the State Disaster Emergency Response Force (SDERF) are also at Dhar to bring the situation under control.

> The water started releasing safely through the channel at 3 am on Sunday, news agency PTI reported citing local officials. A pause in rains in Dhar since Friday has also stopped water from accumulating further in the reservoir.

> According to the report, almost 18 villages downstream would have submerged had the dam burst.

> As a precautionary measure, people from 12 villages in Dhar district and six villages in Khargone district have been shifted to safer places.

> State water resources minister Tulsi Silawat and industries minister Rajvardhan Singh Dattigaon had gone to the dam site to take stock of the situation.

> The dam is coming up at a cost of ₹304 crore, of which ₹174 crore has been spent so far.





## UK Heatwave: Official drought declared

across large parts of England

(News)



An official drought has been declared as low-water levels and tinder-dry conditions continue across the UK.

Eight parts of England, including Devon, Kent, East Anglia and Lincolnshire are affected.

The move is expected to trigger stricter controls on water use and five water companies have already announced restrictions, including hosepipe bans.

Millions are expected to be impacted but the Environment Agency said essential water supplies were safe.

John Curtin, director of operations, said the drought would go on for "a long time" and warned of possible restrictions on crop growing and further hosepipe bans.

It comes as the prolonged dry weather - combined with the current heatwave and July's record-breaking temperatures - have depleted rivers, reservoirs and aquifers.

Large swathes of England are bone-dry, with scenes of parched earth and grass turned yellow.

The conditions have prompted the Environment Agency to move eight of its 14 areas into drought status:

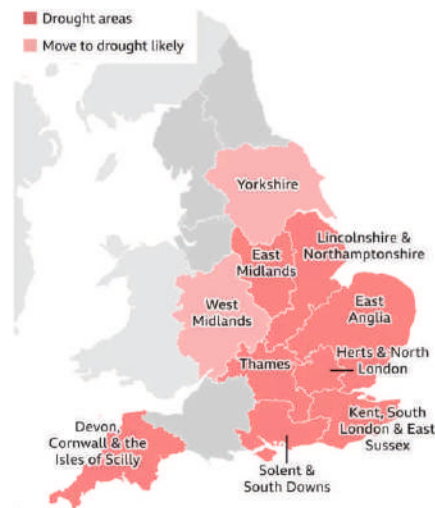
- Devon and Cornwall
- Solent and South Downs
- Kent and South London
- Hertfordshire and North London
- East Anglia
- Thames
- Lincolnshire and Northamptonshire
- East Midlands

Yorkshire and the West Midlands are also expected to move into a drought later in August.

The decision to declare a drought was taken after a meeting of the National Drought Group - made up of government and agency officials, water firms and groups including the National Farmers' Union.

Announcing a drought means government and water companies will put into action their plans to deal with it, with measures including hosepipe bans and taking more water than usual from rivers.

Drought declared in large parts of England



Members of the public and businesses in drought-affected areas are also being urged to use water wisely following the driest first seven months of



the year since 1976.

Elsewhere, Wales Drought Liaison group is also looking at the effect of the dry weather.

Five water companies - Welsh Water, Southern Water, Thames Water, South East Water and, most recently Yorkshire Water - have all announced hosepipe bans, while Yorkshire Water said on Friday that a ban would start on 26 August.

The latter firm, which has more than five million customers, says parts of the region have seen the lowest rainfall since records began more than 130 years ago.

It also said rivers and reservoirs in the region were running at 20% lower than expected for the time of year.

South East Water, whose ban came into force on Friday, is now asking people to observe restrictions on using hosepipes to water plants, wash the car and fill paddling pools - with rule-breakers facing fines of up to £1,000.

- What are water companies doing to tackle leaks?
- How the heatwave is changing landscapes
- The driest start to a year since 1976

Dominic Gardener, a farmer in West Sussex, said the dry weather was posing huge challenges for farmers.

"Everything is starting to struggle a bit - our grass is not growing at all - and livestock, we're having to feed them extra food," he said, adding crop yields had also been reduced by the dryness.

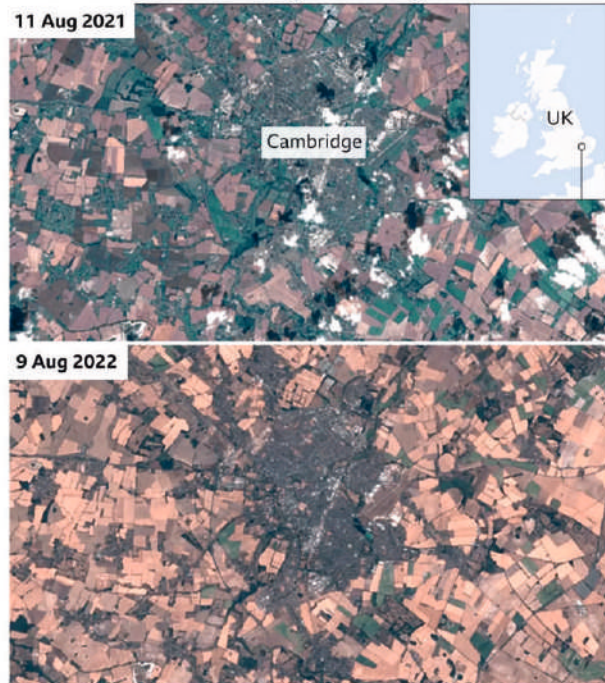
Farmers in parts of Fife are being temporarily banned from using water from the River Eden on their fields.

