WASH Knowledge Update

July 2018

Issue 2

Second Issue | For Limited Circulation

Photo Credit : WaterAid/Prashanth Vishwanathan

Welcome Note

Welcome to the second issue of WASH Knowledge Update. In this issue we have tried to present an even wider diversity of reports, news and views. We hope that by the time we complete the first year, we will be able together to generate a rich source material of news, views and reports which will be useful in our work.

This issue will be appearing at a time when the scorching months of water scarcity May and June are just behind us. So there is an emphasis on reports from some of the known water scarcity areas like Bundelkhand and Rajasthan. We have field reports as well as articles on this. Then in the media review sections we have coverage of other areas as well. We have tried to cover both rural and urban areas.

There is an effort to have some reports on marginalized communities with reference to their water and sanitation needs.

The contributions from WASH Forum members are more valuable as they give expert views or views close to grassroots. We will like to have more of these as more WASH members get into the habit of writing for this update and , what is more, also remember to send their contribution before the stipulated last date !

It is also nice to know that contributions on specific organizations and their work have started coming in. These will help us to know each other better.

I take this opportunity to thank all those friends who have contributed to the diversity of this issue and have helped and encouraged with their comments and suggestions. We've started a page on comments and suggestions and hope that readers will continue to find the time to send their comments and suggestions. - BD

In This Issue

Comments and Suggestions

- Thanks a ton for sharing very rich documents.
  - **Manish Kumar, State-Coordinator (U.P.), Jal Jan Jodo Abhiyan**
- Wonderful initiative. It is going to fill the gap of information on ground reality
  - **Param Kaur, Director, Ashray Adhikar Abhiyan**
- I have forwarded the WASH newsletter to Ekta Parishad Circle.
  - **P. V. Rajagopal, Ekta Parishad**
- This is a good initiative.
  - **Abhijit Bhattacharjee, U.K.**
- Thank you for this excellent round-up of news in the WASH sector.
  I have three comments/suggestions, though:

  1. Celebrating the toilet as the answer to open defecation is self-defeating because the toilet does not do anything to speed up the process of decomposition of the excreta. Also there is, in fact, no hard evidence that open defecation causes disease.

  2. Celebrating 'waste as wealth' and the enormous contributions of waste pickers and fishermen etc diverts attention from the basic principle of reduction; and unless reduction of waste takes place in a massive way at the level of production and marketing itself, it will never be managed properly.

  3. Similarly, the pollution of all sources of water, surface and underground, is rooted in the manner in which water is used and degraded and then returned to nature: unless a greater understanding of this cycle develops and is internalised there will be no focus on demand side management and how to increase supply will remain the misleading challenge.

  I hope your Newsletter will deal with these three issues with more depth in future issues.

  Best wishes
  - **Dunu Roy**
- Thanks for sharing this. I am so happy to see that the idea has been translated into action and all my sincere appreciation for presenting it. Thanks for putting together such interestig material and articles. This effort will be valued by everyone connected with WASH. However there is more of course of Delhi and South is missing.
  - **Ramisetty Murali, FANSA**

Reply -

*Kindly see the news section in the new issue Murali Ji where the Southern region is well covered. - **BD***

- Congratulation to all who have made this update possible.
  - **Dinesh Abrol**
- Thank you for all the hard work you have put into this issue.
  - **Kamini Prakash, WSSCCC**
- Congratulation for this newsletter. The design is very attractive. I have surfed through all pages, quality material is covered. I liked especially the news section which opens a window on the world of water.
  - **Dipak Dholakia**
- Congratulation. I am sure this will be interesting, informative and analytical.
  - **Indira Pancholi**
- That's an excellent start. Congratulations.
  - **Amita Bhaduri**
- Thank you so much for sharing the newsletter. Really happy that finally all the discussions have resulted in reality.
  - **Nafisa Utthan**

Impact of Mining on Water Resources

A Report from Sikar-Jaipur-Jhunjhunu mining belt

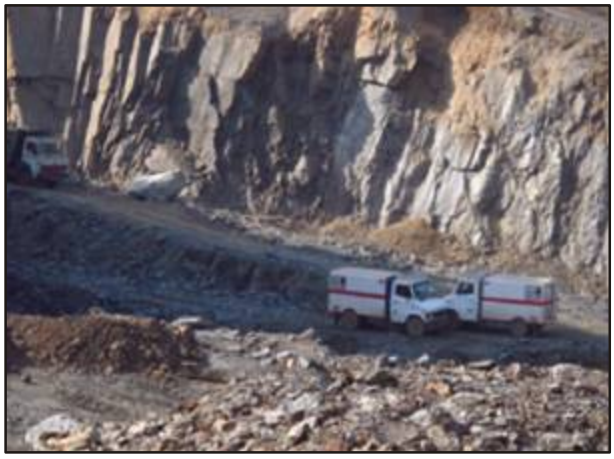
● Bharat Dogra

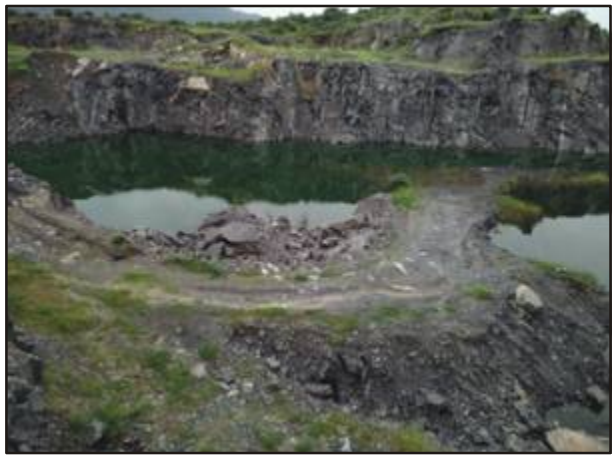
People and ecology of about 150 villages in the Sikar-Jaipur-Jhunjhunu mining belt are being devastated by indiscriminate stone mining and stone crushing units. One such village is Mahava (Neem ka Thana block of Sikar district). Peope here say that mining has been started very close to a waterbody and as a result of this the waterbody is getting filled up and dying.

At a little distance from this village we saw a dry belt about which local people said that this was the place where Kaaswati river flowed. They described this river as the life-line of this area. They said that indiscriminate mining is the main cause of the disappearance of this river.

In Shuklaavas village (Jaipur district)people said in a group discussion that due to the impact of indiscriminate mining and the excessive use of dynamite for blasting water sources are getting depleted and polluted. They said that several diseases including bone and tooth ailments are related to this.

Kailash Meena , a leading social activist of the region said that most of this area is already suffering from low water table and indiscriminate mining is worsening the problem every year. He said that this area has good forests bur the mining and crushing units are destroying greenery which also has an adverse impact on water conservation.





REPORT

Consultation on Sanitation Workers Safety

A consultation was held at NIUA in April 2018 on Sanitation Workers safety, that broadly falls under the popular heading of "manual scavenging" but is not restricted to cleaning of septic tanks alone. Since "manual scavenging" is legislated as a banned activity with penalties, city and town officials deny that it exists. There have been several incidents of deaths and injury of workers engaged in cleaning not only septic tank toilets but also sewers.

The consultation had a presentation made by Delhi Sanitation Workers Union represented by Ms. Hemlata and Mr. Ashok and their colleagues alongwith Ms. Sowmyaa Bhardwaj of PRAXIS.

The consultation brought about many hard hitting observations and facts that are usually not addressed in popular reporting on this issue. For example how many workers are engaged in the work on manual cleaning of sewers and septic tanks in Delhi and other cities and towns of India? How is the network sewers cleaned, how is work distributed across divisions and zones, what machines are used and what is their status? How is the manual cleaning work organised in terms of contracting, what about Municipal laws for workers safety and other related issues of training and their health safety?

Th consultation brought out that there could be anywhere from 20 to 30,000 workers engaged in manual cleaning of sewers and septic tanks in Delhi or the NCR. The Union representatives claimed that there were very few deaths in the manual sewer and septage cleaning work prior to the year 2000. More deaths of workers have been reporting since the year 2000 when the number of sanitation workers engaged full time employees of Delhi Jal Board has been falling with no fresh recruitments. That this number of workers has fallen from 7000 to 700. For the 32 Sanitary Divisions of DJB of Delhi, you need to employ approx. 300 workers per Division. While people complain that workers are not doing their job, more and more workers are dying because of poor working conditions and lack of training.

They explained that deaths during sewer cleaning and septic tank emptying happen manual cleaning is still required(there are times when someone has to go in to clear a blockage and our sewer lines are not built to standard size, for allowing mechanical cleaning always, and because there are no employees to guide the new contractual employees on how to do the manual cleaning.

What about the machines? The Union explained that machines were procured and functioned well till the year 2000. Now with a ban on fresh recruitment, the machines have also been lying unused and have rusted.

There is no survey or formal estimate and since these are contractual employees on short informal contracts, there is no formal record of their work. While drains, sewers and septic tanks are being cleaned in Delhi, there is no Register or Formal Record kept even at the DJB level of how many contract workers are employed for this work every month or in a year for how many days.

Then there are many layers of contracting, for a contract worker. Its often the male worker who is hired for manual cleaning. And this worker does not know who has contracted him, own-

ing to several sub contractors and not formal written contracts. The whole process of hiring and employment works on the fear and insecurity of workers, fearing a loss of their employment. People take on this work as a last resort and try to move on to a better job as soon as they can, there is shame and stigma. It is for all these reasons that it is difficult to identify workers engaged in manual cleaning, to make them come in front of camera or give oral statements for the work that they do, their working conditions, health safety, etc.

The consultation deliberated on what needs to be done and came up with the following;

1. Need to understand city or ward level challenges of manual cleaning of drains, sewers and septic tanks. The numbers involved, who are these people.
2. Need to understand the institutional systems of Water and Sanitation Boards hiring of workers on contracts.
3. Understanding Court Judgements and Orders : manual cleaning, on workers safety and on the Manual Scavenging Act. Why they have failed to get implemented.
4. To what extent can Technology address/ solve the crisis of manual cleaning and workers safety? What other measures are needed?
5. How to collaborate and work on this issue with a range of stakeholders?

