

USING CITIZEN SCIENCE FOR EVIDENCE-BASED ADVOCACY

A STORY FROM PURUNA CHHATRAPUR VILLAGE IN ODISHA, INDIA

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Watershed
empowering citizens

ABBREVIATIONS

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| GP | GRAM PANCHAYAT |
| CSO | CIVIL SOCIETY ORGANISATION |
| WASH | WATER SANITATION AND HYGIENE |
| WRM | WATER RESOURCE MANAGEMENT |
| NGO | NON-GOVERNMENTAL ORGANISATION |
| PRA | PARTICIPATORY RURAL APPRAISAL |
| GKS | GAO KALYAN SAMITI |
| SHG | SELF HELP GROUPS |
| VWSC | VILLAGE WATER AND SANITATION COMMITTEE |
| MDWS | MINISTRY OF DRINKING WATER AND SANITATION |
| VDC | VILLAGE DEVELOPMENT COMMITTEE |

PROJECT CONTEXT

Located along the eastern coast of India, Puruna Chhatrapur village in Ganjam district of Odisha is home to about 600 fisherfolk families. The village adjoins the 5.8km long Tampara lake, one of the most important wetlands in the state of Odisha. The lake has come under severe stress over the years, which has adversely impacted the ecological balance of the region. The surface water capacity of the lake is rapidly depleting and the capacity for storage and aquifer recharge is seeing a significant decline. Run-off from the catchment, as well as wastewater draining into the lake, has resulted in eutrophication. On top of this, siltation at the southern end of the lake has led to area loss which negatively impacts the drinking water supply. The depleting fish population has taken a toll on the livelihoods of the fishing communities, relegating them to precarious daily wage labour options. While the men are able to move out of the villages in search of work, the women and girls pick up work as casual laborers in the adjoining casuarina and cashew groves.

The Watershed programme is a five year strategic initiative of the Dutch Ministry of Foreign Affairs (DGIS) which aims to equip local civil society organizations (CSOs) with the skills, knowledge, and resources they need to effectively lobby duty bearers. Using evidence-based advocacy, they can influence government departments for better access and management of water, sanitation, and hygiene (WASH) and water resource management (WRM) services. In India, the programme is being implemented in the states of Odisha and Bihar in partnership with two local non-governmental organizations (NGOs) - Gram Uthan in Odisha and Nidaan in Bihar. The programme is coordinated by three Dutch organizations - IRC, Wetlands International (South Asia) and Akvo Foundation. Puruna Chhatrapur village in Kanamana Gram Panchayat (GP)¹ is one of the ten landscape villages in the state of Odisha where the Watershed India programme is currently operational.

Generating evidence about the status of WASH and WRM can empower rural communities to advocate for better representation of their needs in village planning and put forth their development agendas with district governments. However, information about WASH and WRM status, from functionality to maintenance, is dated and limited in villages, making needs-based planning and execution difficult. The GP and CSOs also lack capacities to access or generate credible evidence, which is essential to influencing service delivery.

SITUATION AT THE START OF THE PROJECT

In 2016, when the Watershed India partners visited Puruna Chhatrapur village, the situation was no different. Village annual plans were being prepared and submitted by the Gram Panchayat members with little or no consultation with the community. The plans hardly reflected ground realities and challenges. Planning for WASH focused mainly on hardware installations for water and sanitation, with little scope for the villagers to express their needs or concerns. The near absence of operations and maintenance plans and budgets, coupled with the lack of ownership of the community, has meant a steady decline in the condition of WASH infrastructure in the village, despite repeated capital investments made every year. Issues related to WRM as a result of degraded

¹ Gram Panchayat (GP) is the lowest grassroots unit of governance in rural India

WASH services almost never featured in the annual planning. The villagers, especially the women and socially disadvantaged, bear the brunt on a daily basis.

