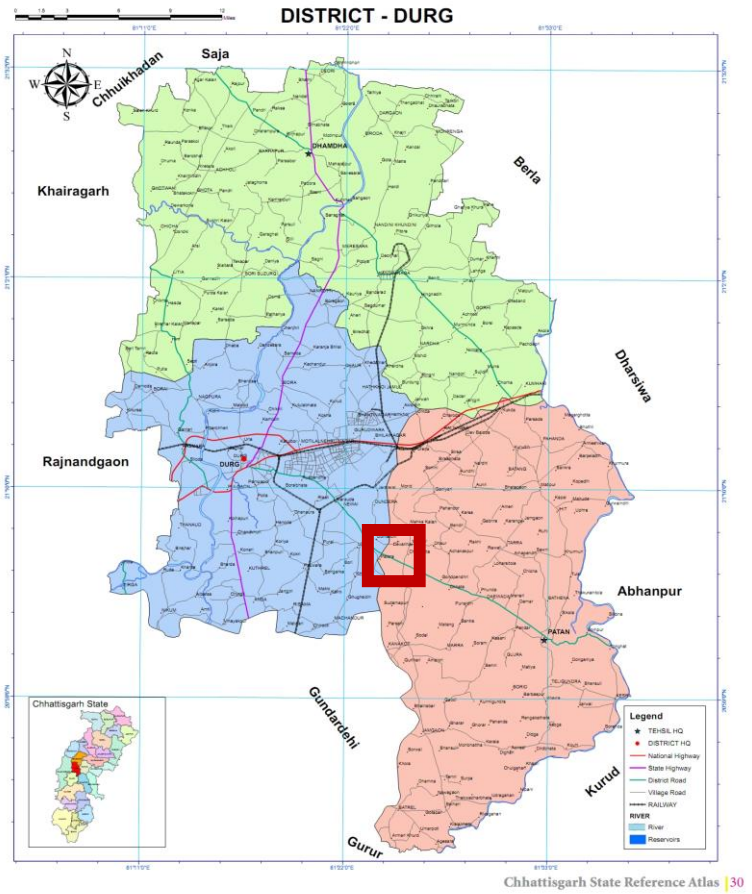
Community leading faecal Sludge management activities
A case of Patora Gram Panchayat, Chhattisgarh

Patora- The first Panchayat of Chhattisgarh with a Faecal Sludge Treatment Plant (FSTP) and desludging vehicle

Demographic Parameter	Details
Location	Patora, Patan Block, Durg District, CG
Distance from Head Quarter (District-Durg)	15 KM
Population (approx.)	3935 persons
Number of Households	895 households
Scheduled Caste population	Around 40%
Primary Occupation	Agriculture and wage labor
Literacy Rate (approx.)	65%
Water Supply Source	Handpumps, piped water, and borewells
Sanitation Coverage	**ODF on 15 Aug 2016 and ODF Plus Model on 28 Aug 2021**
Solid Waste Management	Managed by Gram Panchayat through GP
FSTP Beneficiary Villages	108 nearby GP
Ponds	05
Handpumps	11
Soak pits	60
Nadep	32
Vermi compost tank	20
Grey water treatment plant	01



How did Patora become the first Panchayat with Faecal Sludge Treatment Plant?

Patora became ‘Open Defecation Free’ in 2016 with 100% toilet coverage.

Looking at Panchayats interest to scale up sanitation activities, Swachh Bharat Mission-Grameen and other technical agencies supported construction of a Faecal Sludge Treatment Plant (FSTP) in the village.

WaterAid, a technical agency, was entrusted to support in construction and initial handholding to the Gram Panchayat.

A detailed feasibility assessment undertaken which involved technical survey, site specific survey, and demand assessment.

The FSTP was designed to cater 13,877 people in 2,803 households in 5 nearby Gram Panchayats.

After completion, the FSTP was inaugurated in Aug 2021 and initially WaterAid supported its operational cost. On 29 March 2023 plant was handed over to GP.

FSTP Patora

About Faecal Sludge Treatment Plant - Patora

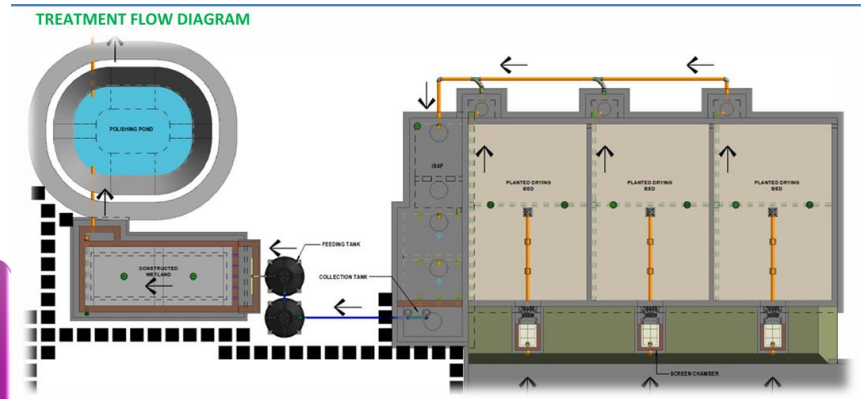
The plant has a capacity to treat 9 Kilo Litres of Faecal Sludge per week (2 tractor loads). Now the capacity is 11 Kilo Liters (Expand 2 Kilo Liters) The capacity was determined looking at the current and future demand for desludging.