Protect Water Sources from Contamination by Hurriedly Constructed Toilets

In recent times there has been a heavy rush for construction of toilets in India. There is a lot of pressure to achieve ambitious targets set up for this, and many officials are keen to be ahead of others in achieving these targets. In the middle of this pressure and hurry, however, there is also a risk that the required designs may not be followed leading to increased risk of groundwater and drinking water contamination.

This risk is the highest in high groundwater level areas of country. If the gap between base of soak pit or leach pit toilets and the groundwater table is too narrow, then this risk is clearly present, particularly in the case of one leach pit (instead of two) toilets.

In terms of location, in leach pit toilets again a risk appears if the location is too close to hand pumps or wells.

In a hurry to achieve ambitious targets in a short time, some of the precautions relating to design and location may not be followed leading to increased risk of contamination of water and water borne diseases.

As access to proper medicare is rare in remote villages, this can have very tragic consequences in remote village.

Some reports of violation of design norms in the drive for toilet construction have already appeared in media.

To prevent some tragic possibilities, all precautions of design and location must be taken in future. A safety audit of all risk-prone areas should be taken up so that remedial action to prevent contamination of water can be taken up as early as possible.-BD in EPW

Jalabandhu – Force on the fore!

● Bikash Kumar Pati

When men and women from the communities come together to address water, sanitation, and hygiene issues, change is bound to happen! In the past, a number of community level groups have been formed, such as the Village Water and Sanitation Committee (VWSC). However, due to its very genesis in Odisha, these committees are not very effective. As there has been uncertainty around formation and functioning of VWSCs, these have either not been formed or are not functioning very well.

Nuapada district is Odisha deals with extreme fluoride contamination of water. A majority of the residents of this region suffer from dental and skeletal fluorosis.Consequently, to addressthis increasing problem, WaterAid India experimented a community-based institution called Jalabandhu (friends of water).

The core purpose to form Jalabandhu Committees was to create a structuredapproach and improve the capacity of its members. As a part of the committee, the members are endowed with knowledge so as toassess thesituation, formulate plans appropriately, and pursue the set tasks in a constructive, purposeful and systematic manner to improve WASH situation.

Interestingly, the functioning of these committees lies on the foundation of involving all the village members who collect water from a water source or the other. This level one, i.e. the user committee ensures participation of each household, with a mandate of at least 50 percent women. Theuser committee nominates two representatives (both men and women) to form a village level JalabandhuCommittee. The Village Jalabandhu structures are federated as Jalabandhu at GP, Block and District levels.

Currently 104 villages, 24 GPs, two blocks and one district Jalabandhu are actively working in Nuapada District. The Jalabandhucommittees include VWSC members (if formed), Panchayat members and community representatives.

Within a short span of time, Jalabandhus have been effective in stimulating community actions around WASH issues. Their actions resulted in safe alternative drinking water sources in 27 communities, raising funds for operation and maintenance of water sources in 104 villages, renovation of water sources in 63 communities, and streamlining water quality testing system in 104 villages during the last one year. This institution has also improved coordination and association with the government departments.

According to Mr. Kishore Chandra Nayak, President of Block levelJalabandhu and Secretary of District Jalabandhu,"One of the key agenda of JalabandhuCommitteeis to advocate for identification and rehabilitation for fluorosis patients by the government. For this, we have had meetings and interfaces with officials responsible for WASH services at different levels. Finally, we influenced theCollector ofNuapada for recognising patients with severe skeletal fluorosis as person with disability (PwD) and issue them certificates. This makesskeletal fluorosis patients eligible to avail various social security schemes meant of PwDs."Furthermore,the District Administration in collaboration with WaterAid India and its partner, Regional Centre for Development Cooperation (RCDC), started conducting health camps and issued PwD certificate to the patients. The first camp in March 2018 issued PwD certificate to 168 skeletal fluorosis patients. Out of them, 20 PwDs nowhave accessible toilets at home under Swachh Bharat Mission (SBM) using additional funds from the Panchayat. There are models to emulate elsewhere in Nuapada for PwDs, including skeletal fluorosis patients."The next action of Jalabandhu is to streamline sample collection system for early detection (pre-manifestation) of fluorosis though district level laboratory," added Nayak.

Initially formed in 30 villages, covering five GPs in 2014, the structure has been replicated to 104 villages in 24 GPs. Block and district level Jalabandhu Committees have also been strengthened substantially to raise issues, not only confined to their geography, but also for the entire district. With still a long way to go, the Jalabandhu Committees – force on the fore – are ready to bring about a positive change in the lives of thousands of fluoride-affected people in the district.

●

(The writer is Programme Coordinator, WaterAid India)

Water : Media Review

W-1

Death by slow poisoning

● Priyanka Pulla

The Hindu, Saturday, 19 May 2018

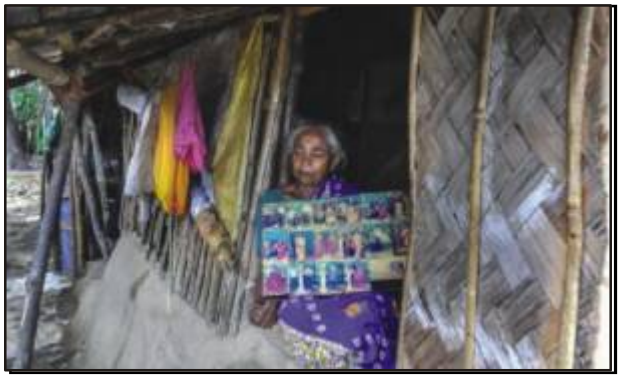


Photo : K. R. Deepak

Madhusudankati is a lush green agricultural village about 14 km from the border with Bangladesh and deep inside India's arsenic territory. About 15 years ago, scientists discovered that the shallow groundwater here had high levels of the mineral: up to 1,000 micrograms (mcg) per litre in places. The World Health Organisation's (WHO) prescribed safe level is 10 mcg per litre. When such water is consumed for years, either directly or through the food chain, the mineral damages organs like the skin, kidneys and lungs.

The most visible symptom in early years is a classic blotchy pattern on the skin, a condition called raindrop pigmentation. If people showing such pigmentation don't switch to safer water, they develop hyperkeratosis — dark crusts on their palms and soles, which can get infected and make it painful to work. Eventually, the skin can turn cancerous. Simultaneously, arsenic can destroy the kidneys and liver tissue, cause conjunctivitis and affect the lungs, just as heavy smoking does. There are few organs that arsenic spares.

Today, an estimated 10 million people in nine districts in West Bengal drink arsenic-laden groundwater. It is the worst worldwide case of mass poisoning alongside Bangladesh, which has 40 million people at risk. When West Bengal's problem first attracted international attention in 1995, a researcher from the University of Colorado compared its scale with the Chernobyl disaster. Today, we know it is worse. But despite the grave warnings from international bodies like the WHO, the West Bengal government has moved excruciatingly slowly to tackle the crisis. A critical shortcoming in its efforts was the delay in realising that mitigation is a sociological challenge, not just a technological one. This is why, even though multiple technologies to filter arsenic from groundwater are there, awareness of arsenic's ill-effects remains low. So, people continue drinking toxic water, even when alternatives exist.

Read More

http://www.thehindu.com/sci-tech/health/death-by-slow-poisoning/article23930645.ece

W-2

Strangling the source of Narmada

● Gyatri Jayaraman

Hindustan Times, 24 April 2018

How did Amarkantak a town once lush with perennial rivers, streams, tributaries, wetlands, even swamps, at an elevation of 1,048m, come to be so dry as to now fear forest fires?

Several factors, some of neglect and wilful destruction, have contributed to its drying out, namely: mining, impact to the bauxite substrata, deforestation, construction, sand mining and rampant water pollution. Everything that dries up the source contributes.

Read More

https://www.hindustantimes.com/india-news/narmada-river-once-had-7-sources-of-water-feeding-into-it-now-only-one-remains/story-QAGlBPcsQTPNm8UXvQvbiP.html

W-3

Rivers, the soul of Punjab, are calling!

● Gunbir Singh

The Tribune, 23 May 2018

Tribune Photos

We Punjabis lose the right to call ourselves by the name if we cannot keep the rivers of Punjab pristine. Industrial pollutants, untreated municipal wastes and farm chemical runoffs are an unholy cocktail being added to our river waters every single day. And yet our regulatory procrastination knows no end.

In singular instances, we lose millions of aquatic lives, cause irreparable damage to our ecosystems, and put at risk innumerable lives. These are the waters that irrigate our fields, provide food for the population and quench the thirst of humanity inside the state and beyond.

The release of molasses by the distiller at Kiri Afghana village, even if accidental, only confirms its access to the river flows. Further, its history of toxic waste release is well known in the area, and so is the browbeating of those who poke concern. More worrisome is the fact that hundreds of such access points, into the rivers and waterways of Punjab, exist right under the noses of the relevant authorities, which continue to run havoc on ecology.

This present incident has not just liquidated the aquatic populations of the area, but also depleted the water of oxygen, raised the PH levels and added a massive dose of toxins.

Read More

http://www.tribuneindia.com/news/comment/rivers-the-soul-of-punjab-are-calling/593345.html

W-4

Cancer in Ghaggar's lap

● Gagan K Teja

The Tribune, 1 April 2018

Photo: Rajesh Sachar

This is the story of villagers living along the Ghaggar, which possibly all Punjab government officials would deny:

About two years back, the world of Jito Devi (43) came crumbling down. Her 19-year-old son was diagnosed with blood cancer. For six months, PGI Chandigarh doctors made every possible attempt to save him. The family took loans for his treatment, but could not save their only son. Today, they have put their one-acre land on sale to repay the loan.

Kulwant Kaur (40) was detected with cancer 11 years back. Her two sons were kids then. Her husband Labh Singh left no stone unturned and got her treated from PGI Chandigarh. In the process the family sold their one-and-a-half acres for her treatment. Then, about two years back, Labh Singh suffered cardiac arrest and died. Though Kulwant is much better now, she has to visit PGI every three months for investigation. Kulwant's elder son works as a daily wager.