The Scottish Environment Protection Agency says the measure will come into effect from midnight on Saturday to tackle critical water shortages.

A four-day amber warning for extreme heat from the Met Office is in place for many parts of England and Wales until **Sunday**.

Temperatures are forecast to be lower early next week, however, and the Met Office has issued yellow warnings for thunderstorms on Monday, covering most of England, Wales and Scotland.

### Area around Cambridge turning brown



Source: European Union, Copernicus Sentinel-2 imagery 2022

And its fire severity index - which assesses how severe a blaze could become - is currently "very high" for most of England and Wales.

The situation facing firefighters across the UK has been described as "unprecedented", with increasing numbers of wildfires.

Fires have broken out across the nation, including in Leytonstone, east London, Studland Bay, Dorset, Creswell, in Derbyshire, The Dower House in Bristol, and Overton, near Basingstoke in Hampshire.

Police have evacuated about 50 homes in Creswell after a major incident was declared due to a field fire.

Fire crews are also tackling a large blaze which broke out at a Leicestershire recycling centre.

Meanwhile, homeless people struggling with the extreme heat in Bristol said it was "making us sick," and even sitting in the shade was "tiring and sweaty and uncomfortable".

Bristol Street Outreach Team, operated by charity St Mungo's, has been carrying out additional shifts and giving out water, advice and



sun protection to those in need.

UK temperatures have been rising day-on-day through the week. According to the Met Office, on Friday the highest temperatures were recorded in:

- Wiggonholt, West Sussex, at 34.5C
- Northolt, west London, and Hermonceux West End, East Sussex, at 34.2C
- Heathrow, west London, at 33.9C
- Ross-on-Wye, Herefordshire, at 33.8C
- Chivenor, Devon, at 33.7C.

Over the weekend temperatures could peak at 36C.

Met Office chief meteorologist Andy Page said there would be "increasingly warm nights" with temperatures not expected to drop below the low 20s in some places in the south.

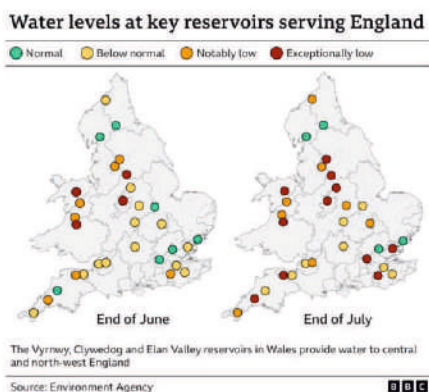
Sir Keir Starmer has accused the government of failing to fully prepare the UK for drought, and also out at the response of water companies.

Water firms have been criticised over leaks, with about three billion litres of water lost each day in the UK - between 20% and 24% of the total water supply.

The Labour leader said the drought was "predictable" but "as usual we had no plan from the government".

Environment Secretary George Eustice said there was "no reason for people to be alarmed".

He told BBC News that the UK's water supply "remains resilient" and that "we're in a stronger position than ever" to withstand droughts, with progress made on leaks and infrastructure to move water between reservoirs.



Heatwaves are becoming more likely and more extreme because of human-induced climate change.

Research institute UK Centre for Ecology and Hydrology (UKCEH) said it would require "exceptional" rainfall over the next one to three months to bring river, reservoir and groundwater levels back up to normal.

It said analysis showed exceptionally low levels would probably continue until October in southern England and Wales.

But scientists have warned bouts of heavy rain after a prolonged period of hot weather can cause flash flooding.

Robert Thompson, a professor of Meteorology at the University of Reading, said "the ground has effectively become like urban concrete" and will not absorb water quickly enough to cope with longer showers.

The situation in the UK is being mirrored across Europe. Much of the continent is baking in record heat, exposing riverbeds and triggering restrictions on water use in many areas.

A drought has also hit Germany's Rhine River, where the water is already too low to allow some larger vessels through.