In 2016, a review of the region's secondary information by the Watershed partners revealed the extent of gaps in the available data about WASH and WRM. Government records reported 90% coverage and 86% fully functional improved water sources for the district as a whole. This was obviously a mismatch for villages like Puruna Chhatrapur, where families were reeling under water stress and periodic bouts of water-borne ailments. The data from secondary sources was highlighted by the Watershed partners, alongside CSOs and local government representatives, in a series of meetings. Together, they jointly compared findings with ground realities and identified the gaps in information. These meetings helped to build interest within the group and established the need to generate more information that would serve as credible evidence for eliciting better WASH services.

Secondary data reports:

- **96%** of the 30,000 population in Ganjam district having access to an 'improved /safe' water source' i.e. hand pumps or piped water supply
- **86%** of the water sources function optimally, meeting the standards for adequacy and reliability
- About **one third** of the population have household 'fully functional' piped water connections

However...

- Information about water quality and functionality of water sources is sketchy and fragmented

Above: Data from the National Rural Drinking Water Programme, Ministry of Drinking Water and Sanitation, 1 April 2019

Through a participatory rural appraisal (PRA) exercise in 2017, community groups in Puruna Chhatrapur village developed resource maps of their village with the facilitation of Watershed partners. These maps visualize the distribution of village water and sanitation assets as well as the condition of WASH infrastructure. This was followed up by a village-wide water point mapping of all drinking water sources and a household survey on key indicators for WASH and WRM. Community volunteers were trained in digital data collection using Akvo's water quality testing and data collection platform.

During 2018, a series of data dissemination meetings were facilitated in Puruna Chhatrapur by the landscape partner, Gram Utthan. The analyzed and visualized information about the key challenges in WASH service delivery was shared with different social groups. Local government representatives were also present during these interactions and were questioned about the skewed distribution of WASH assets. These meetings were attended by members of Panchayati Raj Institutions², Gaon Kalyan Samiti (GKS)³, CSO representatives such as Self Help Group (SHG), Anganwadi workers⁴, and the Village Water and Sanitation Committee (VWSC).

² Panchayati Raj institutions are the elected local governments in rural India

³ Gaon Kalyan Samiti is the village level institution responsible for the improvement of health and sanitation standard of the village

⁴ Anganwadi workers are community-based front-line workers nominated by the government, responsible for promoting child development

Water Point Survey & Household Registration at Kanamana Village, Kanamana GP
18-Aug-2017
Santosh Mishra via web



"Survey Photo"
Photo credit: Santosh Mishra

Water Point Survey (both Public and Private), Water testing with the help of Caddisfly kit and Household Registration done at Kanamana Village of Kanamana GP. It is found that the village is a Open Defecation Free (ODF) village and having household water supply. The water & sanitation committee of Kanamana is very proactive and maintaining the water and sanitation infrastructure in a very effective manner.

PRA Exercise at Takiria Berhmpur, Kanamana
18-May-2017
Santosh Mishra via web



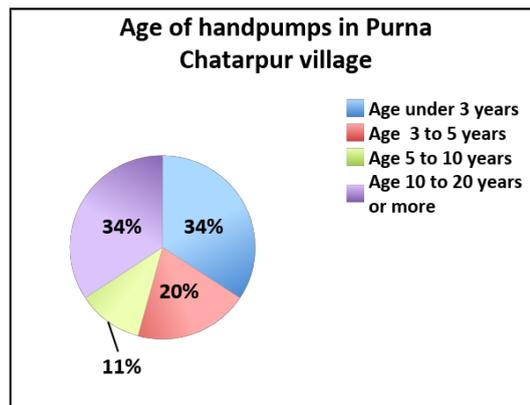
"PRA Exercise "
Photo credit: Susant Nayak

PRA Exercise at Takiria Berhmpur village, Kanamana GP in presence of Sarapancha, villagers and team members. Social map, Resource map and village profile prepared.

Above: Waterpoint mapping and PRA undertaken as a part of the baseline exercise in the focus villages. Project information shared by Gram Uthan in Akvo RSR. Link: <https://rsr.akvo.org/en/project/6030/update/18907>

FROM DATA TO EVIDENCE

Hand pumps or tubewells fall into the category of protected water sources. Inhabitants of Puruna Chhatrapur village collect water primarily from 38 hand pumps. Although 97% of the pumps were discharging water on the day of the survey, the inhabitants reported that many of them faced seasonal shortages, especially during the dry season. About one-third of these pumps were reported to be over 15 to 20 years old.

