

## REVIEWER'S REPORT

Manuscript No.: IJAR- 56269

**Title:** From divergence to convergence: Navigating the water-energy-food nexus in case of the Teesta

### Recommendation:

Accept as it is .....

**Accept after minor revision** .....

Accept after major revision

Do not accept (*Reasons below*)

| Rating         | Excel. | Good | Fair | Poor |
|----------------|--------|------|------|------|
| Originality    |        | ✓    |      |      |
| Techn. Quality |        | ✓    |      |      |
| Clarity        |        |      | ✓    |      |
| Significance   |        |      | ✓    |      |

Reviewer Name: **ANAPANA GOPAL**

### Reviewer's Comment for Publication.

#### General Comments

The manuscript examines the long-standing Teesta River water-sharing dispute between India and Bangladesh through the analytical lens of the Water-Energy-Food (WEF) nexus. The topic is highly relevant in the context of transboundary water governance, climate stress, and resource security in South Asia. The attempt to apply the WEF nexus framework to a politically sensitive and strategically important basin is commendable.

However, the manuscript remains largely conceptual and descriptive. While it discusses the nexus extensively, it does not operationalize the framework analytically. There is limited empirical evidence, no modeling, and no structured comparative analysis to demonstrate how the nexus perspective concretely alters policy outcomes. The paper would benefit from clearer research design, stronger analytical structure, and deeper empirical grounding.

Overall, the manuscript has intellectual merit but requires substantial strengthening in methodological rigor and analytical clarity.

#### Content and Originality

##### Strengths

- The application of the WEF nexus framework to the Teesta dispute is conceptually valuable.
- The manuscript situates the Teesta issue within broader debates on resource security and transboundary cooperation.
- It integrates food security, hydropower, irrigation, groundwater depletion, and climate change.
- It highlights stakeholder fragmentation (Sikkim, West Bengal, Bangladesh).
- It connects nexus thinking to SDGs and global governance discourse.

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### Weaknesses

#### 1. Limited Theoretical Innovation

- The nexus literature review is largely descriptive.
- The paper does not clearly define what analytical gap it fills.
- The argument that “nexus approach can solve the dispute” is asserted rather than demonstrated.

#### 2. Lack of Clear Analytical Framework

- The nexus is discussed broadly, but no structured framework is applied to Teesta.
- No explicit indicators, metrics, or scenario comparison are provided.
- No conceptual model linking energy–food–water tradeoffs quantitatively or structurally.

#### 3. Absence of Counterarguments

- Political economy constraints (domestic politics in West Bengal) are acknowledged but not deeply analyzed.
- No assessment of legal constraints under international water law.
- Limited discussion of power asymmetry between upstream and downstream states.

#### 4. Normative Over Analytical Tone

- The paper tends to advocate cooperation rather than critically examine feasibility.
- Policy recommendations are general and not basin-specific.

The originality lies in applying the nexus lens to Teesta, but the contribution would be stronger if the nexus were operationalized more rigorously.

### Technical Quality

#### 1. Methodology

The study states it is:

“analytical, therefore qualitative, where inferences have been drawn from existing literature.”

However:

- No clear methodology section explaining:
  - Selection criteria for literature.
  - Analytical approach (e.g., content analysis, policy analysis, institutional mapping).
  - Framework for evaluation.
- No structured comparative case analysis.
- No primary data.
- No modeling or scenario analysis.

Given the nexus focus, inclusion of even simple comparative matrices or trade-off diagrams would improve rigor.

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#### 2. Use of Data

The manuscript uses:

- Flow data (BCM, cusecs)
- Agricultural statistics
- Hydropower capacity data
- Groundwater decline rates

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However:

- Sources are inconsistently cited.
- Some data appear dated.
- No updated post-2020 hydrological data.
- Climate projections are mentioned but not analyzed.
- No graphical representation of flow variability or seasonal stress.

There is opportunity to include:

- Seasonal flow comparison table
- Irrigation demand vs supply estimates
- Hydropower capacity vs irrigation trade-off modeling
- Groundwater depletion trend chart

### 3. Analytical Depth

The nexus logic is described, but not analytically demonstrated.

For example:

- How exactly would a nexus approach change allocation formula?
- What percentage of water can be optimized?
- What is the quantifiable tradeoff between hydropower and irrigation?
- How much lean-season water can realistically be shared?

The discussion remains conceptual.

### Language and Presentation

The manuscript requires careful language editing.

#### Issues:

- Excessive commas.
- Repetitive sentence structure.
- Overuse of passive voice.
- Occasional awkward phrasing.
- Inconsistent citation formatting (Bazilian et al 2011 vs Bazilian et al. (2011)).
- Some grammatical inconsistencies.

Example:

“Management of the water resources, becomes crucial...”

Comma misuse throughout the manuscript.

The tone is academic but verbose. Sentences could be tightened for clarity and impact.

### Structure and Organization

The manuscript broadly follows academic structure, but improvements are needed.

#### Strengths:

- Clear sections (Introduction, Literature Review, Methodology, Discussion, Results, Conclusion).
- Logical flow from nexus theory to Teesta case.

#### Weaknesses:

1. The “Results” section is actually policy recommendations rather than empirical results.
2. The literature review is long and sometimes repetitive.
3. The nexus framework is not visually structured.
4. Figures are mentioned but not analytically integrated.

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5. No subsection separating political, hydrological, and institutional dimensions.
6. The discussion blends narrative and advocacy.

Suggested structural improvements:

- Add a conceptual model diagram of the Teesta nexus.
- Separate empirical case analysis from normative recommendations.
- Include a policy scenario comparison table.
- Strengthen "Results" by converting it into structured analytical findings.

## References and Citations

### Strengths:

- Broad coverage of nexus literature.
- Inclusion of UN, FAO, UNESCO, IEA, UNECE reports.
- Relevant regional studies included.

### Weaknesses:

- Some web references lack proper formatting.
- Access dates inconsistently formatted.
- Some citations incomplete.
- Mixed citation styles.
- Heavy reliance on reports rather than peer-reviewed articles.
- Some outdated statistics (e.g., 2011, 2012 data).

Reference formatting requires standardization per journal guidelines.

## Overall Recommendation

The manuscript addresses an important and timely issue and has conceptual value. However, it currently functions more as a policy essay than a rigorous academic analysis.

To reach publishable standard, the authors should:

1. Clearly operationalize the WEF nexus analytically.
2. Strengthen methodological explanation.
3. Include empirical or scenario-based analysis.
4. Quantify trade-offs where possible.
5. Improve language precision.
6. Clarify what new insight this paper contributes beyond existing nexus discourse.

The topic has strong publication potential if analytical rigor is significantly enhanced.

## Final Decision:

### Minor Revision Required

The manuscript should be revised to:

- Improve methodological clarity
- Strengthen empirical grounding
- Reduce verbosity
- Enhance analytical depth
- Clarify theoretical contribution

After substantial revision, it could make a meaningful contribution to scholarship on transboundary water governance and nexus-based resource management.