#### What is a hosepipe ban?

Restrictions on usage during hosepipe bans can vary between water providers but generally people are not allowed to use hosepipes or anything that connects to a hosepipe or an outside tap. During a ban, people cannot use a hosepipe to:

- water a garden or plants
- fill a paddling or swimming pool
- clean a car
- fill a pond
- clean walls or windows

But you can use other water sources, like using your mains water supply but with buckets or watering cans instead of hosepipes, or using stored rainwater from a water butt and there are some exceptions when a hosepipe can be used.

Anyone breaking the rules could face a fine of up to £1,000.

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## Drought hits Germany's Rhine River:

### 'We have 30cm of water left'



As Europe lives through a long, hot summer, one of the continent's major rivers is getting drier - posing major problems for the people and businesses that rely on it.

Captain Andre Kimpel casts an experienced, but worried, eye across the river Rhine, where water levels have dropped significantly in recent days.

Several ferry services in and around the town of Kaub have been forced to a standstill, but he's still carrying people and their cars across the water to the opposite bank - for now.

"It's no joke," he says as he navigates the water which sparkles in the summer sunshine. "We have 1.5m [5ft] of water and our boat sits 1.20m deep. So we have 30 centimetres of water left beneath us."

It's not unusual for water levels to drop here but, Captain Kimpel says, it's happening more frequently. "We used to have a lot of floods. Now we have a lot of low waters."

On the riverbank nearby, there's an old measuring station. Any skipper wanting to enter the Upper Rhine will refer to the official water level recorded here.

The current level hasn't yet fallen below the lowest figure ever recorded here, in October of 2018. The measurement then was 25cm (the measurement is taken from the same reference point in the water, not the deepest point on the river bed).

At the town of Bingen, great swathes of the riverbed are exposed, bleached stones powder dry in the baking sun. People from the nearby town pick their way over the rocks, take photographs. In normal times they'd be underwater. One man told me he'd never seen it like this.

A few commercial vessels slowly navigate the channel of water that's left here.

The Rhine is one of Europe's great working rivers and industry here relies on barges to fetch and carry raw materials and finished products to and from the power plants and factories that line the riverbank.

The water's already too low to allow some of the larger vessels through. Others have been forced to reduce their cargo, lighten the load so that they sit higher in the water. And they're keeping a close eye on the river levels.

It's likely that the Upper Rhine will be closed to traffic completely, says Martina Becker from HGK shipping. Low water happens every year, she tells us, but it's not as extreme as this.

"It's quite extraordinary, particularly for this time of year. July and August are usually quite wet months with lots of rain and good water levels."

Low water normally happens later in the year, in October, she says.

"This is an unusual situation for us and the question is what happens in October, when the usually dry months arrive. We are already



approaching the record low level we had in 2018. We could reach that level next week."

Experts have warned that the low water could significantly damage Germany's economy.

And there's an extra worry for the government. Since Russia reduced its gas supply to Germany, the ministers are relying more heavily on coal-fired power stations. But much of the coal that feeds them is transported by barge. Some of the load is being shifted to the railway network but there's limited capacity.

There's a far greater concern among those who live by or work on the river.

The government agency which monitors the levels say that the current low water may just be part of a normal pattern. But, they note, such events are becoming more intense as a result of climate change and they say the situation will worsen in the second half of this century.

At Bingen, the water has fallen low enough to expose an old stone bridge which leads to a little island. People laugh as they make their way across the rocks, enjoying the novelty of being able to reach it on foot. But, for many, in this new landscape, it's a warning.

DownToEarth

## 10 FACTS ON CLIMATE CHANGE FROM IPCC REPORT

-  In the next 20 years the global warming will breach the threshold of 1.5°C
-  If we continue to emit greenhouse gases as now, global warming will be above 2°C by mid-2100s.
-  With every 1°C rise in temperature, there will be a 7 per cent increase in the intensification of extreme rain events
-  Carbon dioxide concentration is highest in 2 million years
-  Sea-level rise is the fastest in 3,000 years
-  Arctic sea ice is lowest in 1,000 years
-  Some changes we can't reverse any more, at least for next thousands of years
-  Ice melting will continue for the next 1,000 years even if we manage to control our GHG emissions
-  Ocean warming will continue, which has increased by 2-8 times from 1970s
-  Sea-level rise will continue for hundreds of years

[www.downtoearth.org.in](http://www.downtoearth.org.in)

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देशकर यांनी  
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## Jeevitnadi : Activities for the month of July 2022

Shubha Kulkarni

(M) : 9930809046



### Awareness:

- July 9th, an online session of Rivers and how we are responsible for current state of rivers, “My river my responsibility”, was organized by NGO Everyday for Future. The NGO has presence in the whole of Maharashtra, Madhya Pradesh, and Karnataka. Session was organized under the series “Now or Never”
- This was followed by another session by the same NGO on July 16th, on the topic “Clean river from my home”.
- As part of spreading awareness for reviving the rivers of Pune ecologically making them clean as a topmost priority and making people understand the limitations of proposed River Front Development which will work on beautifying using huge amounts and not going to address cleaning of the rivers. The rivers will continue to remain polluted, even after RFD & JAICA – the realization common person must know. Concerned citizens of Pune came forward to initiate the campaign and Jeevitnadi team took part in the LSOM (Last Sunday Of the Month) Marathon held in Balewadi on 31st July.

