

# African Journal of Climate Science and Vulnerability Assessment

## Flood-Resilient Road Design Standards for the Sudd Wetland Region of South Sudan

Editor-facing summary of reviewer feedback and final decision

<b>Decision</b>	Reject
<b>Authors</b>	Aduot Madit Anhiem
<b>Journal</b>	African Journal of Climate Science and Vulnerability Assessment
<b>Date</b>	24 Mar 2026

### Reviewer Snapshot

Reviewer	Recommendation	Major	Minor
Reviewer 1	Major Revision	3	3
Reviewer 2	Reject	3	3
Reviewer 3	Major Revision	3	3

### Editorial Decision

The current consolidated editorial decision is reject. Human editorial verification remains required before publication.

### Required Changes

- Provide comprehensive methodological details for all analytical components, including data sources, processing steps, model parameters, and validation procedures
- Include sensitivity analysis for the benefit-cost calculations and compare results with similar infrastructure projects in comparable environments
- Expand the discussion section to address implementation challenges, maintenance requirements, and adaptation strategies for local constraints
- Clarify the study's limitations regarding data quality, model assumptions, and generalisability to other wetland regions
- Insufficient methodological detail on the hydrological modelling approach, particularly regarding data sources, validation procedures, and uncertainty quantification for the Log-Pearson Type III distribution application
- No validation or sensitivity analysis for the benefit-cost calculations, with the reported NPV of USD 4.7 million per kilometre appearing exceptionally high without supporting evidence or comparison to regional benchmarks
- Inadequate consideration of practical implementation challenges in South Sudan's context, including construction material availability, local technical capacity, maintenance requirements, and security constraints affecting infrastructure projects
- Conduct and report field validation of proposed standards through pilot implementation
- Provide complete methodological details for benefit-cost analysis with sensitivity testing
- Extend hydrological analysis with longer-term data and ground verification

- Address construction and maintenance practicalities in conflict-affected environment
- Inadequate validation of proposed standards through field trials or case studies
- Questionable benefit-cost analysis methodology with unrealistic NPV figures (USD 4.7 million per km) unsupported by transparent calculations
- Over-reliance on remote sensing data (2010-2023) for flood frequency analysis without ground-truthing or consideration of longer-term climate variability
- Provide a detailed methodology section including remote-sensing data sources, processing steps, and validation metrics for the flood frequency analysis.
- Justify the 25% climate change surcharge with regional climate model projections or peer-reviewed literature, or replace it with a sensitivity analysis.
- Expand the discussion to address practical implementation challenges: local material sourcing, construction techniques, maintenance regimes, and training needs.
- Include a transparent breakdown of the benefit-cost analysis, specifying all cost inputs, benefit valuations, discount rates, and sensitivity tests.
- Insufficient methodological detail: The paper omits critical information about the remote-sensing data sources, processing methods, and validation procedures for flood frequency analysis, making reproducibility impossible.
- Unsubstantiated climate change surcharge: The 25% climate change surcharge on peak discharge lacks justification through regional climate projections or sensitivity analysis, appearing arbitrary.
- Inadequate consideration of implementation feasibility: The proposed standards (e.g., lime stabilisation, geotextiles) do not address local material availability, construction capacity, maintenance requirements, or cost implications beyond the high-level NPV.

## **Ethics and Transparency Checklist**

- Conflicts of interest: Not stated
- Funding disclosure: Not stated
- Data availability: Not stated
- Ethics approval (if applicable): Not stated
- Review method: Automated reviewer simulation requiring human verification before publication.