

# Chintamani Water Balance

Comprehensive Tool For Climate Resilient Water Management In Small Town

Authors: BORDA South Asia, TIDE and WellLabs



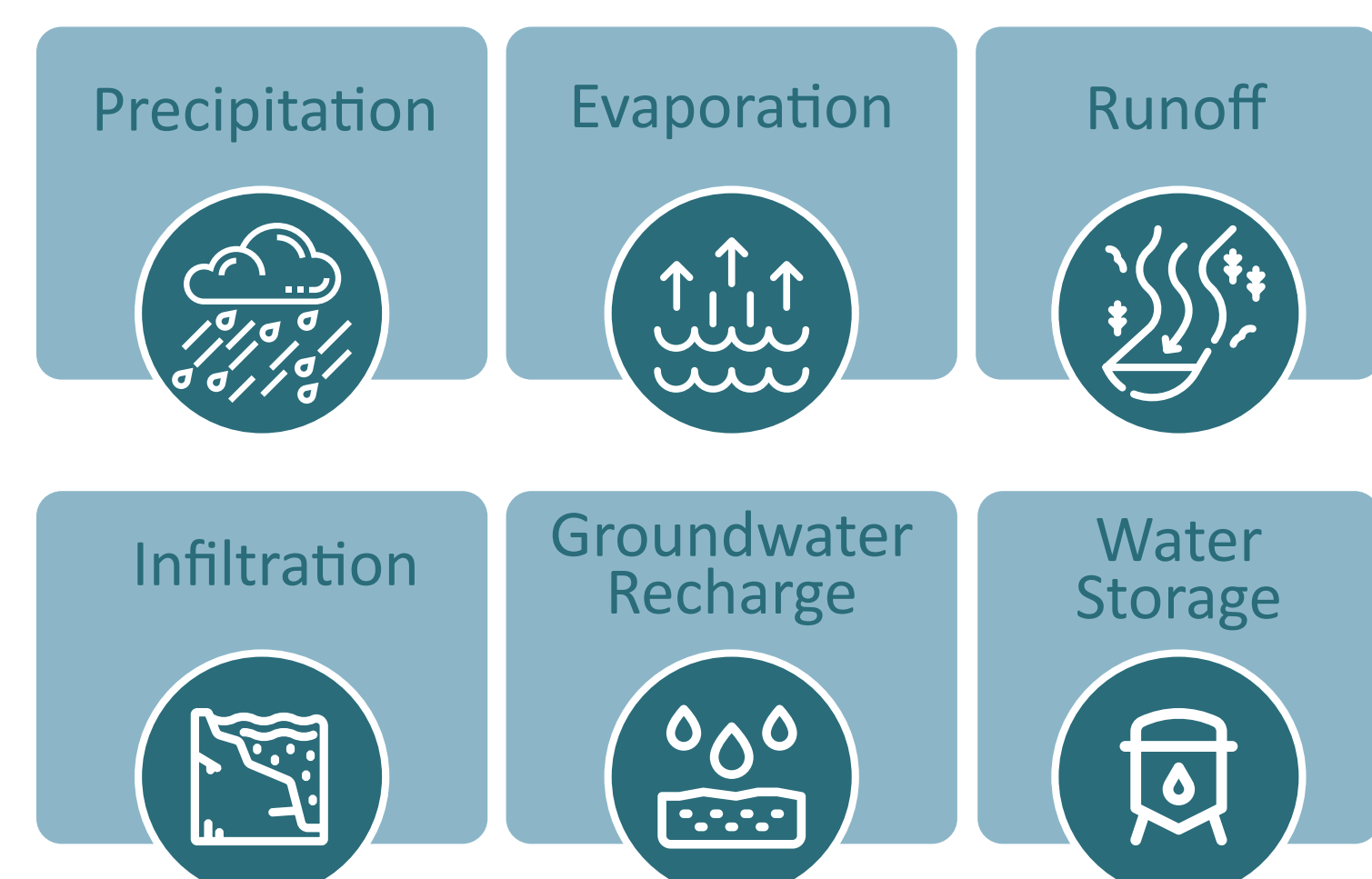
## WHAT is water balance?

A water balance diagram is a tool used to represent and analyze the movement and distribution of water within a specific system or region. It provides a visual representation of the inputs, outputs, and changes in water storage within the system.

