





District Water Quality Platforms

Introduction

Fluoride, arsenic, nitrate, and other chemicals in drinking water pose significant health risks such as fluorosis and arsenicosis to our population. According to government data¹ (2016), approximately 21 million people in over 23,500 habitations are affected by arsenic and fluoride present in groundwater. The worst fluoride affected states are Rajasthan, Gujarat, Andhra Pradesh, and Telangana. Punjab, Madhya Pradesh, Karnataka, and Maharashtra are moderately affected.²

Chemical contaminants like fluoride occur naturally in underground rocks. Hence, community reliance on groundwater sources, coupled with malnutrition and poor access to health services, makes them vulnerable to the diseases caused by the same. These contaminants in drinking water leave many people with crippling deformities, skin diseases and cancers in fatal cases.

The National Water Quality Sub-Mission is responsible for water quality issues, with a major focus on arsenic and fluoride-affected habitations.

For such large-scale problems, the response at the national level has been patchy. Policies looking to address these problems tend to focus on water access. To provide access to clean drinking water, they focus on moving away from groundwater en masse, and have tried to implement access through surface water sources. Apart from implementation of regional pipe water supply schemes, such as Mission Bhagiratha in Telangana³, and thousands of community-level defluoridation plants in states like Madhya Pradesh, Karnataka and Rajasthan, issues related to contamination continue to affect millions. An audit of the National Rural Drinking Water Programme (NRDWP) and its Integrated Management Information System (IMIS) data on water quality undertaken by the Comptroller and Auditor General of India (CAG) in 2018, found major discrepancies between the IMIS data and physical records on drinking water availability within schools and anganwadis, irregularities in the dates of schemes implemented, and most importantly, differences between physical records and IMIS data on the status of water quality for different habitations.⁴

¹ Department of Drinking Water and Sanitation (Government of India), available at: <https://jalshakti-ddws.gov.in/>

² National Institute of Health and Family Welfare (Government of India) (2016), available at: <https://www.nhp.gov.in/disease/non-communicable-disease/fluorosis>

³ Government of Telangana State Mission Bhagiratha, available at: <http://missionbhagiratha.telangana.gov.in/>

⁴ Comptroller and Auditor General of India (2018) Report No.15 of 2018 - Performance Audit on National Rural Drinking Water Programme in Ministry of Drinking Water and Sanitation, available at: <https://cag.gov.in/content/report-no15-2018-performance-audit-national-rural-drinking-water-programme-ministry-drinking>

As a part of the Water Quality Network (WQN) for the past decade, and with its own programmes, INREM Foundation has worked in districts like Jhabua (Madhya Pradesh) and Nalgonda (Telangana) to develop an integrated approach to fluorosis mitigation. A key learning is that the intervention needs to work at a number of levels. At the individual or household level, this means that mitigating the effects of fluoride requires consistent access to fluoride-free water, better nutrition, and for fluorosis patients—diagnosis and rehabilitation. For this action to saturate a district and sustain over time, the district needs the aligning, motivation and bringing together of a number of relevant departments, local civil society organisations (CSOs), and individuals.

The right solution, therefore, requires alignment and collaboration between individuals and departments, whereby the needs of the community are properly heard and processed. The challenge thus is to create systems that properly connect and motivate individuals from communities and organisations to communicate openly and clearly, and translate this dialogue into action in a sustainable fashion. And through that all, an overarching system is required by which data is collected periodically in some standardised form that helps track progress and helps affected communities and CSOs hold the individuals and teams in power accountable.

People-Centric District Water Quality Platforms

INREM Foundation and SaciWATERS anchor the WQN with a focus on fluoride and arsenic respectively in India. WQN brings together a wide set of stakeholders on the issue.⁵ The larger network is born out of the experiences around the 'Fluoride Knowledge and Action Network'⁶ that started in 2013, which at the outset tried to bring together what was then a disparate community of practitioners, researchers, and activists to join hands for a unified response and sharing of knowledge and experiences.

In the fluoride-affected districts—Balasore, Nalgonda, Jhabua, Dungarpur, Chikkaballapur—where INREM has intervened with partners over the past decade, a model of 'People-Centric District Water Quality Platforms' for addressing fluorosis issues is being tested (and iterated) in six states of India. These states are Rajasthan, Telangana, Karnataka, Madhya Pradesh, Odisha, and Assam.

In each district, WQN and INREM support a team that convenes a District Platform by getting the right people and representatives of district-level departments. The primary goal of each of these 'District Water Quality Platforms' is to make the district 'fluorosis-free' in a specified time period as decided by the platform. This platform then systematically works towards this in the following way: engaging in a goal articulation exercise, and coming to a consensus on timeline and roles

⁵Both the organisations are currently working on a European Union Supported Programme on Water Quality in India: 'Civil society voices, vulnerable communities and localized platforms for addressing Water Quality.' The project kicked off in 2018 and will conclude in 2021.

