Phulera and Sambhar are neighbouring towns, located in Jaipur district of Rajasthan. Both towns rely on onsite sanitation systems (OSS) and there is no underground drainage (UGD)*. The OSS are desludged using mechanical equipment, such as vacuum pumps; and the faecal sludge was being indiscriminately disposed onto vacant farmlands on the outskirts of the town, posing health and environmental risks.

Rajasthan Urban Infrastructure Development programme (RUIDP), with financial support from The Asian Development Bank and The Bill and Melinda Gates Foundation, chose to demonstrate town-wide Faecal Sludge Management (FSM) in three towns in Rajasthan - each based on a different technology. Phulera-Sambhar were selected as a cluster to be served by a common Faecal Sludge Treatment Plant (FSTP). We supported IPEGlobal, the implementing agency, with the design engineering, construction monitoring and commissioning of a 20 KLD Faecal Sludge Treatment Plant (FSTP) for the town.

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### Phulera

- **Location**: 62 kms from Jaipur
- **Population**: 23,989
- **Projected Population (2027)**: 30,500
- **No. of Households**: 3,869
- **Access to toilets**: 100%
- **Underground Drainage System**: 0%
- **Septic tanks/Pits Coverage**: 96.5%

### Sambar

- **Location**: 80 kms from Jaipur
- **Population**: 22,413
- **Projected Population (2027)**: 24,913
- **No. of Households**: 5,206
- **Access to toilets**: 100%
- **Underground Drainage System**: 0%
- **Septic tanks/Pits Coverage**: 95%

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*0.1% of households in Phulera and 5% of households in Sambhar discharge their blackwater into open, stormwater drains.

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1 Based on 2017 SLB data shared by ULB
Timeline


Operational Model:

The project was tendered out as a Build-Operate-Transfer (BOT) model. Construction and operations (for one year i.e. Jan 2020 to 2021) were undertaken by a private organization (Divija Construction), before being handed over to the ULB. The ULB, currently, operates the FSTP and bears all operational expenditure too.

The ULB is also responsible for collecting faecal sludge from households - regulating private operators, as needed. Sale of by-products (i.e. bio-solids) from the FSTP serve as an additional source of revenue for the ULB.
Outcomes:

The project is a successful pilot for demonstrating a FSM system, which caters to two ULBs. This is India’s first FSTP to serve a cluster.

It also highlights (along with the successful pilot demonstration at Khandela) how FSM is an effective and economical solution for safe sanitation; motivating ADB to include FSM as one of their sectors for investment within sanitation. By showcasing FSM interventions across the sanitation value chain, it serves as a model for effective Faecal Sludge and Septage Management (FSSM), improved urban sanitation as well as public health - for small and medium ULBs across Rajasthan to learn from. Moreover, it has also resulted in the roll out of a state-level FSM Policy and Guidelines - making Rajasthan one of the first states in India to do so.

Learnings:

In India, there are many small towns that are located in close proximity to each other. By pooling in resources, these towns can jointly share the cost of the infrastructure and thereby, manage the sanitation situation in their towns effectively.

Capacity-building is essential to ensure sustainability of sanitation infrastructure. At Phulera-Sambhar, capacity building was carried out for desludging operators and city officials, to ensure they were well-versed with the new system and resulting processes.
Treatment Process at the FSTP:

Screen Chamber → Stabilisation Reactor → Sludge Drying Bed

Collection Tank 1 → Settler → Anaerobic Filter

Settler → Collection Tank 2 → Planted Gravel Filter

A picture of the treatment plant when under construction