The team of volunteers stood with placards, spoke to people, interacted with the crowd and ran with the runners, all with the idea of generating curiosity and also scaling up the awareness about reviving Pune rivers ecologically.

### Action:

- Under the thought of having a compost unit at all the temple by the river, we achieved a small success this month, with a compost unit installed at Wakeshwar temple, Pashan- Sus area. Now we have successfully installed these compost units at 4 temples and trustees have shown keen

interest in taking care of God’s offerings.



PuneMirror Epaper PUNE



- Jeevitnadi participated in a workshop organized by FUSE- This is a project addressing Food Water Energy challenges, opportunities and solutions, with a major focus on Pune region. This project is been operational from mid 2018-mid 2022. FUSE has created a systems model, integrating the information gathered during the workshops and are exploring the efficacy and likely impact on the proposed solutions.



The most alarming part was the case that was brought to light by the mathematical model created on climate change, which showed how Pune is going to suffer from excessive rains and/or extreme droughts for long periods of time.

More than 80 stakeholders and policy experts shared visions, challenges, coping strategies, and potential policy solutions. This work was conducted as part of the Belmont Forum Sustainable Urbanization Global Initiative (SUGI) Food-Water-Energy Nexus theme for which coordination was supported by the US National Science Foundation under grant ICER/EAR-1829999 to Stanford University. The Austrian partners ÖFSE and IIASA are funded by the Austrian Research Promotion Agency (FFG). UFZ receives funding from the Federal Ministry of Education and Research (BMBF). Any opinions, findings, and conclusions or recommendations expressed in this

- Jeevitnadi participated in the panel discussion conducted by Janeev group and Vanchit Vikas, and spoke on Importance of rivers in our life

and how we need to protect this vital natural resource



**Awards and felicitation :**

- Jeevitnadi was awarded the Nirmal Ranmara award for its contribution in the field of spreading awareness with children.

**Regular activities :**

- Rains this month has hampered the regular weekend activities at the river, though the teams at Aundh and Ram Mula confluence continued the cleaning activities whenever possible. We also noticed the robust river bringing along with her, fresh plastic for us to clean the whole of next year!





## World Water Day-2006

### Water And Culture

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.)

It is a matter of great joy for Indians that the theme "Water and Culture", which has been firmly entrenched in the minds of Indians for centuries, was adopted as a mainstream on the occasion of World Water Day-2006. Over the time, human beings have come to realize that culture evolves, develops and flourishes because of water. Water is highly valued in the glorious culture of India. Indian culture has been inextricably linked with water development since time immemorial. This view is also expressed in Vedic mantras like "Ima Aap: Shivatma ... Ima Rashtrasya Vardhini" (इमा आपः शिवतमा... ईमा राष्ट्रस्य वर्धिनी). In short, one can say - water is life and culture is the essence of life. As life is impossible without water, without culture man is like an animal. In this way, if the relationship between water and culture is to be linked to human life, it is like the interrelationship between water and fish.

Man's life depends on five basic elements - earth, water, fire, air and solar system or Brahma and according to this water and human life i.e. human culture have been interrelated since the beginning of this creation. This relationship is multi-faceted. Like the child grows on the mother's shoulders, so does culture in the river valley grows on the river's shoulders. So our villages were settled on the banks of the river. This relationship of the river was taken not only by our intellect, but also by our heart. That is why we call river as 'Mother' and water as 'Holy Teerth'.

The emergence and development of water culture was due to human efforts. Looking at life through the availability of water helps to understand the importance of water. For this, from time immemorial, human beings have connected with water at all levels. That relationship has evolved into a culture, and this water-based culture has evolved over hundreds of years of effort.

Culture is the interaction of a society with an unchangeable environment in a particular period of time. Considering the place of water in India's glorious and long tradition and saying India as सुजलाम सुफलाम country, the concepts as to how water is productive and how it bears good fruits - have all evolved from "Water & Culture". Water & culture is the perfect idea of what the place of water was in the established culture, what efforts were made by the society to make it available and how it brought stability in the social life. "Water & Culture" is the management done by the society with the sentimental proneness to water keeping in view the objectives of water scarcity, water allocation, its distribution and the efforts made to overcome it.

