

Floating Treatment Wetland: phytoremediation applied to the Brazilian Semi-arid region

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INTRODUCTION & AIM

Floating Treatment Wetland (FTW) is a technique that can be used for the restoration of water bodies, based on phytoremediation processes. FTW simulates the natural wetland environment and accelerates the processes that occur there, contributing to ecosystem conservation, pollution, and erosion reduction.

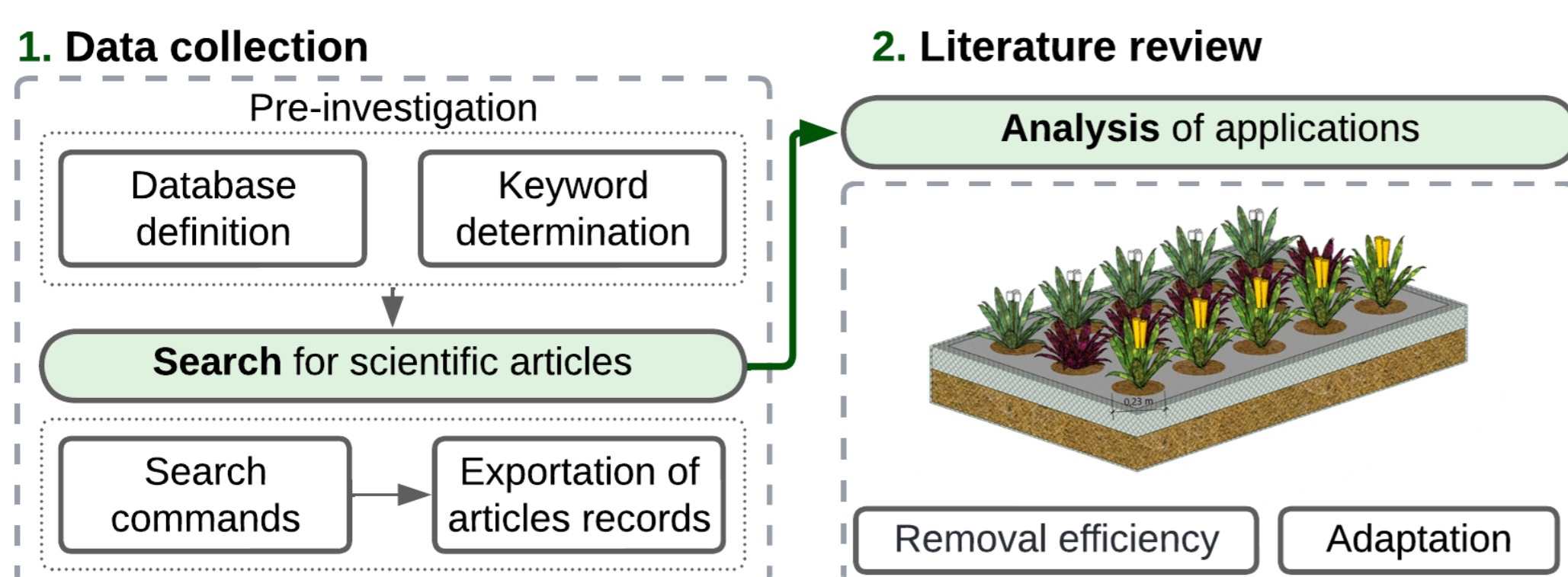
A typical FTW is composed briefly of a floating structure and plants that interact with microorganisms, water, and the surrounding environment to remove contaminants (Rocha *et al.*, 2020).

In the Brazilian Semi-arid region, characterized by natural drought processes, the use of this technology helps mitigate challenges related to water security and quality (Afzal *et al.*, 2019). This study conducted a survey of selected plant species that can be used in the development of FTW projects in the Brazilian Semi-arid region.

METHOD

To conduct the study, we followed the proposal presented in Fig. 1.

Fig. 1. Proposed methodological framework



Through the Web of Science and Google Scholar platforms, 12 publications were collected using the keywords: Wetlands, Floating Treatment Wetlands, Phytoremediation, and Brazilian Semi-arid.

RESULTS & DISCUSSION

The species *Cyperus papyrus* (33%), *Canna x generalis* (33%), *Eichornia crassipes* (25%), and *Iris pseudacorus* (25%) had the highest number of applications and best adaptation. 17% of the studies utilized the species *Typha domingensis* and *Chrysopogon zizanioides*.

Gomes *et al.* (2019) found that the use of *Eichornia crassipes* contributed to the reduction of nitrogen compounds. Rocha *et al.* (2018) highlighted that *Cyperus papyrus*, *Canna x generalis*, and *Iris pseudacorus* led to reductions in turbidity, BOD5, and COD.

However, the studies do not focus on evaluating the removal efficiency of individual plants, such as biomass analyses, but rather on the overall efficiency of the floating garden system.

FINAL CONSIDERATION / FUTURE WORK

The results indicate that FTW needs to be further explored, with studies on native plants and specific analyses focused on their evaluation.

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