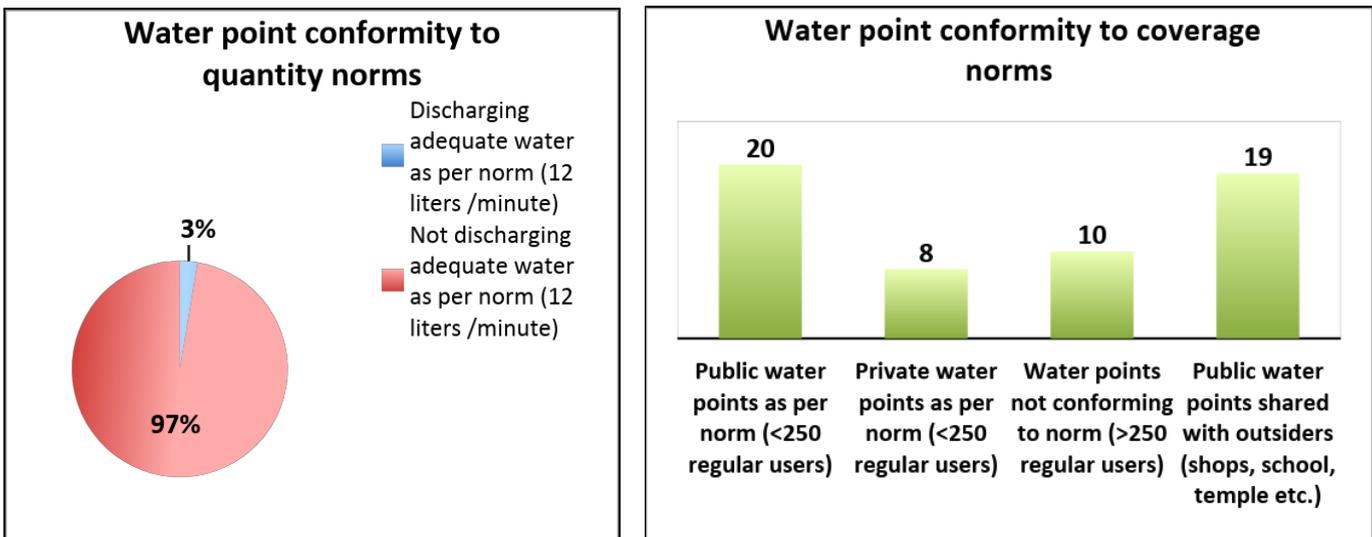


Above: Baseline data on the age of the handpumps covered in the water point mapping exercise

The PRA exercise identified some areas in Puruna Chhatrapur where families had to walk more than 30 minutes to reach a water source with a decent water flow, which is not acceptable according to government guidelines on coverage. This detail does not feature in official records, which only provide consolidated figures for the number of hand pumps with regards to coverage in the village. The piped water supply is erratic due to damaged pipes and has been disconnected in some villages, including Puruna Chhatrapur, as the motor pump lifting the water for distribution lies defunct.

Puruna Chhatrapur is listed as a “covered village” as per the Indian water supply standards⁵, which means that a maximum of 50 families depends on each handpump. The local Gram Panchayat records reported 28 (73%) of hand pumps to be conforming with the government’s coverage norms, i.e. they had less than 50 families of 250 regular users. Eight (21%) of these are privately owned. However, the survey revealed that families dependent on 19 (over 50%) of public tubewells had to share the water with schools, markets, health centers, and the general public.

A handpump needs to discharge at least 12 liters of water per minute to conform to the Indian standards for water supply. In Puruna Chhatrapur, 36 (97%) of the hand pumps do not conform to these standards. The villagers had accepted the low flows from the hand pumps as the norm. But by participating in the mapping survey of the Watershed programme, they learned how to measure the water flow and their rights according to national standards. They urged the GP members to arrange for repair of the existing water points rather than investing in new hand pumps in the village plans.