Our country is multi-ethnic, multi-lingual and multi-cultural. Water has a special place in the culture of this agriculture-dominated country. The identity of any society is determined by the folk culture of that society. The culture of a society is determined by how rich its culture is in literature, music, painting, dance etc. Rivers, reservoirs, wells, cisterns etc are considered to be sacred places of water. There seems a lot of literature, musical compositions and folk songs created on rivers, reservoirs, wells, ponds, etc. - for e.g. songs sung on the occasion of 'Akshay Tithiya'. We know that

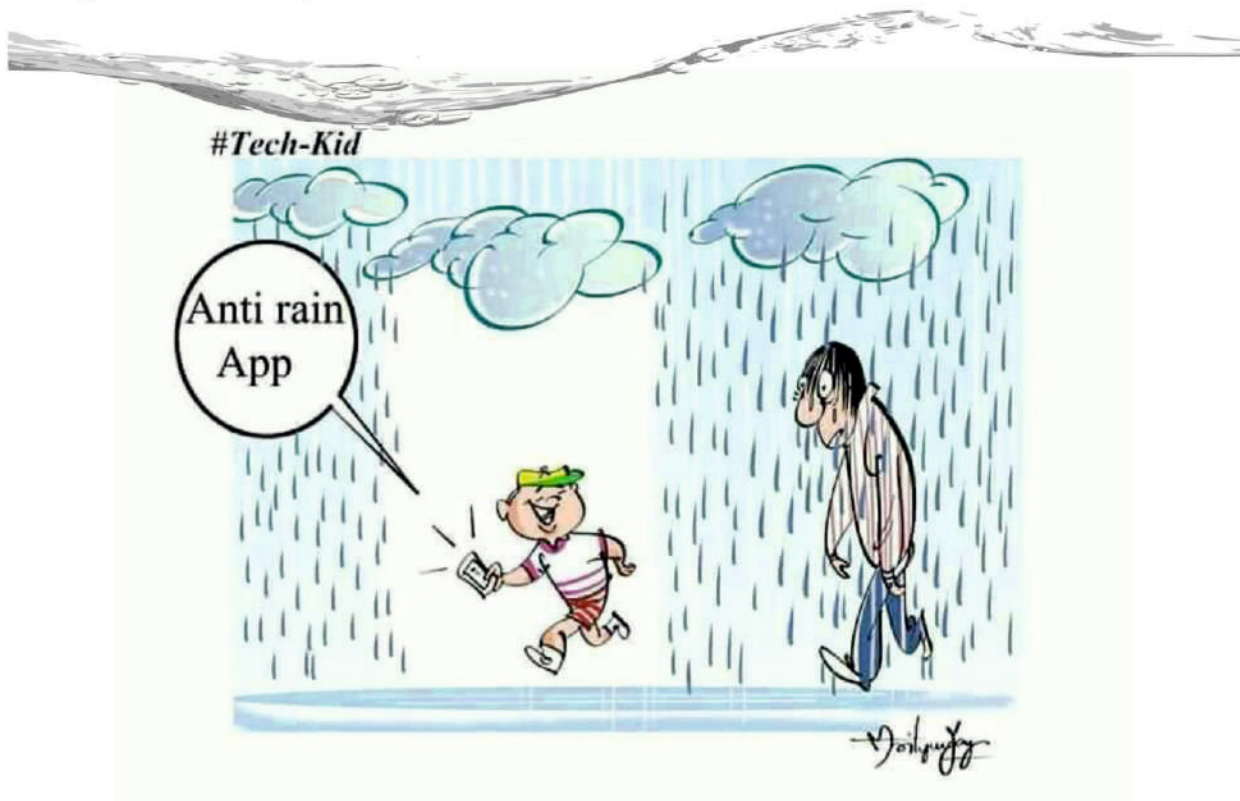


water has a great influence on literature and folk music and it has become a life force that inspires the society. This culture has cultivated deep faith and belief that water is an essential element for life and creation as well as for salvation.

There is a systematic realization of the inseparable relationship between human beings on the emotional, physical, spiritual, practical, cultural and other levels of water resources. As the entire society is involved in the three aspects of conservation, appropriation and protection of water resources, this culture, which has been formed from the inseparable relationship with each other, has remained intact for hundreds of years. But today, increasing industrialization, blind imitation of Western lifestyle and ruined rural culture has created a huge gap in the minds of the people, which has led to the pitiable situation of water resources. This glorious tradition of ours is being ignored due to the recent attitude that new is only good and old is waste. There is a real need to recognize the importance of this tradition by looking at it more critically.

Our water-based society is facing different problems today. Due to various reasons, especially due to population growth and increasing industrialization, water availability is becoming more and more difficult. Water resources are becoming increasingly polluted. The encroachment on these resources due to increasing urbanization will not only lead to the decline of all these water-culture practices and traditions, but it is also feared that all of them will disappear. The whole world is plagued by this problem today. In such a scenario, it is important for our once prosperous and civilized society to take care our water resources as to how they will remain clean and drinkable; but at the same time, the happy future of the country will depend on the proper use of water. The United Nations especially felt the need to preserve water culture as they realized the fundamental principle that 'Water is there, everything is there' and hence 2006 was celebrated as the year of 'Water and Culture'.