Arshali Devi (60) had cancer. She died after sev-

eral trips to quacks. The family — her husband, three sons and two daughters — and other villagers blame toxins-laden river for dozens of deaths. "The worst part is no government has ever tried to set things right about the Ghaggar," says a villager.

With over 100 deaths reported in the past few years from these villages located alongside the river, one word every villager dreads is: cancer.

Dedhna village of Patiala-Patran road appears the worst affected where sarpanch Sunita Rani shows a list of over 50 cancer deaths in a span of almost a decade. A dozen more are undergoing treatment for cancer. The villagers blame the underground water. Villagers recall that in 2013 an international team of experts had visited the village and collected water samples. "We were told that water toxicity was the main culprit," says a villager.

Read More

http://www.tribuneindia.com/news/sunday-special/people/cancer-in-ghaggar-s-lap/566778.html

W-5

Bad water on wheels

● Pankaj Kumar

Governance Now, 31 March, 2018

G N Photo

While train accidents get much attention, there's something else that should equally be attended to: the railway's drinking water supply, which could well have caused many more deaths than train accidents.

Indian Railways has been routinely receiving complaints about the quality of water available on trains. In 1994, the Railway Passenger Amenities Committee received many complaints regarding water quality during its visits to various railway zones. There's a letter sent by the Railway Board to all zonal railways in May 1994 that says: "The quality of water being supplied to the stations and colonies was far from satisfactory and a very large number of samples collected showed unsatisfactory bacteriological results." In 2012, the Comptroller and Auditor General of India (CAG) pointed out a high sample failure rate and said: "The high rate of unfit water samples was indicative of deficiencies in the remedial measures taken by the railway administration."

Read More

http://www.governancenow.com/news/regular-story/bad-water-on-wheels

W-6

Clean water organisms die as Yamuna remains polluted as ever: Study

● Joydeep Thakur

Hindustan Times (Delhi)16 Apr 2018

New Delhi: For every three kilometres the Yamuna travels downstream in Delhi, at least one species of microorganism, which thrives in clean and unpolluted waters vanishes, researchers from the Delhi University have found.

"At least 17 species of ciliates — a group of single celled animals that form an important link

in the food chain and helps to purify water — were found missing in the 45-km stretch of the river between Cullakpur (Palla) in north Delhi where the Yamuna enters the city and Okhla," said Komal Kamra, associate professor of zoology at SGTB Khalsa College, who led the research team.

Read More

https://www.pressreader.com/india/hindustan-times-delhi/20180416/281638190793047

W-7

A river in distress

● Vidya Venkat
The Hindu, 12 May 2018

Te Sangam-era Tamil poetic work, Pattinappaalai , describes the Cauvery as an eternal river. "Vaan poithinam thaan poiyya malai kalaya kadarkaaveri ponal parandhu pon kolikkum" goes a line. Loosely translated, it means that even in the hot summer months, when the rain gods do not shower their mercy, the Cauvery, emerging from the hills of Coorg (Kodagu), continues to flow, helping to harvest gold from the land.
But today, anyone touring the land from Tiruchi to Poompuhar in Tamil Nadu, where an ancient Tamil civilisation flourished, will find that the river is now a sea of sand, with rocks and bushes dotting the dry river bed. It is only during the monsoon season that any water can be seen flowing. Ask any farmer in the Cauvery delta in Tamil Nadu and he will tell you that the river has water only three to four months in a year.

For the thousands of tourists and pilgrims climbing the 300 steps to the hilltop at Talacauvery, the Cauvery's source in Kodagu, Karnataka, no mystical spout awaits. It is here that the river is believed to emerge as a perennial fount, and is worshipped as Kaveriamma by the Kodavas. But on top of the Brahmagiri Hills in Kodagu, only mud and stones greet the eye. In the temple at the bottom of the hill, the priest says that it is only during October, after the monsoon is over, that you get to see a water spout under the rocks.

Read More

http://www.thehindu.com/news/national/a-river-in-distress/article23856924.ece

W-8

Wells and Well-being in South India

Gender Dimensions of Groundwater Dependence

● Divya Susan Solomon, Nitya Rao

EPW, 28 April 2018

Despite the precarious stste of groundwater in Tamil Nadu, there remains no tangible implementation of regulation on groundwater usagae. A Groundwater Regulation Bill that has been on the anvil for the setting up of the Tamil Nadu Groundwater Authority. In 2013, the act was repealed, and no further headway has been made in this regard. The lack of regulation has abetted the exploitation of groundwater in the state (Moench et al 2012; Palanisami et al 2014). Communal water sources in the region, such as traditional tanks and farm ponds, have been neglected, leaving farmers with a lack of alternate viable water sources. With the growing threat to the resource from climate change and other development variables, the need for properly enforced regulation ha become critical.

Although our entry point is groundwater, our analysis has allowed us to explore the complexities of decision-making at the household level, where men and women hold gendered interests in resource management through their distinctive roles, responsibilities, and livelihood stakes. These vary with class and caste positions, with women in smallholder households, mainly SC and ST, often bearing the brunt of growing indebtedness, higher work burdens, and less nutritive food. Although groundwater is "multi-use" water, its epistemic roots lie in the liveli-

hood sphere. This has allowed patriarchal norms and practices from the male-dominated agrarian space to be carried forward into partisan decision rubrics in the domestic sphere. The experiences of women-headed households emphasise the key gendered relational aspects of groundwater usage. Women continue to require the support of male family members to operationalise their usage of groundwater, pointing to the persistence of disadvantage confronted by women in resource access, use, and control in the agrarian sphere.

Read More

http://www.assar.uct.ac.za/sites/default/files/image_tool/images/138/Publications/SA_LIII_17_280418_RWS_Divya_Susan_Solomon.pdf

W-9

Why Shimla is thirsty this tourist season

- Ashwani Sharma, Shimla

Indian Express, 29 May 2018

Himachal Pradesh High Court Monday gave the state government and Shimla Municipal Corporation 24 hours to explain the unprecedented shortage of water that has crippled North India's most visited hill station for the past eight days. Acting Chief Justice Sanjay Karol repeatedly asked the government whether the city's water resources were sufficient to cater to its ever-growing population.

Shimla has witnessed extraordinary scenes this past week — on Sunday night, residents frustrated after a daylong struggle to fill buckets from municipal corporation tankers, tried to march to the residence of Chief Minister Jai Ram Thakur, who described the crisis as "really, really bad". Protest dharnas and rallies have been held, and pictures of people with buckets in long queues have gone viral on the Internet.

Read More

http://indianexpress.com/article/explained/why-shimla-is-thirsty-this-tourist-season-water-shortage-5194799/

W-10

Rastey Mein Gayab Ho Jata Hai 40 Fisdi Pani

- Santosh Kumar, New Delhi

Amar Ujala, 21 April 2018

This report points that leakage and illegal diversion of water leaks to loss of 40% water in Delhi water supply network.

Read More

http://epaperimg1.amarujala.com/2018/04/21/dl/11/hdimage.jpg

W-11

Sukhey Aur Palayan Ka Sabse Bada Udharan Hai Yeh Kshetra

- Pankaj Chaturdevi, New Delhi

Hindustan, 21May 2018

This report points out that Tikamgargh (Bundelkhand region, Madhya Pradesh) was once very rich in water tanks, but neglect led to water shortage and deprivation.

W-12

142 Kilometer Door Se Le Aaye Paani, Yanha Afsaro Ke Kuprabandhan Se Shehar Pyasa

- Patrika News Network, Bhilwara

Rajasthan Patrika, 12 April 2018

This report points out that in Bhilwara district (Rajasthan) how a Rs. 1600 crore scheme to fetch water from a distance of 142 kms. couldn't succeed in bringing relief to thirsty people due to mismanagement.

Union Government and WASH sector performance during 2014-18: A Mixed Bag

● Nirma Bora and Avinash Kumar

In his maiden speech at the UN General Assembly session in New York in September 2014, PM Narendra Modi iterated his concerns for sanitation and equitable distribution of resources globally and expressed his government's commitment to work towards it.

" When we think of the scale of want in the world - 2.5 billion people without access to basic sanitation; 1.3 billion people without access to electricity; or 1.1 billion people without access to drinking water, we need a more comprehensive and concerted direct international action. In India, the most important aspects of my development agenda are precisely to focus on these issues."

The Government, again,was an active participant in securing inclusive growth by playing a decisive role in shaping the Sustainable Development Goals (SDGs) in September 2015 and voicing the now much popular catchword"sab kasaath, sab kavikas". Subsequently, the country's national development goals have been mirrored in the SDGs. Even the launch ofinitiatives like Swachh Bharat Mission, Smart cities, AMRUT, are reflective of India's commitment to the SDG Agenda.

While the Swachh Bharat Mission (SBM)launched on 2 October, 2014, is government's flagship programme to achieve universal sanitation coverage and eradicate open defecation by 2019, the Atal Mission for Rejuvenation and Urban Transformation (AMRUT), launched in June 2015, aims to establish infrastructure that could ensure adequate robust sewage networks and water supply for urban transformation. To reach the goal of increasing coverage of sustainable piped water supply, the National Rural Drinking Water Programme (NRDWP) has been restructured. WASHinitiatives in Schools are guided by the SarvaShikshaAbhiyan (SSA) and RashtriyaMadhyamikShikshaAbhiyan (RMSA) of the Ministry of Human Resources Development and while WASH in health care facilities are taken care under the Kayakalpas well as SwachhSwasthSarvatra schemes introduced by the Ministry of Health and Family Welfare respectively.

Progress under Sanitation

The SBM is the revampedversion of the Nirmal BharatAbhiyan, and goes beyond the goal of eradicating the practice of open defecation to include other components like providing for water availability, including for storing, handwashing and cleaning of toilets, and achieve 100 percent scientific management of solid waste by 2 October 2019.

Dynamic data at the union government levelas of showsthat since the launch of Swachh Bharat Mission, the number of people in rural India practicing open defecation has come down from 550 million to 320 million.16 states (Arunachal Pradesh, Assam,Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Kerala, Maharashtra, Meghalaya, Mizoram, Punjab, Rajasthan, Sikkim, Tamil Nadu,Uttarakhand, West Bengal) and 368 districts have become Open Defecation Free (ODF) as on 19 April 2018.