⁶ Supported by Arghyam.

based on local priorities and opportunities presented by the skill sets and programmatic focus in each of these districts. These platforms enable convergence between different government departments such as water supply, health, and women's welfare.⁷ Additionally, efforts such as 'Speaking Wall'⁸ and surveys ensure that the involvement of local citizens is maximised. Overall, the emphasis is on sustainable solutions that are ecologically sound, address the most marginalised people, and at the same time can be scaled up within the respective districts.

These district-level water quality platforms have led to coordination of the efforts at scale. Witnessing alignment, planning, and action in a district in their own state, serves as a building block to scale up efforts on a much wider scale. For e.g. in Assam, action that started in Nagaon, has led to the state beginning to form a state-level response through action in another three districts i.e. Kamrup, Hojai and Karbi Anglong. In Rajasthan, a similar effort based on the Dungarpur model (the first district platform in Rajasthan) is now planned to be replicated in three more districts i.e. Rajsamand, Sirohi and Jalore. The current direction is to work within the water and sanitation mission of a state that is willing to work on the model (at this time in Assam and Rajasthan) that helps to take the District Water Quality Platform approach as a building block. The idea is that in the same way that the district is a model to be learned from and replicated across a state,

Role of District Platforms

- Connecting the needs of affected communities in the most vulnerable areas of water quality affected regions with the respective district administration.
- Enabling convergence of different departments to work on specific activities and monitor their outcomes for required services.
- Periodic monitoring of the status of water quality and health impacts through field surveys. At the moment, these are being piloted by the INREM teams in each district, but will soon be handed over to government staff that will be trained, mentored, and supported to carry these out in the long run.

similarly these pioneer states could facilitate national-level action against fluoride and related issues such as arsenic and other water quality problems.

Setting Up the Platforms and Enabling Processes

There is a nodal department specific to each district, which anchors the platform. The district collector heads the platform. Its members meet every month and report their progress to the district collector every quarter.

These meetings and advocacy efforts have resulted in convergence between at least four departments—Water Supply, Health,

⁷ More detail in subsequent sections of this Case Study.

⁸ A painted wall is put up at a prominent point in the community where the latest water quality data of water sources is mapped along with a method for communities to share their voices. This is a touch point that is being actively developed and iterated.

Integrated Child Development Services (ICDS), and Education—in every district where the platform has been constituted. Along with this, other local stakeholders such as civil

society organisations (CSOs), local university departments, and other institutions need to be involved on this common platform.

Members of the District Platform

- District collector and sub-collector, CEO–Zila Parishad (ZP)
- Nodal department
- Other department representatives such as water supply (Public Health Engineering (PHE), Rural Water Supply and Sanitation (RWSS) or others), Health and Family Welfare, ICDS, Education
- Civil society organisations working on drinking water, irrigation, watershed, nutrition, agriculture, public health and related areas
- Any other invitees, as per request, such as other departments, organisations, university departments

TABLE 1: Departments and their structures in three levels as part of the District Water Quality Platform (Abbreviations in Legend below)

	PHE	Health	ICDS	Education	Others (Forest, Panchayat, MGNREGS), Agriculture, DRDA
Level 1: District	SE, EE, AE	CMHO, additional CMHO, NPPCF Officer	Deputy Director	Chief DEO, 4 DEOs	Forest (DFO, DCF), CEO–ZP
Level 2: Block	JE, Keyman	BCMO, MOIC CHC/PHC	Block CDPO, Sector Supervisor	Block Level Chief BEO	Forest (Ranger), BDO
Level 3: Panchayat	VWSC, Water Operator, Hand Pump Mechanic, SEM	LHV, ANM, ASHA	AWW, ASHA	School Level Per PEEO	Forest (Naka Vanpal, Beat-in-charge), Sarpanch and GP Members

Legend

PHE: SE: Superintendent Engineer, EE: Executive Engineer, AE: Assistant Engineer, JE: Junior Engineer, VWSC: Village Water and Sanitation Committee, SEM: Self Employed Mechanic

Health: CMHO: Chief Medical and Health Officer, NPPCF: National Programme for Prevention and Control of Fluorosis, BCMO: Block Chief Medical Officer, MOIC CHC/PHC: Medical Officer In-charge for Community Health Clinic/Public Health Clinic, LHV: Lady Health Visitor, ANM: Auxiliary Nurse Midwife, ASHA: Accredited Social Health Activist

ICDS: CDPO: Child Development Project Officer, AWW: Anganwadi Worker

Education: DEO: District Education Officer, BEO: Block Education Officer, PEEO: Panchayat Elementary Education Officer