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## Governance of wastewater treatment and reuse in India

Wastewater treatment and reuse practices are limited in India despite the known benefits of preventing water resources pollution and contributing to sustainable production and consumption systems. In a study 'Perceived drivers and barriers in the governance of wastewater treatment and reuse in India: Insights from a two-round Delphi study' by Lena Breitenmoser et al the perceived key drivers and barriers to wastewater treatment and reuse governance are identified.

The study published in journal 'Resources, Conservation and Recycling' indicates that the most significant driver for wastewater treatment and water reuse is persistent water scarcity that necessitates diversification to alternative water supplies.

In contrast, the most significant barriers are the lack of enforcement of pollution monitoring and control, the lack of an umbrella directive for integrated water resources management, and insufficient collaboration between responsible governmental organizations, central and state water authorities.

Given the absence of central guidelines, only a few Indian states such as Maharashtra, Gujarat or Punjab have adopted effective governance structures. These states showcase that defined reuse standards can create successful wastewater treatment and reuse practices but require target-based regulations which are enforced and regularly monitored and financing mechanisms for their long-term operation.

The new effluent discharge standards by the National Green Tribunal, the government support programmes, and increasing water scarcity in many parts of India will supposedly drive innovative

wastewater treatment and reuse structures.

The study indicates that efforts are needed to develop technology guiding frameworks following the fit-for-purpose principle and that strengthening institutional and monitoring capacity is crucial to increase confidence in the quality of recovered water resources, create demand, and ultimately safeguard human health and the environment.

Though there are certain policies, laws and programmes by the Central Government and State Governments that endorse wastewater treatment and reuse, the availability of clear guidelines and specific standards with a defined implementation framework for wastewater treatment and reuse is lacking.

There is the need to dovetail existing water and wastewater policies and programmes into a National Water Framework as an umbrella of general principles governing water issues by the Central Government, the State Governments and the local governing bodies. This should lead the way for essential legislation on wastewater governance in the entire country.

Most utilities cannot recover the costs of treatment from the farming sector re-using wastewater for irrigation unless high-value cash crops are cultivated or there is enough government price support. An effective water pricing mechanism is required, together with a circular economy approach to wastewater, to help reduce and/or recover treatment costs.

Besides these, clear target-based regulations, defined national standards of reuse water quality, as well as wastewater safety planning and risk mitigation are imperative interventions for



stepping up the water reuse in India. Core drivers to increase the reuse of wastewater are the increasing unavailability of conventional water sources and the better quality of reclaimed water as a result of compliance with more stringent wastewater standards. Several industries and bulk water users will need to look towards wastewater as an economically viable option to meet their water requirements. Hence, treated wastewater should be cost-competitive compared to alternative options available to industries.

The study shows that policy and regulatory interventions and government support programmes to increase wastewater treatment infrastructure can create successful business models for wastewater treatment and reuse but need effective monitoring, enforcement and follow-up at all governance levels (central, national and local governing bodies).

Recommendations for future governance of wastewater treatment and reuse in India:

- Target-based regulations, defined national reuse standards for treated sewage and effective enforcement strategies need to be developed.
- Policy and guiding frameworks need to establish detailed guidance on sewage treatment and reuse technologies (fit-for-purpose treatment).
- Effective financing mechanisms (funds, taxes, tariffs) that permit sufficient cost-recovery for long-term operation and maintenance of sewage treatment infrastructure should be established, and
- Institutional and monitoring capacity needs to be strengthened and engagement and collaboration of key stakeholders tackled to increase acceptance of waste-recycled products.

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## Interview: 'River Inter-Linking a Pipe Dream

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## Being Sold to Extract National Resources'

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## Interview

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This article was first published on February 27, 2018, and was republished on December 8, 2021, in light of the Union Cabinet's approval for the Ken-Betwa river-linking project.

There is nothing new about the proposed river-interlinking project being pushed by the government, and this 'unnecessary excess' of a project will create more problems than it promises to solve, says environmentalist and water management expert, Ravi Chopra, the director of People's Science Institute, Dehradun and a managing trustee of the Himalaya Foundation, New Delhi.

**Edited excerpts from an interview :** In recent years, the river inter-linking project has been revived. The current government through its various departments is moving ahead with multiple studies and estimates of costs and impacts etc. On a broader scale, what is your take on this idea and is this the best way to manage our rivers?