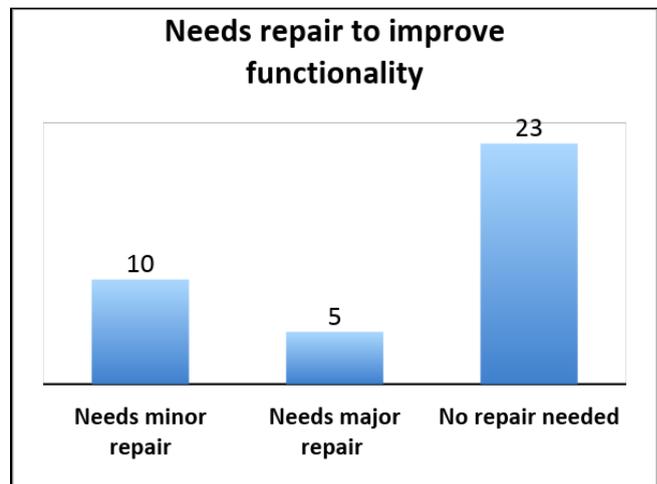
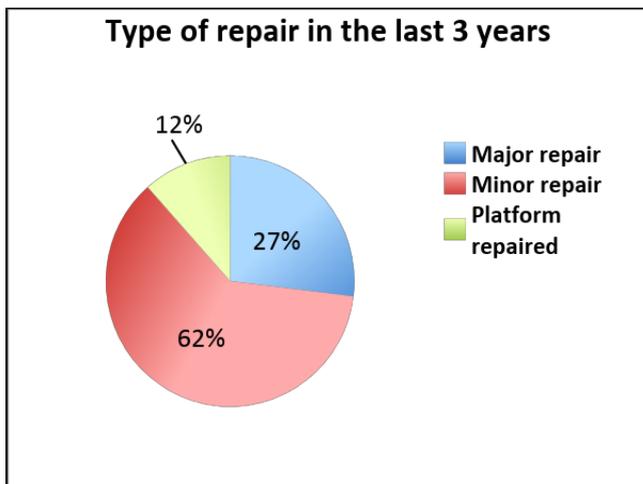


Above: Waterpoint mapping data from Akvo Flow displaying the status of conformity to water quantity and coverage norms

⁵ Public Health and Engineering Department, Government of India standards for water supply states a maximum of 50 families for a single handpump

In Puruna Chhatrapur, 68% of the hand pumps had undergone repair (major and minor) in the last three years. This obviously has not been enough to keep them functioning well, as the survey reported that about 40% were in need of repair. Considering the age of some of the hand pumps and the high usage levels, they are likely to require more attention for regular maintenance.

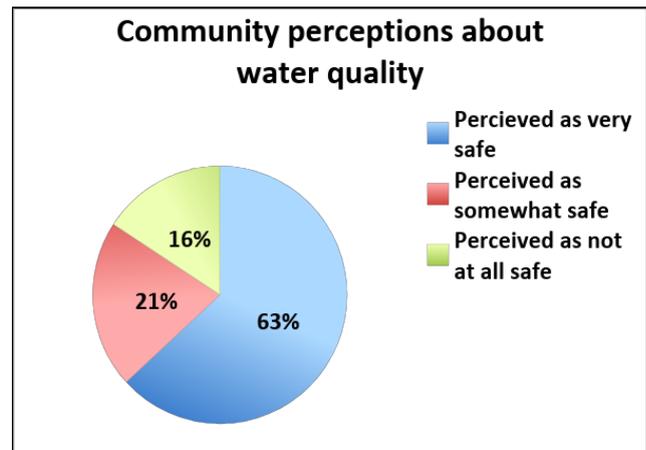
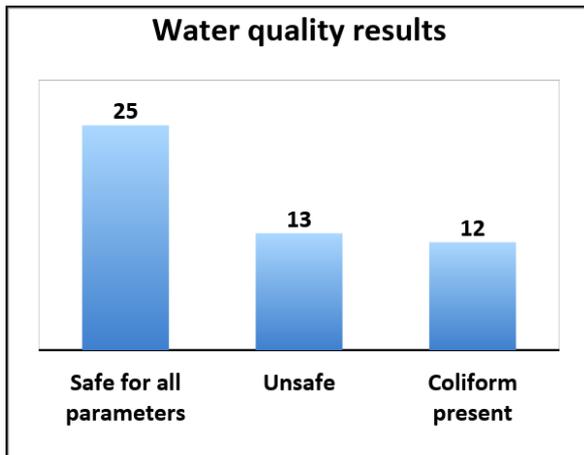
The survey identified the five hand pumps that needed major repairs, such as change of pipes, and ten which could be made functional with minor repairs, like tightening nuts and bolts, valves or handles. The community was aware of these problems but had waited for the GP to arrange for maintenance. In turn, the GP had looked up to the block administration, who they pay 1500 Indian Rupees per handpump annually, and who lacked the manpower and dedicated resources to provide prompt maintenance service.



