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Systematizing Terminologies in Soil Water Bio-Engineering, Naturebased Solutions, and Related Fields: A Critical Review

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The fields of Soil and Water Bio-Engineering (SWBE), Nature-based Solutions (NbS), Ecological Engineering (EE), Green and Blue Infrastructure (GBI), and Engineering with Nature (EWN®) encompass a variety of practices aimed at addressing environmental challenges through sustainable and adaptive methods. However, the inconsistent and overlapping terminology across these disciplines has led to confusion, which impedes effective communication among researchers, practitioners, and policymakers. Preti et al. (2022) conducted a first attempt to compare terms and definitions, leading to the conclusion that SWBE is a discipline that overlaps and, in some cases, complements many NBS-related terminologies. However, the study is in no way exhaustive.

This review begins with an in-depth examination of the current literature on SWBE, providing a detailed overview of the terminology, application areas, and major themes in this field. This foundational insight into SWBE acts as a reference point for comparing and contextualizing results from a meta-review of NBS, GBI, EE, and EWN®. The comparison will identify how specific practices are categorized, exploring whether they are included or excluded within particular disciplines and investigating the reasons behind these classifications. By analyzing these results with the established knowledge of SWBE, the study aims to emphasize similarities, differences, and possible areas for integration. Ultimately, the goal is to offer a comprehensive perspective on SWBE's role within the broader framework of sustainable practices.

The expected results involve creating a unified framework that connects different disciplines, a clearer set of terms to promote collaboration across fields, and practical insights to support the global conversation on sustainable and adaptive solutions. This initiative highlights the necessity of organizing terminology to improve the efficiency and expandability of these methods in tackling pressing issues like climate adaptation, ecosystem restoration, and water management.

Preti, F., Capobianco, V., & Sangalli, P. (2022). Soil and Water Bioengineering (SWB) is and has always been a nature-based solution (NBS): A reasoned comparison of terms and definitions. *Ecological Engineering*, 181, 106687.