The whole thing is a joke, honestly. I am not being facetious. This idea was first proposed in the 1960s by an airline pilot, Captain Dastur. He talked of a garland canal, that there should be a string of canals that could take the water from the Ganga to the southern rivers. In the 1960s, we also had a civil engineer, K. L. Rao, a very highly respected name in Indian civil engineering. He, too, pushed the very nebulous concept of a garland canal and it was he who, I think, first used the term inter-linking of

rivers.

You said this whole idea is a joke. Where does this joke start?

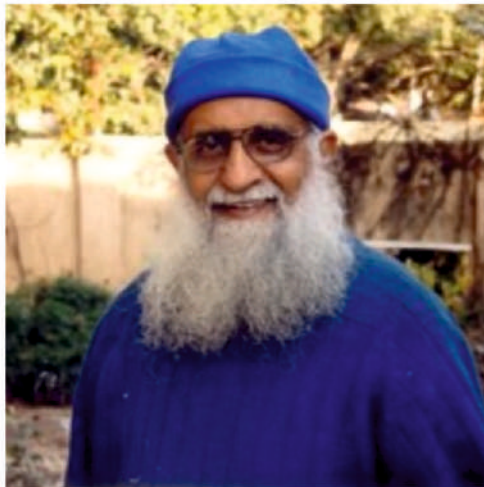
The joke starts with the fact that we already have a natural garland canal and that garland canal is called the Ganga. The Ganga is meant to collect all the waters of the Himalayan rivers and take them to the sea. Unfortunately, we haven't been able to manage this garland canal at all and have made a mess of it.

The second reason I am saying this is a bit of a joke is that the basic premise of the project is that we will

be able to transfer water from the north to the south and from water surplus areas to water deficit areas. Now, northern rivers have lots of water, floods, during monsoons. It is almost exactly the same time when the southern rivers also have lots of water. It is not as if the glaciers are so huge that they keep the northern rivers full of water throughout the year.

To give you a small example [of] the Ganga.

Bhagirathi and Alaknanda join at Devprayag to form the Ganga. The total contribution of glaciers to the annual flow of water at Devprayag is only 27%. The total contribution of glacial melt is only 27%, year long. OK? So the glaciers are not keeping the northern rivers alive. This is another misunderstanding that a lot of people have, ki arey woh toh Himalayan glaciers ki nadiyan hain isi liye woh perennial hain (that these are rivers from the





Himalayan glaciers, that's why they are perennial). [When] the problem of flooding happens, the southern rivers are not ready to receive water [either].

The first river-interlinking that is being operationalised is the Ken-Betwa link and it has also got environmental clearance a few months ago. Could you please explain what are the issues you see with this particular interlinking.

In the current situation, they are talking about the Ken-Betwa link. The People's Science Institute had done a thorough study of the Ken-Betwa link. These are two adjacent (contiguous) basins. Ken is on the east and Betwa is on the west. The year Betwa will have a drought, Ken will also have a drought. And the year Ken will have floods, Betwa will also have floods because they are adjacent watersheds – the same amount of waterfall, same part of the country, so the weather pattern is almost identical. So what is this nonsense about Ken being a surplus basin and Betwa being a deficit basin?

Betwa is a much larger basin than Ken. But [in the case of] Ken, much of its watershed is full of forests, so all this is a part of central India which drains through the Ken. Ken does not have much population, it does not have large cities and it does not have industries, so it has less demand for water. There is a much larger tribal population which does not practice irrigated agriculture. So all those things are creating a lower demand for water at present.

Now, what is your development model for Ken? You don't have any other model for Ken. Tomorrow, Ken is going to be like any other part of the country and when the people of that area reach this level of development as in Betwa today, then they are going to say that we don't have surplus water.

Betwa is the region that goes back to the Bhopal side. Bhopal to Vidisha to Jhansi etc are part of the Betwa basin. Betwa [s basin] has highly irrigated agriculture [area], a lot of soybean farming goes on over there, commercial cropping [etc]. So there is a huge demand for water in the Betwa basin. Therefore, it is said to be deficient. In terms of god-given rainfall, nature-given rainfall,

it's the same [between Betwa and Ken]. So it's the lesser demand in the Ken basin at present that is creating a "surplus" and the joke – the third joke – is that now a report has come out of Madhya Pradesh, a government report, that says that Betwa basin is surplus; so whose numbers do we believe? When we did our analysis, we came to the conclusion that there is almost no difference between the rainfall amounts and patterns in both the basins and Ken has excess water today only because its own demand is low. That's it. By doing this link, you are sowing the seeds for a future conflict of the kind that you see between Tamil Nadu and Karnataka, between Punjab, Haryana and Rajasthan. So you are sowing the seeds of future conflicts.

In terms of the project cost – given the complexity and scale of the project – we have seen many figures. Some people say it is going to be the largest infrastructure project ever undertaken in India. Some sources also say that just the cost itself makes the project almost infeasible. What's your estimate of the cost and what are the factors that we need to consider while estimating the cost?