Others: DFO: District Forest Officer, DCF: Deputy Conservator of Forests, ZP: Zila Parishad, BDO: Block Development Officer, GP: Gram Panchayat, MGNREGS: Mahatma Gandhi National Rural Employment Guarantee Scheme, DRDA: District Rural Development Agencies

Components of a Holistic System for Action to Enable Health Impacts

There are three key strands that intertwine to create an effective approach:

1. Looking into the roles and responsibilities of key departments for effective service delivery
2. Focusing on habitation-level capacity building and action
3. Effective monitoring and evaluation with feedback loops

1. Department-Wise Activities Breakdown

The platform plays the key role of ensuring cross-departmental collaboration and

communication, while creating mechanisms for accountability through periodic monitoring. However, it is important to note that connecting directly with a community suffering the side effects of fluoride requires action around water access, nutrition and specific health interventions like diagnosis and rehabilitation. Thus when considered separately, the following activities within each department can be considered to have separate such individual outcomes. The District Platform needs knowledge and support on building capacities of the departments to ensure that the following specific activities (see Table 2) are undertaken on a periodic basis –

TABLE 2: Department wise specific activities to be undertaken for fluorosis mitigation

Public Health Engineering	<ul style="list-style-type: none"> • Comprehensive and regular testing of all drinking water sources and reporting the water quality to the Panchayat. • Ensuring sustained working of all water treatment plants. • Making provisions for supply of safe drinking water from external sources where any local arrangement is difficult. • Identifying and making possible local safe water sources in water-quality affected villages. • Having a continuous stream of communication with Panchayats and communities on water quality issues – ensuring long-term behaviour change on these issues.
Health	<ul style="list-style-type: none"> • Timely detection of water quality related diseases, and their reporting through a referral chain of health systems. • For people affected with water quality related health problems, ensuring rehabilitation processes through treatment, or other means such as nutrition. Through field health workers – having a constant campaign of communication with people to steer them towards better behaviour for improved health for issues caused by water quality problems.
ICDS	<ul style="list-style-type: none"> • Regular testing of water in anganwadis and identifying any water quality issues. • Provision of safe drinking water for drinking and cooking in anganwadis. • Identifying and using existing mechanisms such as village health and nutrition day, Mamta Diwas and others as opportunities for communication with pregnant and lactating mothers on water quality issues.
Education	<ul style="list-style-type: none"> • Regular testing of water in schools and identifying any water quality issues. • Provision of safe drinking water for drinking and cooking in mid-day meals. • Introducing water quality issues in curriculum for long-term education and behaviour change amongst children and their families on water quality issues.
Others	<ul style="list-style-type: none"> • Utilising NREGS as a means to develop a sustainable way of ensuring safe drinking water through water conservation, recharge, etc. • Having agriculture and forestry departments focus on nutrition related interventions by plantations and gardens etc. • Getting Panchayats to have focused planning at the village level for comprehensive action on water quality issues, ensuring convergence on ground.



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Building capacities of women on solutions to water quality issues

2. Capacity Building and Habitation Level Action

Existing village and habitation level governance institutions such as Panchayats and Village Water and Sanitation Committees (VWSC) and frontline workers such as local school teachers, ASHA workers, anganwadi workers, and watermen play a key role in bringing forward the voices of affected communities, and in empowering them with the required information to fight water quality issues and their impact on health.

CSOs and relevant departments also need to build awareness and provide effective training that enhances capacities of these frontline workers and local governance institutions. Panchayats, VWSCs and frontline workers provide an important channel between the departments responsible for service delivery and the affected communities, bringing to the fore the challenges and needs of the

communities, while creating awareness and delivering on the needs around water access, nutrition, and health impacts.

The VWSC and the Panchayat are now better equipped to fulfil their mandates on drinking water and health. Anganwadi and ASHA workers with training based on identifying disease symptoms of fluorosis and arsenicosis provided to them, are aware of the kind of nutritional and health interventions they need to undertake to improve the situation and are better equipped to handle related health challenges.

This helps define the connection that lies between the currently segregated sectors of health, water, and rural development. Hence, by building the capacities of this ground cadre, supported by different government departments, the Platform creates easy approaches for integration of health and water, which allows effective diagnosis of

drinking water related health issues, as well as improved service delivery.

Through such activities on the ground, the final beneficiaries, i.e. the vulnerable, disabled, and affected communities, get a chance to understand the various water quality

challenges that they face. It also enables them to take charge of these challenges and handle them in a systematic and sustainable way, helping them get educated on the avenues and processes available for raising concerns meaningfully.

