

## **Pilot DEWATS for Demonstrating I&D @ K100 Rajakaluve, Bangalore by CDD India**

### About K100 Rajakaluve

The Koramangala Valley drain (K100) is one of the major stormwater drains (locally known as Rajakaluve) which originates from Shanthala silks near erstwhile Dharmabuddhi lake (now Majestic bus stand) and flows in the city center before draining out into Bellandur Lake. The entire catchment of the K100 Rajakaluve is 32 sq. km and it runs for a length of 11.4 kms. The secondary joining drains are about 16.66km long and in total, the total length of the K100 ecosystem is 28.06km. As per the Topography of the city, Bengaluru has three major natural valley/drainage zones and three minor ones. The major valleys are Vrishabhavathi Valley, Koramangala-Challaghatta Valley, and Hebbal Valley. The minor valleys are Tavarekere, Kathriguppe and Arkavathi. K100 Rajakaluve falls under the Koramangala- Challaghatta Valley.

Due to the Rampant urbanization in the catchment led to the deterioration of K-100 as well as other drains that join into it. Apart from encroachment, the major challenge that these storm drains face is the unchecked wastewater inflows into the SWDs from municipal drains. It is a problem that exists despite the city having centralized treatment systems and sewer networks. This is because there are untapped sections even in core city areas which are not connected to the central sewer network. This is especially true of low-income settlements which are densely packed and face space constraints. Other than these, disposal of solid waste and silt deposition are the reasons for its current state. To improve the K-100 SWD condition, the K-100 Citizens Waterway Project was initiated by the local administration to restore the rajakaluve network as an ecological corridor. The rejuvenation works include desilting, retrofitting/reworking the retaining walls wherever necessary, arresting sewage inflows from nearby HHs/industries, and creating pathways for stormwater arrangements that have already been taken up. Nevertheless, a comprehensive evaluation of wastewater flow in the drain and its parameters was absent.

### CDD India's Approach for Pilot I&D DEWATS™ @K100 Rajakaluve

#### **Situation Assessment**

- Comprehensive study of the 1st stretch of K100 Rajakaluve
- Mapping areas and points of disposal of untreated wastewater into drains
- In-depth analysis of wastewater generation - Quality and Quantity in 3 Slums

#### **Site Selection criteria**

- Waterlogged during monsoons
- Reported overflows from sewer manholes
- Comparatively higher pollution levels from the samples analyzed

#### **Approach**

- Intercept & Divert greywater generated by the D'Souza Garden slum
- Consider wet weather and dry weather flows
- Treat and dispose 10 KL of greywater and dispose it back into the drain
- Treatment modules underground till secondary stage due to limited space

## Key Features of the intervention

### Key I&D Components

- Silt Trap
- Intake arrangement
- Interception wall /Overflow Weir
- Diversion to treatment
- Medium Screens

Table 1 – DEWATS™ Treatment Modules adopted for 10 KLD system in 20 Sqm Area underground

Sl. No.	Treatment Stages	Treatment Modules
1	Interception and Diversion	Silt Trap, Interception wall/Overflow weir and Intake arrangement
2	Pre-treatment	Medium Screens
3	Primary Treatment	Settler/Sedimentation chamber
4	Secondary Treatment	Anaerobic Filter (AF)

## Operations, Maintenance & Performance

Since its commissioning, the treatment system has been monitored for its inflow quality & quantity variance. Periodically – Solid waste removal, silt removal and other maintenance works have been taken up by BBMP. The treatment plant is adhering to the prescribed secondary discharge standards set by the Pollution Control Boards (PCB).

With its nature-based approach and minimal operations, the I&D greywater treatment system has been functioning for more than one year. The tertiary treatment part is under consideration for approval.



Representational Image of Interception and Diversion at 10 KLD DEWATS™ Site in Dsouza Garden

In summary, the greywater treatment system implemented at D’Souza Garden Slum has effectively addressed local challenges. This not only contributes to enhancing environmental sustainability but also sets up a benchmark for adoption of I&D systems using NBS in Non Sewered Sanitation contexts.