Simple DEWATS technology with limited dependency on electricity and less O&M requirements were adopted.

It has different modules- Screening chamber, planted drying bed , integrated settler, anaerobic filter, planted gravel filter and a polishing pond to treat the wastewater in stages. On the basis of Slope of the terrain Natural Gravity Flow and use of Motor.

The initial cost of plant was Rs.30,87,000/-. Later an additional cost of 6,50,000/- was incurred to construct a shed and improve efficiency of the plant during rainy season.

Additionally, a room for operators, a toilet and garden were developed for the FSTP.



Technical Specifications and Operation

Plant Capacity	Can treat up to 11 kiloliters of sludge per week Built to handle rural-scale sanitation needs
Operational Model –	Managed by Gram Panchayat with SHG support Driver and helper are engaged for daily operations
Performance Metrics	Treated 11 lakh liters of faecal sludge till date Generated 6 metric tons of compost in 4 years
Compost Utilization	6 metric tons of compost generated Supports local agriculture and sustainability

Financial Viability and Revenue Model

User Charges and Earning –

₹1500 to ₹4000 per trip based on distance

Charges fixed by respective Gram Panchayat

Around 15 Trip per Month, Approx. Income 45,000

Expenditure–

Driver & Operator- 15000 PM

Diesel – 15000 PM

Miscellaneous - 1600 PM (Total Monthly Exp.31,600)

Plan Operation yearly-20,000

Annual Expenditure is ₹3.99 lakh

Yearly revenue is ₹5.40 lakh with ₹1.42 lakh profit

Sustainable Model –

Low maintenance requirements

Simple operations and community-based management

Why is Patora a model on Faecal Sludge Management?

Faecal sludge treated since 2021

- 11 Lakh litres of faecal sludge.

Helped in scaling up the learnings–

- Many delegates from Chhattisgarh and other States have visited the plant.
- 33 small scale FSTPs across Chhattisgarh
- Multiple training programmes were undertaken for rural engineering staff and other government and non-governmental people

Women Empowerment & Livelihood -

- SHGs engaged in account management and manure preparation & packaging.
- Created livelihood options for desludging operators

Improved Sanitation –

- Led to women empowerment
- Women SHGs are managing SLWM activities and Plastic Waste Management Unit.

Self sustainable –

- FSTP resulted in earning revenue for the Panchayat.
- No additional financial burden

Innovative practice of preparing Swa-Ansh from Faecal sludge

Process of preparation of Manure from Faecal Sludge -

COLLECTION OF DRIED SLUDGE

MIXING THE DRIED SLUDGE WITH OTHER WASTE/ BIOLOGICAL MATERIALS

MAINTAINING OXYGEN FOR MICROBIAL ACTIVITIES

TEMPERATURE AND MOISTURE LEVELS

MONITORING CARBON AND NITROGEN IN THE MIXTURE

Swa-Ansh (Manure) tested/certified –

The sample was tested by local Bio Fertiliser and Organic Fertiliser Testing and Quality Control Laboratory

Selling of Swa-Ansh (Manure)

Support from local SHGs.

Sold in 1,2 and 30 KG packs at Rs.30, Rs.50 and Rs.600/- respectively.

Earning by Swa-Ansh (Manure)

The panchayat has earned a revenu of more than 30,000/-

Process of production of "Sw-Ansh"

Awards and recognitions

Patora’s achievements are recognized many times at State and national level to motivate other GPs to excel in rural sanitation activities.

Some of the notable awards and recognitions are as follows:

- **Best Segregation Shed Award 2020**
- **Swachh Panchayat Samman 2022 and 23**
- **Swachh Sujal Shakti Samman 2023**
- **Patora’s case study shared in National Good Governance workshop**

Awards of Gram Panchayat Patora

Expansion and Replication

- **Statewide Rollout**
  - Chhattisgarh adopted this model across 22 districts
  - 33 rural FSTPs have been constructed
- **CSR and Vehicle Support –**
  - 10 desludging vehicles provided in 10 districts (Tractor Mounted)
  - De-Sludge Vehicle – Cost around 15 Lakh
  - Urban vehicles used wherever possible
- **Operational Models**
  - Model 1: GP/SHG handles operations where vehicles are available
  - Model 2: PPP mode with private parties handling desludging

Challenges in Implementation

Vehicle Availability	• Desludging vehicles not funded under SBMG • Reliance on CSR and urban vehicles
Transportation	• Distance of Villages from the Plant • Rural Household cannot afford
Low Demand Issues	• Oversized septic tanks delay the need for emptying • Awareness generation required to boost demand
Sustainability Concerns	• Long-term community engagement • Continuous technical and logistical support needed

Way Forward and Recommendations

Enhance Vehicle Availability –

Seek CSR and government partnerships or convergence with Urban

Expand fleet for uninterrupted desludging services

Capacity Building –

Train local youth and SHG members

Conduct regular skill enhancement workshops

Demand Generation –

Awareness campaigns on benefits of timely desludging

Involve community leaders to promote usage

Strengthen PPP Model –

Encourage private participation through clear EoI formats

Monitor performance to ensure accountability

Thank you