How community voices have enabled change on safe water through a District Platform

A story from Balasore district of Odisha



INREM

Community voices improving safe water access in Balasore

A good example of safe drinking water sharing from a private source is seen in the village Thanagadia of Chasakhanda Gram Panchayat in Remuna block of Balasore district. Through a Remuna block-wide fluoride water survey organised by the District Fluoride Mitigation Centre (DFMC), the hand pump water set up by the government was found to be contaminated with high fluoride, causing dental fluorosis and joint pains. After this initial water testing and communication through the DFMC, the villagers started to think about the possible solutions available locally for safe drinking water. Continuous triggering

by the Balasore district team focused on sharing of safe water sources as the only immediate solution to tackle the fluorosis issue. As a result, Ms Ramani Das (ASHA worker) and Kailash Das (Headman of the Thanagadia village) agreed to share, free-of-cost, their own hand pump water, which has fluoride within the permissible BIS limit, to 40 households of Khandayat Sahi for drinking and cooking purposes. This practice is now helping more than 200 villagers get safe drinking water without any investment of external technology and just through the means of local water sharing.

3. Monitoring and Evaluation

INREM supports periodic monitoring and evaluation (M&E) surveys. These surveys are designed to document the current extent of water quality issues and related health impacts and gauge understanding of solutions within the district. They serve two key purposes, which build more accountability to the working of the District Platform:

1. They help the project management team understand the status of their activities to meet programme objectives and goals.
2. They support the processes of the District Platform by having a mechanism to ensure that ground reality has an impact on concerned processes/programmes/schemes within the government. This pushes for accountability from relevant departments within the District Platform.

With the approval by District Platforms, the resulting data is authenticated and accepted by the respective district governments and bodies. This enables better decision making to improve the health of thousands of young children, women, and those affected with disease.

The M&E surveys are designed to be a replicable process and include tools that can be applied in any district to get a snapshot of the fluorosis situation across that district. In the longer term, they will help understand if the goals, in view of the original indicators, are being met.

Conclusion

Most development issues require an integrated approach so that the solutions benefit the affected. The District Platform, in that sense, is an enabler for exchange of solutions, and a mechanism to spread best practices. The purpose of this case study has been to document this approach at a particular point in its evolution, as well as the learning from the experience thus far.

Evolution and Growth through Collaboration and Partnership

This is a concept that has been shaped by the partners taking it on. With every new partner who comes onboard, the concept is evolving and getting sharper. A good example is UNICEF who came on board to formalise the platform and processes in Rajasthan, expanded its purview across more districts, and got support at the state level. The key is that as the District Platform idea grows, in going from one place to another through contextualisation and replication with partners, it shows that there is room for improvement and for making it more meaningful in its impact.

Wider Impact at the State Level

There is potential for wider impact as the District Water Quality Platform and process becomes a means through which integrated work on mitigation against contaminants can possibly support action at the state or national level.

Channel and Platform for Tackling Other Contaminants

Lastly, the setting up of a platform and its constituent processes allows for a robust scaffolding, through which one can address issues related to contaminants beyond fluoride and arsenic, with issues like salinity, biological contaminants, uranium and selenium coming to the fore.

Learnings

Government officials hesitate to get going

Getting all the departments on board with this idea is a challenge in the beginning. Government officials are hesitant to be part of such a process where their actions are subject to accountability by senior officers like ZP CEO or the district collector. Hence, an influencer (could be a person or an organisation) who is within or works with the government, needs to be identified, who may help kick-start the process and build confidence.

Keeping things simple is essential

It is critical not to overburden the departments with complex agendas and activities. It is important to identify channels within the systemic process where specific inputs can help achieve the objectives, so that best practices become part of the agenda within each department or CSO. A strategy that is bearing fruit given this learning is seeing how requirements for platform activities can be aligned with, or subsumed within, existing policies or running programmes. For example, to ensure that affected communities grow

plants and trees whose output is necessary for the required nutrients, the platform used existing horticulture mandates around distribution of seeds and saplings, directing them to distribute amla and moringa plants to farmers and families in affected districts in Dungarpur, Rajasthan.

Monitoring of ground actions

Developing a strong monitoring framework is crucial to the functioning of the District Water Quality Platforms. It helps to serve as a milestone-marker for both the government and platform representatives. The key, though, is to make sure that these processes are accessible by communities on the ground; both in the way information and data is collected, and in the way, the analysis of that data leads to iteration and outcomes.

Strengthening capacities and institutions is critical

In the water sector, especially related to health impacts, there is no specific frontline staff as it falls and overlaps in the purview of many individuals and institutions. Thus, policy decisions made at any level sometimes fall through the cracks as they fail to create an impact on the ground. It has thus been an important learning that it is essential to support community members themselves, frontline workers, and local governance bodies in taking action. District platforms amplify and ensure action through the connect they establish across relevant departments and the community.

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