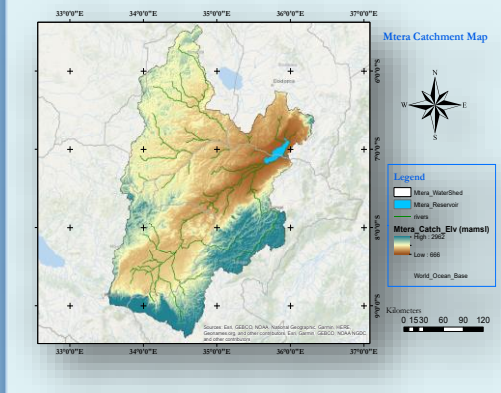
RUFIJI BASIN WATER BOARD

Monthly Hydrological Bulletin Report (Mtera Dam) March (2026)

1 Summary of water status

The Mtera Dam receives water from three main rivers: the Great Ruaha, Little Ruaha, and Kizigo. These rivers are part of the Great Ruaha Catchment, which is vital for hydropower generation, farming, domestic use, and environmental sustainability. By 29 March 2026, the Mtera Reservoir reached its Maximum Operational Level of 698.5 m.a.m.s.l. and rose further to 698.81 m.a.m.s.l., necessitating the opening of spillway gates on 31 March.

Rainfall in the Great Ruaha, Little Ruaha, and Kizigo catchments kept inflows strong, sharply raising reservoir levels. River inflows increased significantly, with discharge rising from 68.0 m³/s in February to 267.0 m³/s in March (a 293% increase). The Great Ruaha and Kizigo Rivers recorded flows far above their long-term averages, while the Little Ruaha remained moderately above average. This surge boosted hydropower generation and downstream water supply but required careful spillway regulation to manage flood risks.



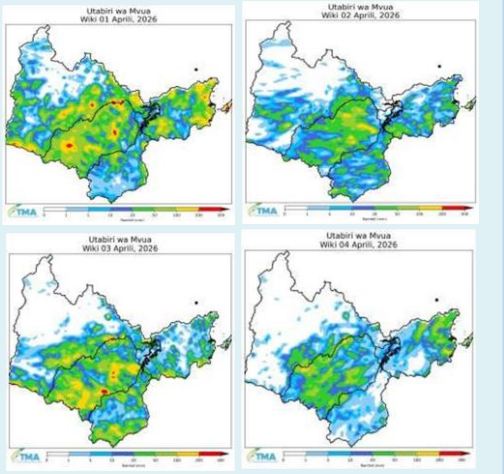
2 Weather Situation

Weather Summary – March 2026:

Records from weather stations show that rainfall in many parts of the Rufiji Basin catchments was **average to above average during March 2026**. This rainfall pattern increased river flows across the basin, raised water levels, and contributed to changes in the overall water situation.

Weather Outlook – April 2026:

Rainfall is expected to continue across the Rufiji Basin during April 2026, as issued by the Tanzania Meteorological Authority (TMA). The first week will bring rain in many areas, followed by some rainfall in the second and third weeks, and only a few areas receiving rain in the fourth week.



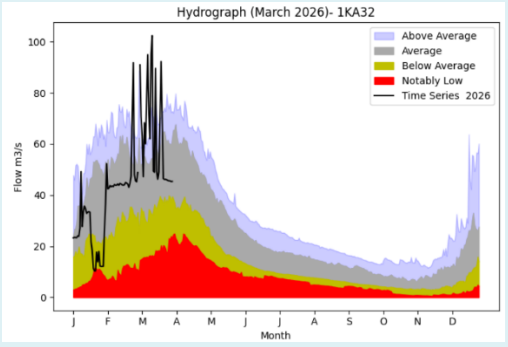
3 River flow Situation

During March 2026, the inflow to the Mtera Reservoir rose sharply compared to the previous month. Discharge increased from **68.0 m³/s in February to 267.0 m³/s in March**, reflecting sustained rainfall across the upstream catchments. This improvement in reservoir conditions represents about a **293% increase**. The surge was mainly driven by the **Great Ruaha and Kizigo Rivers**, both recording flows far above their long-term averages, while the **Little Ruaha remained moderately above average**.

S/N	Stations Code	River	Avg Flow Cumecs (Mar) 2026	LTA Cumecs 2000-2025 (Mar)	Remarks
1	1KA59	Great Ruaha at Msembe	500.6	176.4	Notable High
2	1KA31	Little Ruaha at Mawande	60	45	Above Average
3	1KA42A	Kizigo at Chinugulu	242	58	Notable High

Hydrological Implications

The sharp rise in inflows during March 2026 raised the Mtera Reservoir to its full supply level of 698.5 mamsl, triggering the need for controlled spilling. While this condition enhances hydropower generation efficiency and ensures a stable electricity supply, it also demands careful regulation of spillway operations.



4 Reservoir Water Levels

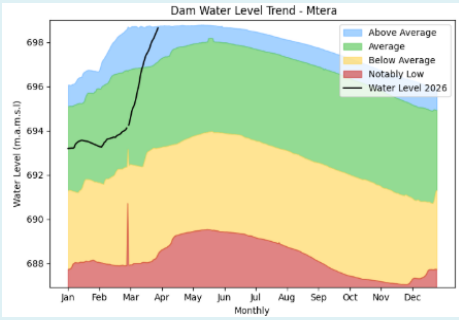
By 29 March 2026, the Mtera Reservoir had already reached its Maximum Operational Level (MOL) of 698.5 m.a.m.s.l. This condition necessitated the opening of spillway gates on 31 March 2026 at 5:42 PM, after water levels exceeded MOL and rose to 698.81 m.a.m.s.l.

Analysis

- **Upstream inflows:** Rainfall in the Great Ruaha, Little Ruaha, and Kizigo catchments kept inflows strong.
- **Storage implication:** Rising inflows quickly raised reservoir levels. Even small increases added large volumes, boosting hydropower and downstream supply.
- **Spill condition:** Once the reservoir reached its Maximum Operation Level it necessitates a controlled spilling to protect the dam, manage downstream flows, and reduce flood risks while keeping electricity stable.

April 2026 Outlook

With the reservoir spilling at the end of March, inflows are expected to stay high in April due to continued rainfall in the Great Ruaha, Little Ruaha, and Kizigo catchments. Reservoir levels will likely remain close to the Maximum Operational Level. Spillway operations will therefore continue to release excess water safely. Careful spill management will be needed to protect dam safety, regulate downstream flows, and reduce flood risks to the downstream infrastructures and communities.



5 Recommendations

Water entering the Mtera Reservoir rose sharply in March 2026 due to efforts done in sustainable management of the catchment as well as the heavy rainfall received in upstream catchments. Reservoir levels went above the Maximum Operational Level, leading to the opening of spillway gates to release excess water. Controlled releases will continue in April to keep the dam safe, manage downstream flows, and support hydropower generation.