Table 1:

Swachh Bharat Mission: Overview of Performance

Targeted for 2019	Achieved till April 2018	Target left to be achieved in 1.5 years (per cent)
IHHL to be constructed under BM (rural)*		
11.11 crore	6.95 crore	37.43
IHHL to be constructed under SBM (urban)*		
104.12 lakhs	46.36 lakhs	55.47
Urban Wards for door to door waste collection (urban)*		
81000	51734	36.13
Waste Processing into compost or energy under SBM (urban)#		
100 per cent	23.73 per cent	76.27
Open Defecation Free states /UT under SBM (rural)*		
35	16	19
Open Defecation Free Citiesunder SBM (urban)*		
4041	2029	2012

Sources: PBI , SBM- Urban , MHUA

*Data as on 19 April 2018

Data as on December 2017

A latest assessment of the progress of the Swachh Bharat Mission Gramin (SBM-G),called National Annual Rural Sanitation Survey (NARSS)2017-18, carried out by an Independent Verification Agency (IVA) under the World Bank supported project also directs toward the progressive trends analysed under the Mission.The survey findings reveal that 77 percent of the surveyed households have access to toilets while 93.4per cent of the households who have access to a toilet, use it. 70per cent of the villages surveyed found to have minimal litter and minimal stagnant water. The NARSS also re-confirmed the Open Defecation Free (ODF) status of 95.6per cent of villages which were previously declared and verified as ODF by various districts/states.

Progress under access to safe water

With sanitation being the priority of the government, water seems to be left behind. The 'right to water' and the 'right to sanitation' are distinct but integrated rights and must be addressed as a package. Therefore, access to safe water supply is a pre-requisite which is equally essential as safe sanitation practices.

This Ministry under centrally sponsored scheme National Rural Drinking Water Programme (NRDWP) provides drinking water supply in rural areas only and has even chalked out a Strategic Plan for the rural drinking water sector for the period 2011-2022. As per this, by 2022, the goal is to ensure at least 90 per cent of rural households are providedwith piped water supply; and less than 10 per cent use hand pumps or other safe and adequateprivate water sources.

As reported by the IMIS of MDWS, as on 07.08.2017, 94.38 per cent of rural population have access to safedrinking water .However, it is important to note that rural household havingaccess to piped water supply (PWS) connection, receiving more than 55 lpcd, stands at a meagre 16.6 per cent as ofApril 2017, which is only a marginal increase if compared to the from 12 per cent in April 2014. Given the target set by the current government under the National Rural Drinking Water Programme, the rural household level with access to piped wa-

ter supply with household connection should have been at least 35% by 2017, wherein it is lagging behind by 50% of the targets.

Progress under hygiene

The government of India has important initiatives on hygiene in the context of health care and nutrition. In the case of health care, the Swachhta Guidelines and the Kayakalp awards (by the Ministry of Health and Family Welfare) have played a role in enabling health care facilities at all levels (from PHCs to district hospitals) to assess their water, sanitation and hygiene facilities, and plan for improvements. The SwachhSwasthaSarvatra, an inter-ministerial joint initiative between the Ministry of Drinking Water and Sanitation and the Ministry of Health and Family Welfare, aims to further catalyse improvements in blocks and districts that are open defecation free. This initiative is indicative of an important thought process whereby the focus is not just on curative services, but also on preventative and health promotion actions related to WASH.

A baseline of 217 healthcare facilities (HCF) conducted byWaterAid India in its operational areas across 10 states, in 2017, revealed that only112 HCFs had toilets while 105 had handwashing facilities available.This indicates a scope for improvement and reference can be made to the KAYAKALPSwachhta guidelines for health facilitieslaunched inMay 2015 to help HCFs to meet the WASH standards.

WASH budgets

The central government allocation to SBM-G for the five year period from 2014-15 to 2018-19 has been estimated to be Rs 1,00,447 crore. Of this, 48% of the funds are still left to be released before October 2019. The disconcerting gap between the resources and its utilisation reflects towards many unaddressed areas under the scheme (refer to Graph 1).

Even the amount spent on Information, Education and Communication (IEC) activities dropped from 4 per cent to in FY 2014-15 to 1%of the total expenditure till Feb in FY 2015-16which has been far below the recommended 8 per cent of the total expenses.

Beside the unspent funds, another notable trend is the shifting priorities of the Ministry towards providing sanitation facilities in rural areas and mobilising behavioural change. However, this has translated into a decrease in the share of allocation towards drinking water (from 87% in 2009-10 to 31% in 2018-19). In the same period, the share of allocation to rural sanitation has increased from 13% to 69%.

Challenges under WASH:

Challenges are certainly not over as sanitation practices needs to be strengthened and made sustainable. The NARSS 2017-18 analyses brings to light a weak solid-liquid waste management system and piped water supply in rural areas and this area could now be enhanced at the same pace as the construction of toilets. Even states that have achieved Open defecation free status, like Himachal Pradesh, has 25 percent households with IHHL but without access to water within the household premises. Likewise, Swachh Bharat Mission (both Urban and rural) faces a humongous challenge in effectively managing the huge quantity of waste generated in cities and villages with 35 percent of the target left to be achieved in door-to-door collection of garbage in urban area and 76 per cent for scientific management of solid waste (converting waste into compost or energy).

Moreover, institutional aspects like the toilets being low-cost, terrain specific, having acceptable technologies and designs, user-friendly (children, women, elderly, transgender and differently abled) are other challenges not often captured in quantitative surveys like NARSS.

Operation and maintenance components, like lack of hygiene and sanitation in toilets and absence of handwashing facility,also acts as a deterrent in using a toilet. Another aspect that is side lined under SBM is the inclusion of vulnerable households and other equity considerations. Fewer vulnerable households (SC, ST, regional minority or Antyodaya) have sustainably safe

technologies or have had access to information or have received the incentive (refer to Box 1). Provisions for differently abled people seem to be equally lacking.

School WASH, is another complex territory where government's data have been fluctuating to report progress. Within one year to the commitment of providing separate toilets for girls and boys in schools, the government on 15 August, 2015 announced that it has met this target of 100% schools attaining this status. However, a recent release by Press Information Bureau (PIB) disclosed that under Sarva Siksha Abhiyan (SSA), since its inception in 2001 till 31.12.2017, 10.54 lakh toilets have been sanctioned in elementary schools, out of which States/UTs have reported construction of 9.95 lakh toilets (i.e. 94 per cent). Under Rashtriya Madhyamik Shiksha Abhiyan (RMSA), since the inception of the scheme, from 2009-10 till 28.02.2018, 70,244 toilets in secondary schools have been sanctioned, out of which States/UTs have reported construction of 49,636 toilets (i.e. 70.66 percent). While in 2015 the government reported that separate toilets for girls and boys in both school have 100 per cent achieved, in Feb 2018it reported backlog.

Moreover, even if we consider that 100 per cent gender-appropriate toilets exist, factors like accessibility of toilets for children and differently-abled people, water inside the toilets, hand-washing facilities, access to potable drinking water and appropriate solid waste management, are some of the operational and management (O&M) lacunae under school WASH.

With rapid urbanisation, the flawed system of waste disposal and managementpresents another challenge which the central government is still struggling with whilecities like Alappuzhahave sought solutions by adopting decentralised waste management practices pushing for 100 per cent segregation in the city. Faecal Sludge Management has also been identified as a central challenge in achieving the vision of an 'Open Defecation Free' India. A distinct preference for centralised advanced engineering solutions exists rather than for appropriate decentralised septage management. Manual scavenging is found to be widespread though prohibited by the law.

Interestingly, while access to water supply is being taken up in government's policies, the alarming vulnerability caused by depleting aquifers remains unaddressed. The government of India had released a Model Bill for the Conservation, Protection, Regulation and Management of Groundwater in May, 2016 and a National Water Framework Bill, 2016 to provide uniform national legal framework to manage river water at basin-level in a better and efficient way. Both bill could have had a large implication in controlling exploitation of ground water and managing river water, but in the absence of being enacted, the threat of water shortage and recurring drought situation continues.

The way forward -- towards safe water, adequate sanitation and good hygiene practices

One of the key steps towards total sanitation, good hygiene practices and access to adequate and clean water will be an ongoing assessments of the situation, documentation of key lessons learnt from ongoing programme and determination of what needs to be addressed. Central to the plans will be i. sustained advocacy to build political will around WASH, ii. greater and better utilizations of the funds to meet the targets timely, iii. inclusion and prioritization of the most marginalised community, iv. strengtheningthe capacity and performance of PRI and urban bodies, and v. tacking the massive waste management challenges facing the country.

A beginning has already been made in this direction with the development of understanding between the Ministry of drinking Water and Sanitation, Department of Health and Family Welfare, and Human Resource Department on the need to collaborate for effective implementation of water andsanitationprogrammes in India.

●

(Authors are senior members of WaterAid team)

National Workshop on Strategies to engage with Governments in achieving SDG6

The 2030 Agenda for Sustainable Development envisions "a world where we reaffirm our commitments regarding the human right to safe drinking water and sanitation and where there is improved hygiene."1 This is reflected as Sustainable Development Goal 6 (SDG 6).The goal, "To ensure availability and sustainable management of water and sanitation for all," focuses on addressing the issues of access and availability of safe drinking water, sanitation and hygiene for all, and also the quality and sustainability of water resources and sustainable solid and liquid waste management. For successful implementation of sustainable development goals and achieving the targets by 2030, there is a need to align the national policies and plans with SDG targets, set priorities and ensure participation and capacity building of various stakeholders i.e. public, private, civil society organizations and community, for developing clear accountability and monitoring frameworks. Given the federal Indian structure, the government will need to adopt a decentralized bottom up approach

towards implementing and achieving the SDGs. Although Government of India through NITI Aayog is working with several states on the SDG agenda and some of the States have devised their state specific action plans, there are several gaps in aligning the national and state policies, coverage of flagship programs of various departments and their linkages to SDGs, coordination among various WASH stakeholders, and availability of robust accountability mechanisms. To bridge this gap there is an urgent need to bring all stakeholders together to understand the status of SDG6 progress, discuss challenges and constraints to dovetail unified actions towards achieving the SDG 6.