Above: The status of infrastructure repair of handpumps covered in water point mapping exercise.
Data from Akvo Flow

During the data sharing meetings, it was jointly decided that these particular pumps would receive priority for operation and maintenance in the village plans and that the GP would lobby for resources at the block office. When asked about the quality of the water from the hand pumps, 63% of the community felt that the water they consumed was “very safe” and about 21% felt it was “somewhat safe”. Only 16% reported doubts about the quality of their drinking water. The water quality survey revealed **13 of the 38 hand pumps to be unsafe⁶** due to coliform contamination.

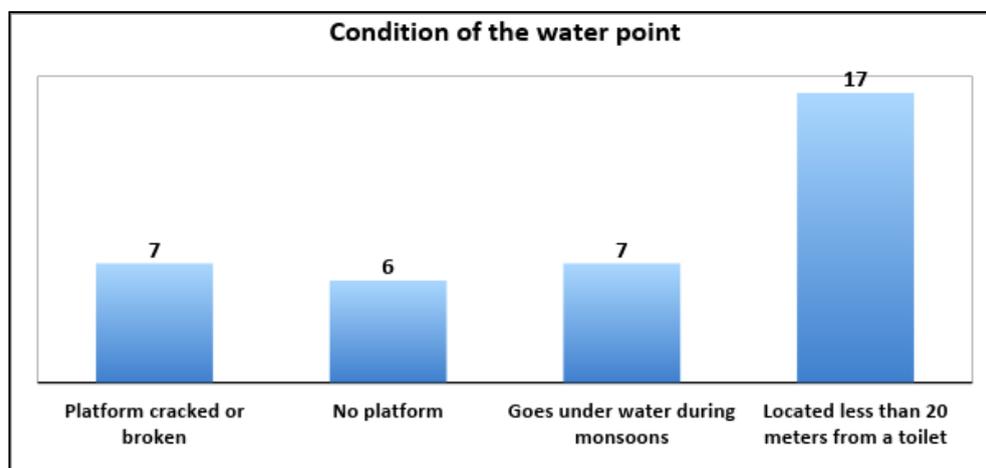
⁶ Parameters tested included pH, Iron, Electrical conductivity and Coliform



Above: Perception about water quality and water quality test results from the water point mapping exercise. Data from Akvo Flow

Only very few in the village could remember their water ever being tested. Almost all stated that if tests had been done by the government, the results were never shared with the villagers. Waterborne ailments were common but were not being linked to the poor quality of drinking water, which was caused by broken platforms, improper drainage, and poor maintenance. Information from the survey helped the community to identify the hand pumps with these problems. One-third of them had either damaged or no platforms, allowing pollutants to leak into the water source. On top of that, 45% had toilets less than 20 meters away⁷.

A large unattended open drain ran along many of the water points in the village. Seven of the hand pumps had become submerged underwater during the monsoons.



