

Thottappally Spillway: A Way Forward - Part -02

The Thottappally Spillway is Kerala's crucial flood discharge outlet from Kuttanad into the Arabian Sea. Over the years, its efficiency has been impaired by sand-bar formation at the sea mouth, sedimentation in the leading channel, and weakening of the spillway structure. Modernisation and strengthening works have been envisaged to restore its original discharge capacity and ensure safety against recurrent floods.

At Thottappally, the practical pathway used for desilting/sand-bar removal was DDMA + WRD execution rather than a standard CRZ/EC track; this avoided formal EC but triggered prolonged litigation and objections, with KCZMA noting no CRZ application on file and courts ultimately allowing works as disaster-management desilting.

Clearance & Sanction Status

- **Environmental Clearance (EC):** Not required for desilting/flood-mitigation works, as confirmed by the Kerala High Court under Appendix-IX of EIA 2006.
- **CRZ Permission:** Court upheld that urgent sand-bar removal at the Pozhi mouth can proceed under the Disaster Management Act (DM Act). Formal CRZ clearance remains a desirable procedural step for future non-emergency works.
- **Wetland Rules:** Since Thottappally falls within the Vembanad–Kol Ramsar site, concurrence from the State Wetland Authority (SWAK) may be sought in the medium term. However, past works proceeded under emergency exemption.

Legally Defensible

Now it's time to start urgent works under DM Act authority; long-term sustainability requires parallel permissions, and can be done along with. The following are current works envisaged for Modernisation / Renovation / Strengthening.

1. **Leading Channel Deepening & Desilting**
 - Removal of silt and obstructions to restore hydraulic flow.
 - Annual sand-bar clearance at Pozhi mouth for free sea discharge.
2. **Spillway Structural Strengthening**
 - Rehabilitation of shutters and gates.
 - Strengthening of embankments and training walls.
3. **Hydraulic Efficiency Enhancements**
 - Widening of approach channel.
 - Removal of choke points to ensure design discharge capacity.
4. **Safety & Monitoring Systems**
 - Installation of real-time flood monitoring and gate automation.
 - Strengthened bunds and auxiliary sluices for additional resilience.

Present Stage (2025)

- **Clearance Status:** Litigation hurdles largely resolved; works can proceed under DM Act framework.
- **Execution:** WRD has resumed **sand-bar clearance near Pozhi mouth (August 2025)** to ensure monsoon readiness.
- **Sanctions:** Funding sanctions are modest (₹47 crore targeted), and early release is awaited.
- **Risk Management:** Legal defensibility is strong, but **formal CRZ/Wetland clearances** should be pursued in parallel to avoid future audit or regulatory objections.

Pending Issues

Land Acquisition & Encroachment. Expanding the leading channel is stalled by land acquisition challenges and encroachments, limiting capacity improvements.

Lack of a Sustainable Anti-Sandbar Strategy. Current sand removal remains reactive and short-term. There's no permanent or scientific mechanism to prevent recurring sandbar formation.

Regulatory & Governance Gaps. Sand removal under "Disaster Management" bypassed **CRZ, environmental, and mining clearances**, exposing governance lapses. Entrusting mineral extraction to agencies like KMML without clear flood-focused frameworks raises accountability concerns.

Sedimentation Across the Lake System. Reduced lake depth and clogged river mouths have broader implications, affecting navigation, ecology, and flood resilience, beyond just the spillway.

Ecological and Fisheries Impact. While modernization focuses on flood mitigation, **ecological impacts**, such as disruption to fish migrations due to altered salinity regimes, require parallel assessment (even though more commonly discussed for the Thanneermukkam bund, similar concerns apply).

Conclusion

The modernization and operational strengthening of the Thottappally Spillway are currently progressing, but in fragmented, issue-specific silos rather than through an integrated programme. Many structural gaps remain. A composite DPR covering leading channel widening, permanent anti-sandbar engineering, and ecological safeguards is still pending submission. Without this, CRZ and Wetland clearances will remain piece-meal and delay sustainable solutions. Other priorities are; issue land acquisition notifications and create a dedicated funding line under KIIFB and or create a full-fledged Kuttanad Mission; prepare and submit a composite DPR integrating WRD engineering works with SWAK/CWRDM ecological studies; and initiate a permanent Pozhi solution through guide bunds/groynes after CRZ/Wetland clearance. Lastly, link the Spillway Modernization Plan with the Vembanad Lake Rejuvenation Project for holistic flood mitigation.

The Thottappally Spillway stands at a crucial juncture. With legal clarity secured and works re-initiated, Kerala is now in a safe stage to begin immediate modernization and desilting under DM Act authority. The challenge is to ensure that parallel clearances are formalised and structural strengthening progresses without further delay, so that Kuttanad gains lasting protection from devastating floods. These processes began in 2014 and is on till date, a decade long tryst with the livelihoods of the people of Kuttanad, need be overcome collectively.

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