Keeping this in view, a Global Assessment of National Accountability mechanisms to track progress of SDG 6 in over 30 countries was undertaken with End Water Poverty and IRC (Netherlands) as the lead research organisations. FANSA coordinated this study in seven countries of South Asia, except Bangladesh where the study was done by DORP. This assessment gathered valuable information, insights and ideas for action on monitoring and reporting processes, functionality and effectiveness of existing accountability mechanisms and the role of CSOs and other related stakeholders in strengthening the monitoring accountability mechanisms related to SDG 6.

FANSA in collaboration with WaterAid, Watershed Consortium and National Institute for Urban Affairs (NIUA) organized a one day multi stakeholder learning cum sharing workshop to disseminate the study findings. The workshop

also focussed on understanding the efforts being made at national and sub-national levels by various stakeholders involved and firm up actions on strengthening each other's capacities to support the Governments in achieving the SDG6 progress.

Participants: Workshop included 64 participants from civil society, research organizations, non-government organizations, donor agencies and state government representatives. The participating organizations included UNICEF, WaterAid national and state offices, IRC, Wetlands, NIUA, Kerala

Institute for Local Administration (KILA), Administrative Staff College India (ASCI), Hyderabad, and conveners and co-conveners of FANSA national and state chapters.

Venue: The workshop was organized on April 3, 2018 at Vishwa Yuvak Kendra, Chanakyapuri, New Delhi.

(Panel of hosting organisations – Mr Raman, WaterAid; Mr Murali, FANSA; Mr Ritesh, Watershed and Mr. Depinder Kapur, NIUA)

It is evident that the challenges such as inequitable access, perpetuating gaps in reaching last mile stakeholders, inadequate accountability mechanisms and lack of sustainability of the progress made continue to pose major challenges in achieving the SDG6. While there are many WASH sector players engaging with a range of initiatives and contributing to attain

SDG 6 targets, there is inadequate coordination and sharing among these different players. It is very important for all sector players (including government, CSO networks, NGOs, research and training institutions as well as the organisations working at the grass roots) to work in collaboration, and share regularly their experiences/initiatives towards achieving the SDGs – especially since working on SDG 6 is an opportunity to influence other goals as well.

Following the presentations from various groups on strengthening accountability mechanisms and CSO engagement with SDG 6 processes, a panel of representatives from host organisations discussed the way forward.

Following actions were suggested by the panel:

§ National indicators of SDGs have not been ratified. Hence impossible to track them. Need to define national indicators for monitoring SDG 6 and place them in public domain. This forum will urge the national government to do so at the earliest.

§ SDG 6 should be seen as part of all the SDGs and we need to engage with all appropriate ministries. At the same time, this forum needs to be opened up to more stakeholders working on other areas of water and sanitation so that we work on SDG 6 as a whole.

§ Strengthen the capacity of Gram Panchayats and Urban Local Bodies for developing annual milestones. Tools for integrating SDGs with GPDP need to be developed based on understanding of what works at local level. Need to influence 15th Finance Commission so as to ensure that its recommendations protect and strengthen the resources, flexibility and independence of local bodies of Governance.

§ There is no institutional system or adequate staff at State level and at District and ULB level committed to the SDGs. Who will plan, implement and monitor SDG indicators at rural and urban level is a challenge.

§ Learning from the MDG target setting, there should be disaggregated monitoring of SDGs for different marginalized groups including minorities.

§ CSO capacities need to be strengthened and CSO engagement with SDG 6 processes deepened.

§ Considering that water is life and India has lost about 30% of wetlands in the last three decades due to building construction, the government must include the role of ecosystems in any dialogue on water.

§ A Discussion/Position paper on SDG 6 could be developed based on the outputs of this workshop.

§ All countries in South Asia face similar challenges in SDG 6 implementation and monitoring. SACOSAN should be the regional platform for review of SDG 6.

§ A Task Force from civil society and NGOs from this initiative can be set up. It should have members from CSOs working at state level in the lead. Their roles and the roles of National NGOs and Institutes will need to be defined.

§ A national platform on SDGs setting and monitoring(of which SDG 6 is a part), constituting various stakeholder and government - needs to be created and this initiative can aim at this end.

§ One way to sustain engagement of Civil Society in SDG 6 process can be by taking up certain activities over a 2-3 year period and planning them. These can be Learning Events, Training workshops on understanding WASH Indicators monitoring in general and for SDG6, Advocacy of lessons learnt. Skill building of stakeholders will be a key to meaningful engagement in SDGs, monitoring SGDs is not possible without it.

Sanitation : Media Review

S-1

Depths of despair

● **Abhishek Angad , Anand Mohan J**

Indian Express | May 7, 2018

Over the last seven years, 31 workers in Delhi have died cleaning sewer lines, rainwater harvesting pits or sewage treatment plants. Each death has a familiar trajectory — a worker without safety gear, authorities looking to shift blame, and little tangible change.

"No manual entry into any sewerage system will be permitted. No human contact with sewerage will be allowed without prescribed protective gear." These directives form part of an August 14, 2017 order issued by former Delhi Jal Board (DJB) CEO Keshav Chandra — following a spate of deaths of sewage cleaners in Lajpat Nagar.

Directives that appear to be only on paper. Just last week, two men died after they fell into a sewage treatment plant and inhaled toxic fumes at the Vivanta by Taj — Ambassador hotel near Khan Market.

The news hasn't really changed life for Ramesh and his six-member team who, for Rs 400 a day, are ready if any manholes or sewage pits need cleaning. On Saturday afternoon, outside gate number 4 in south Delhi's Gulmohar Enclave, they are unclogging a rainwater harvesting pit filled with coconut shells, broken bottles, and pieces of cloth.

They enter the 18-foot-deep pit wearing only vests, trousers and slippers. "The machine cannot enter a pit this deep. The only way to clean it is by getting in and digging out debris with spades and buckets," said Ramesh, adding that in his 12 years of work, he has never used a desilting machine.

The men, who live in Trilokpuri and work on a contract basis, said the first thing they look for before entering a pit is an 'acidic' smell — an indicator of trapped gas. "We keep the manhole open for 10 minutes to let it escape," said Tinku Singh (32), who used to be a helper at GB Pant hospital.

But the method is not foolproof. Over the last seven years, at least 31 deaths have been reported in the capital while cleaning sewers and pits, often after victims inhale "gaseous compounds" such as hydrogen sulfide, ammonia, methane, carbon dioxide, sulphur dioxide and nitrogen diox

Read More http://indianexpress.com/article/cities/delhi/sewage-worker-death-rainwater-harvesting-pits-treatment-plant-5166062/

NOV 14, 2011: 2 dead in Jangpura basement
Case status: Trial at prosecution evidence stage

NOV 19, 2011: 3 dead in sewer line outside Anand Vihar railway station
Case status: Trial yet to start; arguments on charges to be framed

APR 22, 2012: 2 dead while cleaning sewer line at petrol pump
Case status: Chargesheet filed in 2015; trial pending

JUN 16, 2012: 2 dead while cleaning sewer line of east Delhi STP
Case status: DCP (east) said, "Chargesheet filed and one of the deceased, a labour supervisor, was responsible for it."

MAY 15, 2013: 1 dead in Tihar jail
Case status: FIR registered

JUL 14, 2013: 3 dead at IGNCA
Case status: Chargesheet not filed

DEC 5, 2013: 3 dead in Narela
Case status: Chargesheet filed on March 15, 2016 against Deputy Controller Sulabh International; trial is pending.

JUL 15, 2017: 4 dead in Ghitorni
Case status: Chargesheet filed

AUG 6, 2017: 1 dead at a hotel in Anand Vihar
Case status: Three booked, trial pending

AUG 8, 2017: 3 dead at Lajpat Nagar
Case status: Chargesheet filed

AUG 12, 2017: 2 dead at mall
Case status: Chargesheet filed. Police to file supplementary chargesheet

AUG 20, 2017: 1 dead at LNJP
Case status: Arguments on charges to be framed

SEPT 18, 2017: 2 dead at Rampal Ashram
Case status: Chargesheet filed

APRIL 29, 2018: 2 dead at Vivanta by Taj –Ambassador hotel
Case status: Two persons arrested

S-2

Not segregating your waste will cost you

● Jayashree Nandi

Times of India, 20 April 2018

NEW DELHI: Segregate your household waste, or be ready to shell out Rs 200 as fine. Recently notified bylaws for solid waste management lay down a number of penalties for violating solid waste management rules, besides specifying monthly user fees to be paid by residents and commercial establishments for waste collection and disposal.

Wastepickers from various groups, however, have rejected the bylaws because they fail to lay down how informal work force will be involved in waste management. The Solid Waste Management Rules, 2016, say that states will have to recognise wastepicker organisations or informal waste collectors to facilitate their participation in solid waste management, particularly door-to-door collection.

The bylaws don't really talk about how this will be done. "It doesn't talk about surveying wastepickers, issuing them ID cards or about decentralised waste management and our rights to buy and sell waste at material recovery centres. We will not accept these bylaws," Shashi Bhushan Pandit of All India Kabadi Mazdoor Mahasangh said.

Read More https://timesofindia.indiatimes.com/city/delhi/not-segregating-your-waste-will-cost-you/articleshow/63836831.cms

S-3

How to manage Waste - a small city shows the way

● Makrand Purohit, Chhattisgarh

Grassroots, March 2018

Ambikapur has become a role model for all the urban local bodies (ULBs) in Chhattisgarh for its successful solid liquid resource management (SLRM). Thanks to Ritu Sen, former collector of Ambikapur and her team for taking the initiative to clean the city and for bringing the women's self-help groups (SHGs) together for this noble cause.

Ambikapur is a small city in Sarjuga district in Chhattisgarh with a population of 1.45 lakhs. The city generates 45 metric tonnes of solid waste per day. The city waste used to get dumped on the 16 acres of dumping yard 3.5 km away from the city. But after the implementation of SLRM in 2015, the dumping yard has been converted into a sanitation park.