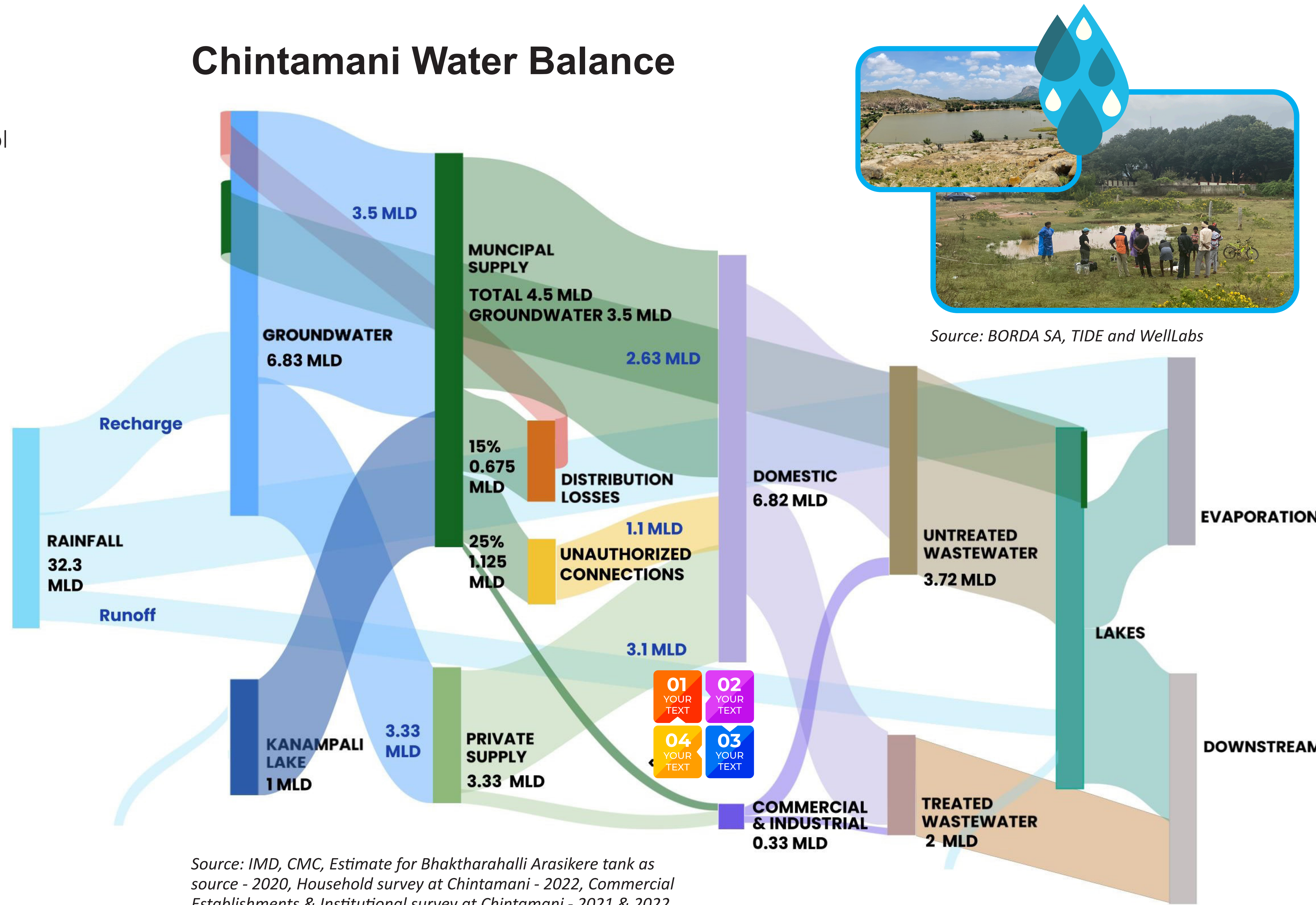
## WHY water balance?

- 1 Understanding Water Flow
- 2 Identifying Sources and Sinks
- 3 Water Resource Management
- 4 Climate Studies
- 5 Decision making
- 6 Environmental Impact Assessment
- 7 Urban Planning
- 8 Policy Development

## HOW is water balance created?



## Chintamani Water Balance



Source: BORDA SA, TIDE and WellLabs

Source: IMD, CMC, Estimate for Bhaktharahalli Arasikere tank as source - 2020, Household survey at Chintamani - 2022, Commercial Establishments & Institutional survey at Chintamani - 2021 & 2022

In South Asia, the study of small and medium towns is critical for local economies and regional development, particularly in addressing water management challenges. The JJM (U)/AMRUT initiative in India mandates water balance plans for 4378 towns, prioritizing strategies like wastewater recycling. The town of Chintamani, located in Southern India, exemplifies pressing water issues, including sporadic supply cycles, reliance on private borewells, and insufficient wastewater treatment. Chintamani serves as a microcosm, underlining the broader imperative for context-specific interventions to ensure water security in similar regions grappling with changing climate patterns.

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## Key Insights

- Groundwater is overexploited:** Around 100 municipal borewells run interchangeably 24x7 to meet 40% of the town's supply. An additional 40% is met via private borewells and tankers.
- The aquifer is depleting:** Chintamani is underpinned by hard rock aquifers characterised by limited storage potential. This leads to limited recharge. Data and knowledge gaps prevent effective aquifer management.
- Lakes are polluted:** 65% deficit in sewage treatment capacity results in raw sewage entering water bodies and rendering surface water unusable.
- Electricity bills are high:** Over 40% of the municipality's operational expenses is spent on water supply infrastructure – mainly for power bills – and little is recovered through user fees as Non-Revenue Water loss is high.
- Planning is fragmented:** There are multiple agencies involved in water and sanitation schemes that usually work in silos at the planning phase. This results in fragmented implementation and suboptimal outcomes.