The actual figure that has often been given in the public domain on the cost of the inter-linking project was Rs 5.56 lakh crore (trillion). Now, I started seeing this figure about 15 years ago and I don't think it's Rs 5.5 lakh crore anymore. By the time the project gets finished, if it ever takes off, and if it is ever implemented, the cost would be in the neighbourhood of Rs 25 lakh crore. Anything of that sort. What I mean is three to five times higher because we know the history of such projects. For example, look at the Narmada Valley Project.

Another factor is that a lot of these cost calculations were done when the land acquisition Bill had not been passed (in parliament). Now if we start paying people for their land as per the current Land Acquisition and Rehabilitation and Resettlement Bill, this figure will become astronomical. A lot of this is very, very fuzzy, garbage that has been spewed out by third-rate engineers working in useless government agencies where you park non-performing engineers. So, I frankly do not see this working out. And, by the



way, this is no longer a boondoggle of a project. The industrial corridor project is much bigger than this. OK? Again, these are pipe dreams.

As concerned citizens, civil society activists and people's scientists, what should be our approach in dealing with an idea like river inter-linking?

We must put forth our point of view and point out the fallacies in this kind of thinking and make people understand that none of us is going to benefit from these kinds of things except for the engineering fraternity, the construction companies, the contractors, the politicians who get their cuts out of this and the bureaucrats. So this is just another scam that is being promoted and I do not see this project going very far.

It is also a misnomer to talk about inter-linking of rivers as something new. It is being talked about as something new because most of us don't know anything about how this country's water is managed. After all, if you look at the Bhakhra dam; it not only has the water of Sutlej but also of Beas and it is done by inter-linking through a tunnel that brings the Beas water into the Bhakhra dam. You have the Sutlej-Yamuna link canal. So these are not new ideas, it is just a pipe dream being sold to the country to extract national resources.

Do you think that's the only agenda behind this project or do the people pushing this project truly believe in this idea?

Well, you would have to be a pretty third-rate engineer to believe in this idea – an absolutely third-rate engineer.

This idea somehow sounds like a BJP favourite. Not to differentiate between the Congress or the BJP, but it was the favourite idea under the (Atal Bihari) Vajpayee's government and is now gathering steam again.

It seems it was gathering steam under Vajpayee also. The first set of basic feasibility studies were done by something called the National Water Development Agency that is a "research" organisation of the Ministry of Water Resources. And that's where they park third-raters.

Today, the problem is that the lobby that stands to gain a lot of money from this project, they are not going to give up the idea easily. So they will revive it at any chance they get. It's a lot of money. Unfortunately, [incidentally] they will also face a lot of resistance from all kinds of forces and each time they will have to buy off the resisters. For example, at one time the Bihar government used to say that we won't give our water. Now, Bihar doesn't say with gusto that we won't give our water.

Arif Hussain is the director of Coalition for a Democratic India, a non-profit, based in Cambridge, Massachusetts. This interview is a part of CDI knowledge series "Food, Finance and Data".

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## How does Water get Polluted :



Water is polluted both by nature and humans. We get fresh water due to rains. It is the water cycle which does this magic. Due to heat, the sea water evaporates, forming clouds of vapour, which are turned to land due to the flow of wind which ultimately result into rains. Rain water is in pure form. But after falling on the ground, the rain water travels from the high lands to the plain grounds, it keeps coming in contact with various objects. Water keeps accepting good and equally bad things. This can lead to pollution. Not only that, when it seeps in the ground, it passes through soil, loam soil and rocks. They contains traces of minerals, salts and chemicals. In Bangladesh and also in our country, some regions like Konkan, arsenic is found in small quantity in the soil. Arsenic is a toxic chemical. So when the water is taken out of the ground and used for drinking without purifying it, it goes in the human body and he has to suffer the consequences.

Like Nature, human beings are also responsible for increasing water pollution. Water pollution has also been exacerbated by domestic sewage, chemical fertilizers and pesticides used in agriculture and water containing a mixture of chemicals and minerals from factories. We get water through three sources namely, rivers, lakes and the ground. Of these the river water flows and oxygenated and is mostly in pure forms. But the water in the lakes is more or less stagnant. Stagnant water gets little oxygen and therefore lake water is not that pure. Same is the case with the ground water. It is really difficult or rather impossible to remove pollutants from the ground water.

In our country, sewage generated in homes, farms and factories is discharged into the drains without being treated. These runnels flow into the rivers. As a result, all the rivers in our country are polluted. Bathing in some of the rivers is really risky as this may have adverse effects on the body. As it is, water resources are said to be scarce. By polluting pure water further, are we not reducing these resources still further?



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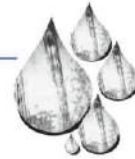
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