Read More

http://www.indiawaterportal.org/articles/waste-away-ambikapur-shows-way

Photo : MP

S-4

Has there been a sharp rise in construction of toilets

● Dipti Jain, Bengluru

Mint, 20 April 2018

Bengaluru: India has built more toilets over the past two years than it did in the previous five years, if the latest official sanitation survey is to be believed. The National Annual Rural Sanitation Survey (NARSS) conducted between November 2017 and March 2018 shows that 75%

of rural households in the country have access to toilets, a 29 percentage point jump over what the National Family Health Survey (NFHS) 2015-16 reported.

Both NFHS and NARSS are government-backed surveys conducted in league with multilateral donor organizations such as United Nations Population Fund (UNPF) and World Bank, respectively. NARSS interviewed 92,000 households across the country while the NFHS surveyed a much larger sample of 601,509 households.

A comparison of disaggregated NFHS and census 2011 data shows that between 2011 and 2015-16, the share of households with exclusive access to toilets rose 9 percentage points to 37%. But a comparison of NFHS and NARSS data shows that between 2015-16 and 2017-18, the share of such households rose a whopping 27 percentage points to 64%.

The annual pace of toilet addition went up from 2 percentage points in 2011-2016 to 30 percentage points in 2016-18 in Chhattisgarh. In Madhya Pradesh, the pace of toilet addition accelerated to 24 percentage points per annum from 1.4 percentage points per annum earlier, according to data from NFHS and NARSS.

Although the methodologies of NFHS and NARSS are similar, the former survey is about health while the latter focuses exclusively on sanitation and that may explain part of the jump, according to an official involved with the survey, who did not wish to be identified.

"NFHS did not reflect the improvements seen under the Swachh Bharat Mission as much of the progress happened in the second half of 2016," said the official. "States such as Chhattisgarh have been declared open-defecation free since then. The results of this survey can however be confirmed only by surveys which need to be conducted every six months."

Read More

https://www.livemint.com/Politics/WjGTASRGhHnNTjmAWc9LsK/Has-there-been-a-sharp-rise-in-construction-of-toilets.html

S-5

Stink over Gurugram garbage collection

● Ranjeet Jamwal & Syed Hashim Najmi, Gurugram/Chandigarh

The Statesman, 5 May 2018

Photo : Ritik Jain

Haryana's first Integrated Solid Waste Management Project has apparently failed to live up to expectations in Gurugram with city residents crying foul over irregular and improper garbage collection by Ecogreen Energy, a subsidiary of a Chinese company.

Besides irregular collection and improper disposal of waste, Gurugram

residents allege that less than the required number of employees has been hired by Ecogreen. They not only skip several houses during the door-to-door collection but also lack the willingness to coordinate with the respective Resident Welfare Associations (RWAs) for better disposal of garbage, they said.

"The company (Ecogreen) is not providing a good service at all. As garbage is not being collected regulkarly, people have started to throw the same in the open which causing even more problems. Ecogreen should have contacted the people of the particular area for coordination between garbage collectors and residents, "said president of the Sector- 46 RWA, Raj Kumar Yadav.

Read More

https://web.dailyhunt.in/news/india/hindi/the+statesman-epaper-statesman/

stink+over+gurugram+garbage+collection-newsid-87144219?ps=N&pn=7&nsk=chandigarh-updates-chandigarh

S-6

SC: Waste lying at landfill sites in capital 'a serious problem'

● PTI, New Delhi

Statesman, 5 May 2018

The piles of garbage lying in the landfill sites of Delhi is a "very serious problem", the Supreme Court said today as it pulled up the National Highways Authority of India for not proceeding with its segregation to use part of the waste for road construction

Read More

https://www.business-standard.com/article/pti-stories/waste-lying-at-landfill-sites-in-delhi-a-serious-problem-sc-118050401003_1.html

S-7

Why does segregating garbage still remain such an uphill task?

● Seetha Gopalakrisnan, Chennai

Grassroots, April 2018

Chennai's solid waste headache is by no means entirely monsoon-related. But the issue manages to capture the media's attention around this time of the year mostly because unregulated dumping tends to disrupt waterways in many parts.

Photo SG/WP

Chennai has two dumping grounds spread across 400 plus acres in Kodungaiyur and Perungudi, both of which have been in existence for over 25 years. These dump yards handle anywhere between 2100 and 2400 metric tonnes of garbage on a daily basis. According to the Corporation of Greater Chennai's solid waste management (SWM) department, nearly 4500 metric tonnes of garbage is collected from across the city daily. Perfectly compostable food and green waste constitute nearly 40 percent of this.

The city corporation picked October 2 this year to make source segregation of garbage mandatory in accordance with the Union Ministry of Environment, Forests and Climate Change's revised solid waste management rules, 2016. The new rules mandate the segregation of garbage into biodegradable waste, dry waste and domestic hazardous waste (which includes diapers, sanitary napkins etc.) before handing it over to conservancy workers. Resident welfare associations and gated communities are expected to ensure that all waste generated within the complex is segregated and also treat biodegradable waste within the premise as far as possible. While the move is certainly a welcome one, the civic body still has no plan in place to make sure citizens adhere to it.

Read More

http://www.indiawaterportal.org/articles/chennais-struggle-segregation

S-8

Sanitation workers end stir as contract system to go

Tribune, 25 May 2018

Chandigarh

The 16-day long strike by sanitation workers in Haryana was on Thursday called off after the state government conceded to most of the demands, including increase in salary and allowances.

"The agitating safai and sewer karamcharis have decided to call off their strike," Urban Local Bodies Minister Kavita Jain told the media here.

She addressed a press conference after a meeting with office-bearers of the Municipal Workers Union and Bharatiya Mazdoor Sangh. The two unions announced their decision to end the strike.

The safai and sewer karamcharis of municipal bodies will now get a lump sum salary of Rs13,500 per month. Besides, it has been decided to end the practice of contractual engagement and absorb the employees in the payroll of the Urban Local Bodies Department.

Read More

http://www.tribuneindia.com/news/haryana/sanitation-workers-end-stir-as-contract-system-to-go/594346.html

S-9

Janha Nahi Jaroorat, Wanha Bane Shouchalya (Hindi)

Jansatta May 6

This report points out that the location of recently constructed toilets in Noida has not been as per the actual needs of people.

S-10

Gazipur Landfill Site Par Fir Hadse Ka Khatra (Hindi)

Hindustan May 21, 2018

This report points out that the Ghazipur landfill site in Delhi remains potentially a site of a possible disaster.

S-11

Delhi Plastic Ke Bojh Se Dabti Ja Rahi (Hindi)

Hindustan April 23, 2018

This report examines various aspect of plastic garbage and pollution in Delhi.

A Bath Only Once A Week In the Sweltering Heat of Rajasthan

Report from Kalandar Basti of Tonk

In the city of Tonk, ward number 5 of Mohalla Bahir is inhabited by people of Kalandar community. The mercury was touching 45 on the May afternoon when we visited this basti. Nearly half of the 110 households do not have land pattas and hence live in tent like structures, exposed to the vagaries of weather as well as insects and reptiles.

The water problem is particularly acute for these insecure members of the community. There is a hand-pump near the colony but often this does not have water. So they have to go about a km. away to get meager supplies of water. The water shortage is so acute that a person is likely to get only one bath in a week and it is really a problem to spend such a long time without having a bath in extreme hot weather. Also the burden of fetching water is almost entirely on women. As they said, men take the water stored in the home for granted, not realizing how much work and worry went into bringing this water.

Also these insecure people of the colony do not have toilets. All of them have no alternative but to defecate in the open. The situation is most difficult for women as there is hardly any cover here in the form of bushes etc. It is a serious problem for their health, dignity and safety. They often have to face harassment. Due to a sense of shame they prefer to go in the dark hours of very early morning or early night but the threat to safety is more precisely in these dark hours.

–BD

Photo : Reena Mehta

It was a heartwarming experience to work with women sanitation workers

Interview with Reena Sharma, social activist

Reena Sharma is a social activist and Democracy Fellow who is working as counselor in Child Help Line in Jaipur. Her previous assignment was to work with women engaged at that time in manual scavenging work in two colonies of Nagaur district and two colonies of Sikar district of Rajasthan. Here she speaks about her inter-actions with these women workers.

"Earlier women of Balmiki community were working as manual scavengers and often their daughters started going with them to help them. Hence teenager girls at a tender age also got involved in this work. After the marriage of a son sometimes the woman's daughter-in-law started going with her for manual scavenging work. I was there as an activist of Allaripu Khilti Kaliyan organization to help in ending this practice of manual scavenging. Our work was supported by Action Aid.

We starting learning centers for these girls and introduced them to various new skills so that they can find alternative livelihoods.

The winds of change started blowing. All the girls and young women , the daughters and daughters-in-law, stopped going for this work.

Our efforts to promote education of these girls were successful. Some of them are now in college and some are training to be teachers.

However till I was there some of the older women were still continuing with their old wok and they avoided talking about this or raising this issue.

Photo Credit : Reena Mehta

I am now in a different area of work. Still I like to go there from time to time and meet the girls whom I taught.

People talk about caste rigidities but look at our experience. I am a Brahmin but I stayed with them and mixed up very well with them. Where there is affection and solidarity caste barriers do not matter. When my mother-in-law died nearly 50 of them came together for condolence.

I cherish this experience and the respect and affection I got from community members.—BD

Introducing IRC

● Shiny Saha

IRC is an international think-and-do tank that works with national and local governments, NGOs, entrepreneurs and people around the world to find long-term solutions to the global water, sanitation and hygiene services (WASH) crisis. It was founded in 1968 by the Dutch government upon request of the World Health Organization as a WHO Collaborating Centre. Currently, IRC is established as an autonomous, independent not-for-profit foundation with its Headquarters in The Netherlands. It has presence in more than 25 countries across Africa, Asia and Latin America, with special focus in Ghana, Burkina Faso, Uganda, Ethiopia, India, Mozambique, and Honduras.

IRC is dedicated to working towards achieving universal access to sustainable WASH services (SDG6) in the focus countries by focussing on building government's ability to deliver and maintain water services. This is in sharp contrast to the more conventional charity-based solutions that primarily focus on the installation of hardware. IRC aims to tackle the chronic waste of resources globally in the WASH sector consequent of short-term and piecemeal interventions that have resulted in approximately one third of rural water systems around the world not working.

