Navigating Indonesia's Sustainable and Climate-resilient Future through Nature-based Solutions (NbS): A Systematic Literature Review

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Introduction

Indonesia faces escalating climate impacts (Djalante, 2018). Indonesia has the largest global NbS potential in the world alongside Brazil, up to 1.5 GtCO2/year (Blaufelder et al., 2021).

What are the progress, enabling factors and hindering risks of NbS implementation globally vs Indonesia?

Objectives:

- Research Focus: Systematic literature review on NbS implementation in attaining Sustainable and Climate-resilient Future globally and emphasize in Indonesia case.
- Focus: NbS programs toward global agenda by identifying factors and hindering risks
- Sampling: literatures from WoS and Scopus (~ 07-06-2024) with total 715 documents

Methodology

Identification of studies via databases and registers

Records identified: (n = 378)
Records removed before screening: (n = 54)
Records assessed for eligibility: (n = 467)
Studies included in review: (n = 377)

Records removed during screening: (n = 54)
Records marked as ineligible by a human: (n = 10)
Records removed for not available of author name: (n = 10)

Records: retrieved: (n = 137)
Records: searched: (n = 137)
Records: total: (n = 715)
Records: excluded: (n = 73)

Review: NbS Types

Results

Based on Figure 2:

- NbS Types and Their Scale Variation

Based on Figure 3:

- NbS implementation with each scale

Based on Figure 4:

- Number of article per year

Based on Figure 5:

- NbS implementation with the targets

Based on Figure 6:

- NbS vs Targets (Total NbS counts: 90)

Based on Figure 7:

- Enable factors of NbS implementations (n case = 26)

Based on Figure 8:

- Hindering risks of NbS implementation (n case = 91)

References


References


https://doi.org/10.1177/1079072110021151

DCA following Moldovskia & Weilo (2017). Figures created by a Python.

Conclusion

This study highlights the potential of Nature-based Solutions (NbS) for Indonesia's sustainable and climate-resilient future. While global interest in NbS is rising, research specific to Indonesia is limited. Mangrove and wetland ecosystems are key NbS types, addressing climate challenges like flooding and drought. Integrating NbS into national strategies for SDGs is crucial, but challenges like stakeholder engagement and governance exist. By identifying enabling factors and hindering risks, this study provides insights to enhance NbS adoption in Indonesia and globally for sustainable development and climate resilience.

Acknowledgments

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Figures

Figure 1. PRISMA processes for literature search and decision.

Figure 2. NbS Types and Their Scale Variation

Figure 3. NbS implementation with each scale

Figure 4. NbS vs Targets (Total NbS counts: 90)

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