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# Soil Conservation and Sustainable Development

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## REQUALIFE: A web-app to assess and predict the eco-morphological quality of water courses

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### Abstract

This work aims at presenting the main features of an innovative Web-App platform named REQUALIFE. The application provides an objective quantitative assessment of the current eco-morphological quality of a watercourse or alternatively, in case of a new intervention, can provide a forecast of the potential improvement over time. REQUALIFE web application is based on the WEQUI evaluation method, which results from further developments of other existing and widely used ones. WEQUI shares with these methods a multidisciplinary and objective evaluation approach, based on 15 technical-environmental indicator values. Each option is associated to a score that follows an

exponential scale from 1 to 16. In addition to the indicators commonly used in most evaluation methods, REQUALIFE also introduces the Carbon sequestration and Carbon footprint, with the purpose of considering the carbon cycle of a riverbank stabilization. The Carbon sequestration indicator, as well as others included in WEQUI method, highlight the role of a riparian and floodplain vegetation, the importance of which plays a key role for both terrestrial and aquatic ecosystems. In this way the level of subjectivity and uncertainty during the compilation of WEQUI indicators is minimized.

**Keywords:** Eco-morphological quality, Indicators, Carbon sequestration, Carbon footprint, Channel morphology

## A participatory-based methodology for the selection of sustainable land and water management practices in rural Myanmar

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### Abstract

Besides providing water for irrigation, rural development efforts in Myanmar should target rural water security in terms of safe water supply and sanitation, and of mitigation of water-related hazards. However, very few studies are currently available on the topic, and consequently on suitable practical solutions for water-related development. This work presents a participatory methodology undertaken involving 45 rural development officers of the Department of Rural Development (DRD) of the Ministry of Agriculture, Livestock and Irrigation (MOALI), aimed at identifying suitable sustainable land and water management (SLWM) practices to be developed in rural areas of the country. Adoption of water safety plans (WSP), water harvesting, and soil and water bioengineering were identified as key SLWM practices, while the need for

improving water sanitation, especially in the marginal areas of the country, was made evident. Insights of the participatory process confirmed that the poorest regions of Myanmar have also the worst water management structures. The results of the present work can represent a baseline information and a needs assessment for future rural development projects in the country. In any case, there is still a strong need of more studies and reports targeting marginalized rural contexts of Myanmar, to support equitable development. The present abstract is based on: Castelli, G., Oo, W. M., Maggio, A. di, Fellin, L., Re, V., & Bresci, E. (2020). Participatory analysis of sustainable land and water management practices for integrated rural development in Myanmar. *Journal of Water, Sanitation and Hygiene for Development*.

**Keywords:** Erosion, Expert participation, Public engagement, Soil and water bioengineering, Water harvesting