Above: Problems observed in the handpumps covered in the water point mapping exercise. Data from Akvo Flow

⁷ According to MDWS handbook, there should be a safe distance of 10 meters from drinking water source to the toilet pit. https://mdws.gov.in/sites/default/files/Final%20Draft_Handbook%20MDWS%20WaterAid%20%20onsite%20sanitation.pdf

Discussions around water quality reports prompted the community to identify the causes behind the contamination. The most critical issue that emerged was water quality contamination due to open drains alongside many of the water sources and the broken or cracked platforms. Community members jointly discussed the possible actions that were needed with the Gram Panchayat and urged them to prioritize these action points in the annual plan agendas. A list of short and long term solutions was submitted to the Gram Panchayat members which would be used to influence planning and adequate resource allocation in the village annual plans.

FROM EVIDENCE TO ADVOCACY

Lack of awareness and participation of the community in the planning process was identified as the key problem impacting the sustainability of WASH services in Puruna Chhatrapur. The inhabitants faced challenges on a daily basis but were unable to voice their needs in a convincing manner to their village leaders. The GP members, in turn, tried to make the best of available funds, which they invested in creating new infrastructure to gain popularity.

In the first three years of its presence, the Watershed programme has built capacities of locals and provided a platform for all stakeholders to come together, promote transparency about the planning process, and provide information about additional resources and how to access them. During the PRA exercise, villagers prepared a ground map of village assets for the first time, together with the VDC⁸ and VWSC⁹ members, the Mukhiya¹⁰, Aanganwadi workers and SHG¹¹ members.

This was followed by several focus group discussions with the village women in which the resource map was shared and their opinions sought. A consensus about the WASH priorities of the village was finally reached and it was decided by the villagers and their elected representatives that the focus should be on repairing and extending existing piped water supply and drainage, rather than installing new infrastructure.

Capacity building inputs of the Watershed programme also empowered the villagers with better information about their entitlements and available resources for WASH in government policies and programs. Specifically, the workshops with the PRIs and CSOs focused on the planning processes, information on the roles and responsibilities of concerned institutions, and the budgetary flows. Further, participation in meetings organized by the Watershed team enabled the PRIs and the CSOs to voice their concerns with the local line department, which helped them further their agendas with the departments and take their advocacy efforts forward.

⁸ VDC- Village Development Committee

⁹ VWSC – Village Water and Sanitation Committee

¹⁰ Mukhiya is the village head

¹¹ Self Help Group members, who are mainly women

along with the Panchayat Samiti members. The allocation for Puruna Chhatrapur was increased to INR 12,00,000 to also include the repair of damaged pipelines in addition to the new ones planned.

Meanwhile, the PRI members decided to address the problem of repairing the motor pump that was lying defunct as its wires had been stolen and not replaced. Water supply was disconnected on account of this in some parts of the village. The PRI members allocated additional resources for the repair of the pump and increased the outlay for piped water supply from INR 2,00,000 to INR 4,00,000.

Using the evidence from the water quality survey in their villages, the PRIs highlighted their concerns with the department. Although it was part of their mandate, water testing was rarely conducted earlier. At the insistence of the PRIs, the government department sent its own water testing team to validate the evidence shared by the Watershed team. The results of both tests matched and, since then, the government has intervened to track water quality in the village. Two handpumps that were found to be discharging contaminated water were declared unsafe and sealed by the department.



Above: Water quality data for tested water sources in Puruna Chhatrapur. Data from Akvo Flow. Village-level dashboard for Puruna Chhatrapur: <https://watershedsouthasia.akvolumen.org/s/ePDDg0qknak>

Additional budgetary allocation for the operations and maintenance of two other handpumps was approved and their broken platforms were repaired to prevent leaching of contaminants into the drinking water.

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Above and below: Identified issues addressed in village annual plans: Tubewell platform repair and Village drain construction completed. Photo credit Gram Uthan.



Repair of the main drain, which was another priority demand of the villagers, was also addressed by the department and physical verifications by the Watershed partners confirm completion of the repair. This will go a long way to restricting contamination of water sources in several villages of Puruna Chhatrapur.

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