

Assessing and promoting public perception of water and biodiversity interconnectedness

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Introduction

The separation in the management of water resources, and of nature and biodiversity jeopardizes synergies and collaborations in favour of sustainability. Nature-Based Solutions (NBS) are widely used in treatment and reuse of rainwater, supporting sustainability and new solutions for the urban water cycle. Water related literature addresses a wide range of NBS advantages, such as minimizing risks of coastal and riverine flooding (Bridges et al, 2022), treating highway runoff pollution (Barbosa and Fernandes, 2006) or contributing to ecosystems services (Orta-Ortiz and Geneletti, 2022). Cities' resilience to climate change is also enhanced by NBS which mitigate heatwaves and reduce extreme precipitation peaks. International organizations (e.g., IUCN, 2024; WEF, 2024) recently highlighted the need for comprehensive approaches to dealing with water and biodiversity, being NBS one of them.

Understanding the broad dimensions of NBS and the interconnections between water and biodiversity extends beyond sectors or stakeholders. It is essential to foster societal recognition and appropriation of the intrinsic value of nature and biodiversity, alongside a deeper comprehension of their interlinkages, to promote behavioral changes that support environmental respect and protection.

Methodology

The project *Water Sustains and is Sustained by Nature and Biodiversity* (ASSUBIO) was designed by the Portuguese Association for Water Resources (APRH) to support public awareness of water and biodiversity *nexus*.

The project, funded in 2024 by the Portuguese Ministry of Environment and Energy, had a duration of six months and aimed to promote environmental education, particularly among young people.

The methodologies adopted by ASSUBIO intended to be integrative, encouraging public participation. The project implementation consisted of three stages: (1) establishing the image of the project and the content of a questionnaire to raise awareness and evaluate perceptions; (2) implementing the questionnaire, analysing the results, and writing a script for an educational video based on the outcomes. Finally, at stage (3) a video was produced, released, and its impact was evaluated.

Results & Discussion

In one week, it was possible to gather 412 answers to the questionnaire (c.f., Figure 1). The socio-demographic characteristics of the respondents showed a prevalence of the group aged 17-24, which is aligned with the purpose of educating younger generations. Almost one third of the answers are from people without university education (24,3%), and almost half (49,1%) are either retired, or study or work in topics not directly related to water or biodiversity.

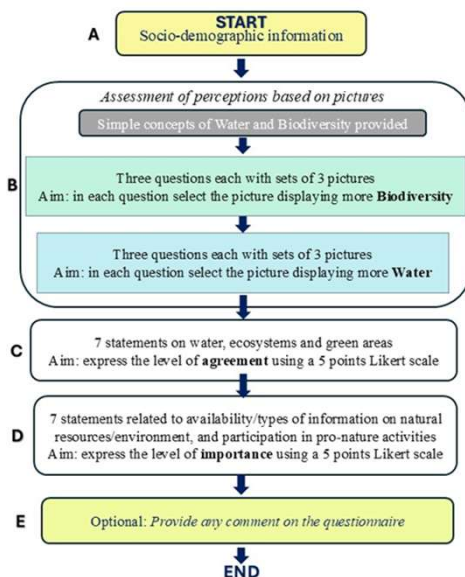


Figure 1: Structure of the questionnaire to raise awareness and evaluate perceptions, attitudes and behaviours related to water, biodiversity and ecosystems services.

The video versions, with Portuguese and English subtitles were released on the 25th November 2024. The sessions where the video was disseminated had, respectively, 50 (public session) and 90 (technical event) attendants. It was possible to collect feedback on the impact of the video from, respectively, 30 people (Group I) and 15 people (Group II), by means of a short questionnaire. These responses were analysed separately. Group I age ranged from 19 to 63 years old, with an average age of 26. 76% of the respondents are willing to disseminate the video. The words used to characterize the video were positive. For a total of 47 different words used by the respondents, the most frequently mentioned were: 'Educational'; 'Appealing'; 'Exciting'; 'Informative' and 'Clarifying'.

Interestingly, for the very informed public of Group II, also the word 'Educational' was the most frequently used, from a total of 43 different words. These responses are from a smaller sample of respondents with an average age of 47 years old (ages ranging from 22 to 70). 81% of these respondents are willing to disseminate the video, which is comparable to the percentage of Group I (76%).

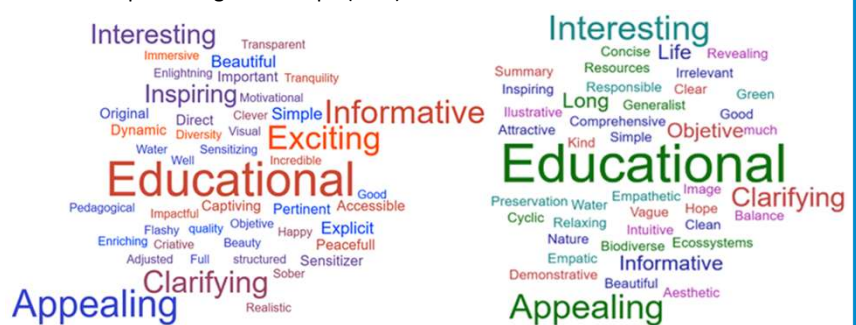


Figure 2: Two clouds with the words used to assess the video by an audience of non-experts (Group I, cloud to the left) and an audience with technical and professional knowledge on water and nature processes (Group II, cloud to the right).

Conclusions

The ASSUBIO project was innovative by involving more than 400 people in providing insights that supported the creation of a script for an educational video. A first evaluation of the impact of the video confirms that it responds well to the objectives behind its creation.

The appropriation of natural values and biodiversity by society and the understanding of their nexus with water is expected to bring about behavioral changes, in the sense of valuing and protecting natural resources that are fundamental to sustainability and to the health and well-being of populations.

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ASSUBIO