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Designing Nature-based Solutions in a Participatory Way: Usability of Tools for Water Professionals

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Participatory processes provide opportunities for stakeholders such as: scientists, policy makers and citizens to meet, exchange information, deliberate and share values. The artefacts through which the water professionals (scientists and policy makers) and the other stakeholders can enable these participatory processes are defined as tools. There is a diversity of rapidly evolving tools for supporting the process of designing nature-based solutions (NbS) together with the stakeholders (participatory designing). This, however, requires a systematic and informed selection to facilitate the adequate choice of tool, aligned to the requirements and context of the water professionals but also the stakeholders. Despite this, there is still little progress and knowledge accumulation over preferred tools. Moreover, while tailored participatory tools could facilitate and accelerate the design process of NbS, a comprehensive mapping of their availability and capacity to respond to the values, requirements and needs of the stakeholders is still missing.

Consequently, in this research, we propose a stepwise framework for the use of tools as support in three interconnected processes: i) tools used for co-designing NbS with stakeholders - co-creation tools, ii) tools used for defining the hydro-meteorological hazards (HMH) and its effects with stakeholders - knowledge tools and iii) tools used for co-implementing the transition towards NbS - transition tools. We then test this stepwise framework in six brook catchments spread in four countries: the Netherlands, Belgium, France and the United Kingdom. The stepwise framework is designed in the following order: tool collection and selection; classification; grading and mapping. We are content that this stepwise framework could show how the water professionals, could make an informed selection and decision on the most suitable tool, based on the usability index of the tool for the specific stakeholder groups and the following criteria: tool category, objective of the tool, the required decision making process stage, the type of stakeholders, and the practical requirements (time, budget, number of participants).

Therefore we designed and tested a framework that allows the water professionals to make a decision on which tool/s could be best used based on their usability but also in terms of their characteristics analysed and described from the water professionals/practitioners themselves. What further discussion on this framework might entail is regarding the trends that we notice in the Co-Adapt project, the limitations and what happens after the tool or suite of tools is applied

based on actual field experiences.