IRC's Systems Approach believes that sustained WASH services can be delivered by strong and competent national systems. Systems are the networks of people, organisations, institutions and resources (the "actors" and "factors") necessary to deliver services. They include both hardware and software; management and governance. The systems approach is grounded in the practical business of identifying and strengthening the necessary sub-systems ('building blocks') to deliver effective services. Some of the most important among these include: Institutional Systems, Service Delivery Models, Monitoring Systems, Water Resources Management Systems, Financial Systems, Planning and Budgeting Systems, Regulatory Systems, Procurement and Project Delivery Systems, Asset Management Systems, Learning and Knowledge Sharing Systems.

Many of these building blocks overlap, and each one's importance to service delivery can change according to time or context. But central to the systems thinking is that - for any service to be delivered, all building blocks must be present and working, at least to a minimum level.

In India, IRC is working towards strengthening WASH systems in both rural and urban contexts. As part of the Watershed consortium, funded by the Dutch Ministry of Foreign Affairs, IRC is working with Wetlands International (South Asia) and Akvo in the districts of Ganjam (Odisha) and Samastipur (Bihar). IRC's urban engagements is as part of the IHUWASH consortium, funded by the USAID, working with the National Institute of Urban Affairs, TARU Leading Edge and Ennovent, in the cities: Faridabad, Mysuru and Udaipur. Additionally, IRC, in collaboration with TARU Leading Edge and the India Sanitation Coalition, organises regular multi-stakeholder dialogues on Sanitation, known as the Insights series.

For more information on IRC please visit https://www.ircwash.org/home

Photo Credit: Ruchika Shiva

Unraveling the Toilet Story: From Past to Present

As told by Radha, 55 years, Jaipur to Sutapa Majumdar, Coordinator Research and Documentation, Centre for Advocacy and Research (CFAR)

Not much has changed in Jawahar Nagar in the past forty years. In these narrow lanes, we find many people, who have come from places as far as UP, Bihar and Bengal to make a living and still people are struggling to make ends meet. However, if you ask me about the city as a whole, all I (Radha) can state is that unlike Jawahar Nagar, the rest of the city has changed.

With the changing city we are also aspiring for change. Like many others in Jawahar Nagar I also wanted to build a toilet. This became a possibility when I came to know that the government is providing subsidy for building toilets to make the nation open defecation free. This was my opportunity and I started gathering all necessary documents for submitting an application for the subsidy.

Before I share that experience I want to also talk about my personal journey. I came to this city as a young bride some forty years back. I might have been fourteen or even less when I got married to a man much older to me and had to take care of the entire household and raise three children. For a village girl like me who never went to school and who had never had known a world outside her village, Jawahar Nagar was an exciting place to be in.

Not for long did I feel the same as I realized that life was not so easy in the city. Soon I had to start working along with my husband to earn a bit more for the family to survive. My husband worked in the mines as a wage laborer, so did I. Every day after work, I came back home and did all household chores and in between did some extra work –tailoring and embroidery for some additional income. It was never enough for us but we could pull on with the little income we got till my husband fell seriously ill. After some years of continuous sufferings and treatment, he finally died of multiple organ failure. Everyone say that he died because of working at the mines. I might have been 25 or 26 years of age then when I became a widow.[1]

The treatment put us under heavy debt and I could never rest for a day to repay the debt. I single handedly took care of the entire households- my children, in-laws and others dependent in the family. I couldn't afford to remain at

CMC women explaining the Twin Pit Technique at Jawahar Nagar as part of SAHAY Single Widow Initiative

1. Jawahar Nagar falls in ward 62 and is spilt into 13 settlements tila or small hillocks. The area is situated at the foothills of Aravalis adjoining vast forest area. The community is mostly migrant SC/ST community majorly from UP, Bihar and Bengal and majority derives their incomes from unorganized sectors as construction laborers (skilled and unskilled); vendors, small shop owners, domestic workers etc. The Jawahar Nagar belt is bereft of basic sanitation facilities and access to many other entitlements. The area is not conducive for sewerage connection and is classified by narrow lanes, (not big enough for four wheelers to enter the lanes), there is no household water connection but common water points. Till August 2017, the area didn't have a community toilet in place and also didn't have a waste collection or management system. People mostly practice OD with very few households having own twin pit toilets.

home and kept on working all my life so that I could give a good life to my children. Life moved at its pace so did I.

I want to return back to the experience I was sharing. Having survived so many ordeals, I now wanted to settle in this city and own a home with a toilet. I did not want my daughter in laws to face the same harrowing experience of living a life without a toilet.

Anybody reading this may ask why are we so obsessed with toilets; the answer is simple, open defecation is the most tormenting experience. On days when I didn't have company, I didn't relieve myself out of the fear of the unknown; I had to control my urge in the night as I had no option to go out; especially during those days (during periods) life was miserable. Neither could I take shower not could I go out to relieve. All the time I had to be alert, hiding myself from known people (especially elderly men) in shame. It is very difficult to even describe what we went through. No one who has not gone through this ordeal will understand. Fetching water and walking long distance is difficult too but not having a toilet is possibly the worst.

So one thing that I definitely wanted to do was build a toilet. I began visiting departments and meeting officials. Being a single woman it was not easy at all to say the least. I want to thus appeal to the government that for schemes and provision to reach the real people, the government should make the process simple and easy for the poor and the marginalized to access the services.

Since 2014 when the announcement for toilet subsidy were made, for almost one and a half year, I visited multiple departments and banks for getting my paper work done and finally when I submitted my application; it was not selected for subsidy for reasons unknown to me. I never got a very clear answer from any of the officials as to why my application was not getting selected for subsidy when I had submitted all required documents. When my application was not selected, I submitted two more application in the name of my two sons hoping that at least one application will be accepted and I could construct a toilet. But even these applications never got selected. I was quite disillusioned but still hoped for a toilet of my own.

I still remember the first time I attended the knowledge camp organized by 'Ekal Khidki' – the Single Window [2] - 'SAHAY' in my settlement last November 2017 where the representatives of the Community Management Committee members (CMC), and the CBO, Daksh Samooh and other workers of Centre for Advocacy and Research (CFAR) explained how SAHAY would act as one stop centre for accessing various schemes and provisions entitled by the government. It is in one of these camps that I also learnt the technique of constructing twin pit toilet- a cost effective alternative to single pit since it doesn't require de-sludging as often as would be required for single pit. Moreover, twin pit seemed to be the best option for me as it not only was cost effective but could be built in limited space that I had. I became a votary and spokesperson of SAHAY ever since I decided to construct my own toilet.

There was no looking back after this. I came

2. CFAR's Single Window model has been able to facilitate administrative convergence and bring the community and government and other stakeholders on the same platform. SAHAY Single Window was set up in August 2017 at ward 62, Jawahar Nagar, Jaipur, and is reaching out to 5 Wards (51 settlements) through the CMC, Single Window Forum and CBO representatives. SAHAY Single Window is an attempt to at replicate our Learning Site on Community Engagement - Jhalana Kunda and scaling up our learning from settlement to ward level. The thrust of the Window is to strengthen/ facilitate community engagement in strengthening sanitation value chain and at the same time the window is also addressing social security (Pension, Palanhar, Ration cards, labour cards) issues and issues of violence.

back home and discussed with my family and decided to construct the toilet with whatever little savings I had and borrowing some money from friends. When I expressed my desire to construct the toilet, Maya and other members of Daksh Samooh stood by my side and guided me in the process. I also submitted my application for subsidy through SAHAY once again and although I was informed that the Corporation is not accepting any more application, but I realized that this was only a temporary situation and through SAHAY we would ensure that once the funds are released, all those who applied for the subsidy would get their due. SAHAY is all about us and our collective ability to not take no for an answer. Never did I feel this sense of collective empowerment.

I feel proud that I took the decision to construct the toilet on my own. Being a mason myself, I worked with the worker to make my toilet my way. This was a very enriching experience for me. As I started building my toilets, many others in my settlement got curious and came to me for advice and how they could also build a toilet. Single Window has been a real blessing in disguise because it not only realizes our strength but also converts us into an agent of change; instill in us a sense of pride and confidence paving the path for a better life. Single Window has erased the gaps between us and service provider. In the past, many of us had no clues about our rights and entitlements but now as an integral part of the Single Window we are making sure that every member of the community has access to a one stop solution centre for all. This is truly rewarding. We are making sure that the community gets fully informed about all processes and procedures and together we not only apply or petition for services but also work with the concerned departments to secure the services. Now I being a member of CMC feel responsible to bring positive change in my settlement. Everyone wants to live a good life and free of hardships and uncertainties. Single Window to us is thus the promise of a better future.

Single Window has now become vibrant; I can see people changing their mindset. People are thoughtful now, taking responsibilities, collectivizing and thinking of changing their life for better and I see women taking a lead in this. Many women like me are now aware and informed, curious and have started taking the responsibility of strengthening safe sanitation practices. I now see children are not falling ill frequently, going to schools regularly, especially the girls. So a change is definitely happening.

Today as I share my experience, I feel I have come a long way since and I also know that this is just the beginning. The pathway to change has begun. We can bring change only when we become the change!

SAHAY Single Window, Jawahar Nagar, Jaipur
Women signing application for Toilet Subsidy

NB: This is a first person narrative is of Radha's (name changed), a 55 years old women, CMC member living in Jawahar Nagar who shares her life story and her experience of Single Window-SAHAY in Jaipur .

Acknowledgement: The author wants to thank Radha for sharing her testimony. A special gratitude for Paridhi and Poonam and all team members of CFAR.

A Report on Implementation and Impact of Sanitation and Water Programs in Four Villages of Talbehat Block of Lalitpur District, Uttar Pradesh (Bundelkhand)

I visited four villages of Talbehat block on May 18 to learn about the implementation of various development and welfare schemes and programs. This report is presented below -

GULENDA VILLAGE, SAHARIYA BASTI

My visit here was to basti of Sahariya tribals. Their previous two crops have suffered heavy damage due to lack of rain or untimely rain. The interview was conducted in a group discussion where about 40 men and women were present.

Irrigation - There is very little irrigation in this village. However a canal exists just one km. away and if this is extended to the village then the village will benefit considerably. But this has not been done despite requests. This is a very vulnerable village depending on only rain with very little irrigation, but hardly anything has been done to improve its irrigation in recent times. Most of the wells in the village are dry.

Drinking Water - Drinking water is a very serious problem in this village. Hand-pumps go dry after giving a little water and so people have to wait for long to get the next few drops. Or often they have to go away 1 km or more to fetch water..

Sanitation - Almost the entire basti uses open defecation. However construction of toilets has taken place in two or three households and these may pick up in the near future, people said. The availability of water for toilets will remain a big constraint unless water situation improves too.

LAALON

This is a mixed population village of various communities. Here last two crops suffered heavy damage, as people stated in a group discussion of about 20 villagers.

Irrigation - Irrigation facilities are negligible now with the drying up of wells. Water is available often at a depth of 150 feet or so, villagers said. No new initiatives have been taken up in recent times to improve irrigation.

Drinking water - People here said again and again that drinking water is their most serious problem and their daily problem. Local hand-pumps stop yielding water all too soon. They have to go 2 to 3 kms. to fetch water. They often use cycles. No tanker has been arranged for this village.

Sanitation - People resort to open defecation. They all question if the construction of toilets

Photos Credit : Manish Kumar

can be helpful as long as serious water shortage continues.

Drinking water for Animals - People here say that several farm and dairy animals have died due to water shortage in recent times.

LAALON CHAK

This is a village in which most families are Thakur families, while a few families are Sahariya tribals and other weaker sections. This year rabi crop was 50% while in the previous kharif loss was 30%, the villagers said in a group discussion of about 15 persons.

Drinking water and Domestic water - People say this problem is acute as hand pumps stop yielding water after a little while and they have to fetch water from sources 1 km or more away. Tanker has not been provided for this village yet. When there is such a serious shortage of drinking water then naturally water available for essential sanitation needs is also adversely affected, particularly in a region like this where heat can reach extremely limits. Hence there cannot be regular and proper bathing. As one villager said, when I go to fill my drinking water supply at a hand pump, I also put two lotas of water on my head and think for my satisfaction that I have taken a bath. But surely, from a hygiene point of view, this is not adequate, even less so for women.

Drinking water for animals - People of this village appeared to be particularly sad regarding farm and dairy animals dying due to lack of drinking water or related causes. When I pressed them for an estimate of deaths of farm animals this year, (from January 2018 to May 17 2018) at group discussion, for some time they consulted each other and then said that probably around 100 animals have died this year.

There may be a little exaggeration in this as no precise count was made, only a hurried calculation. But what is clearly true is that a large number of animals have died.

Acute shortage of fodder and cattle feed may also have contributed to this.

Sanitation - Over 95 percent of people resort to open defecation. However as a woman said, a few households having special needs such as ill and infirm family members have constructed toilet. People question how toilets will be functional if the acute water shortage exists.

D. BHARATPUR

This village is located close to the small railway station of Talbehat. This is a mixed populated village but prajapathis are the number one community in term of numbers. Men and women said in a group meeting of around 30 persons that the crop lose in the last rabi crop was 50%, while in the previous kharif crop loss was close to 100 percent.

Irrigation - This village has a canal but there has been no water in this canal. Wells are drying up. Hence irrigation availability is very less and in fact decreasing compared to earlier times.

Drinking water - Drinking water is a major problem in this village despite the fact that an important water pipeline scheme was taken up in this village. A borewell was dug in a nearly place and pipelines from this are supposed to take water to this as well as other villages. But people alleged that corruption has led to the failure of this scheme. As there was large scale corruption the pipelines were not laid out properly. Now the water availability from this scheme is very meager although there are taps connected to this in the villages. Another problem is the very tardy electricity supply. When there is electricity failure water supply is also affected and people have to wait endlessly at taps to get their water for essential needs. Two hours on average or even more to get water are spent in a day but still very little water is available. Till the time of our visit, no water tanker was being sent to this village. At the time of my visit I could see big queues of water pots at various taps in the village. Also several people including girls were moving on their cycles with empty water tanks saddled to their bicycles.

Sanitation - People here mostly resort to open defecation. They question how and to what extent toilets can be functional if water shortage persists to such an extent. - BD

(Extract from a wider report written for CBGA, Delhi)

Effective, Low-Cost Solutions Needed For Water-Scarcity in Bundelkhand

At first sight, Bundelkhand appears to be a water-abundant region - it has plenty of rainfall, plenty of rivers and a rich traditional system of collecting rain water.

- Bundelkhand normally receives about 900 to 1000 mm. annual rainfall.
- Bundelkhand has a network of seven major rivers - Chambal, Sind, Betwa, Dhansan, Ken, Tons, Yamuna, ten smaller rivers - Pahuj, Paisuni, Baghein, Sonar, Vyarma, Mahuar, Urmil, Lakheri, Jamni, Bina, and their numerous tributaries.
- This region had also been rich in traditional water collection sources.

A report titled 'Problems and Potential of Bundelkhand with Special Reference to Water Resource base' was prepared in 1998 by the Centre for Rural Development and Technology (CRDT) and Vigyan Shiksha Kendra (VSK). This report (CRDT-VSK Report) noted several special features of Bundelkhand. (Extracts) -

"The rainfall is capricious and erratic in amount, pattern, intensity and distribution. Extreme deviations from the normal are quite common. About 90 percent of the total rainfall is received during four months, July to September. The high intensity of rain hardly leaves any time for the water to infiltrate into the soil; and the deforestation has left little scope to capture the rainwater and transport it to ground-water levels."

"Among the regions to the south of the Himalayan Foothills, Bundelkhand has a larger share of rocky formation with slopy terrain. Because of the Vindhyan plateaus flanked by high steep cliffs, this region has an unusually high rate of water runoff gushing towards the north, creating deep gorges and rapids. This has meant greater problems of water retention."

Following this overview of the water situation in Bundelkhand we present here some effective, mostly low-cost solutions for water-scarcity in Bundelkhand.

(1) Revival of Traditional Water Sources

In recent decades many traditional sources of water have suffered from neglect so that their potential for quenching the thirst of this region and its people is not being realised.

Adequate resources should be made available for repair, cleaning and maintenance of traditional water sources. As the CRDT-VSK Report says. "Notably, the reservoirs constructed at the foothills by the Chandelas between the ninth and thirteenth centuries and by the Bundelas later, are still existing, partially fulfilling the need for irrigation and even drinking water in their respective areas. All these reservoirs seem to have been scientifically designed with provision of spillways for surplus water. Some reservoirs are found to have been connected with canals which were used as recharging sources for the downstream irrigation wells and/or for irrigating the fields directly. In addition, checkdams, weirs, barrages, wells, step-wells (bavdis) and artesian wells were constructed. Bundelkhand has, thus, a glorious tradition of reservoirs, tanks, ponds, wells, which have gone into disuse in certain parts of the region." Adequate efforts should be made to protect the traditional water sources and their catchment areas, whenever this is possible.

Efforts should be made to understand how the traditional system works, particularly in the case of series of inter-linked water-sources, and renovation work should be carried out on the basis of this understanding. Local people should be closely involved not only in the actual work but also in the planning.

(ii) New Water-Harvesting Work

In addition, learning from the traditional well-constructed structures which have lasted for so long, new tanks, check dams, field-ponds, wells need to be created whenever feasible. In Patha or plateau areas, there is good scope for creating very low cost drinking water sources by tapping small natural springs and creating small well-like structures around them to keep water clean.

The NREGS has provided a good opportunity during the recent drought years for water-harvesting work on a significant scale.

In a paper titled 'Solving water problems of Bundelkhand', P.R. Pisharoty, well-known expert on water-related issues has made some specific recommendations,

" ● Contour bunding on gently sloping terrain.

- Construction of a large number of water ponds three to four in each village, each of the ponds being at least 8 meters deep. The surface area of each pond can vary from a tenth of a hectare to one or two hactares. They should be so located that each has a catchment area fifty to hundred times its surface area. A depth of 8 meters at least is necessary, since the average evaporation over the Bundelkhand area is two to three meters of water per year. Water from some of these tanks can be pumped into deep wells as a method of recharging ground water.
- Individual houses or housing complexes should have underground, cement lined "reservoirs" into which the rain water falling on the roofs of the buildings and the open spaces around them can be led through suitable closed pipes or channels.
- Shallow broad area percolation tanks. Due to the heaviness of our rainfall, it is less penetrating in proportion to quantity than in those countries where much of it falls in a state of fine division. The rate of penetration over Bundelkhand area is likely to be 10 to 15 percent of the monsoon rainfalls. Hence the need for special efforts to increase the ground water recharge.
- It will be useful if water in the river courses are pumped into deep wells a kilometre or so away from the river channels. Small check dams across the river would provide small pools from which the water can be pumped."

To get more resources for small projects of direct benefit to villagers, costly dubious projects like large dams and Ken-Betwa link should be avoided.

iii) Need to Protect Forests, To Plant New Trees

As forests of this region have been badly depleted in recent years, there is a clear need to protect whatever is left and to plant many more trees.

A massive effort for afforestation of the hills which can be successful only with the close involvement of people particularly the weaker sections. As afforestation is not easy on denuded hills, soil and water conservation efforts have to be made to first create conducive conditions for plants and trees to survive.

The CRDT-VSK Report emphasises the role of grasslands. "Development of grasslands, as sources of fodder for cattle is necessary to prevent cattle grazing in the hills slopes. Grasslands, apart from providing fodder and contributing to the success of afforestation of hills, will help soaking of the rain and recharging groundwater.

iv) Need to Impose Restrictions on Practices which Increase Water Scarcity

At least three such restrictions may be emphasised here (a) restrictions on excessive groundwater extraction (b) restrictions on destructive mining practices and (c) restrictions on highly water-intensive crops. -BD

This issue has been compiled and co-ordinated by Bharat Dogra (C-27 Raksha Kunj Paschim Vihar New Delhi-110063, E-mail : bhartdogra1956@gmail.com) and Team-members under the overall guidance of WASH Forum.