

Citizen Science in River Monitoring: A Systematic Literature Review of the Whys and Hows

Gabrielle P. Shao ^a and Isabel J. Bishop ^b

^a Department of Geography, University College London

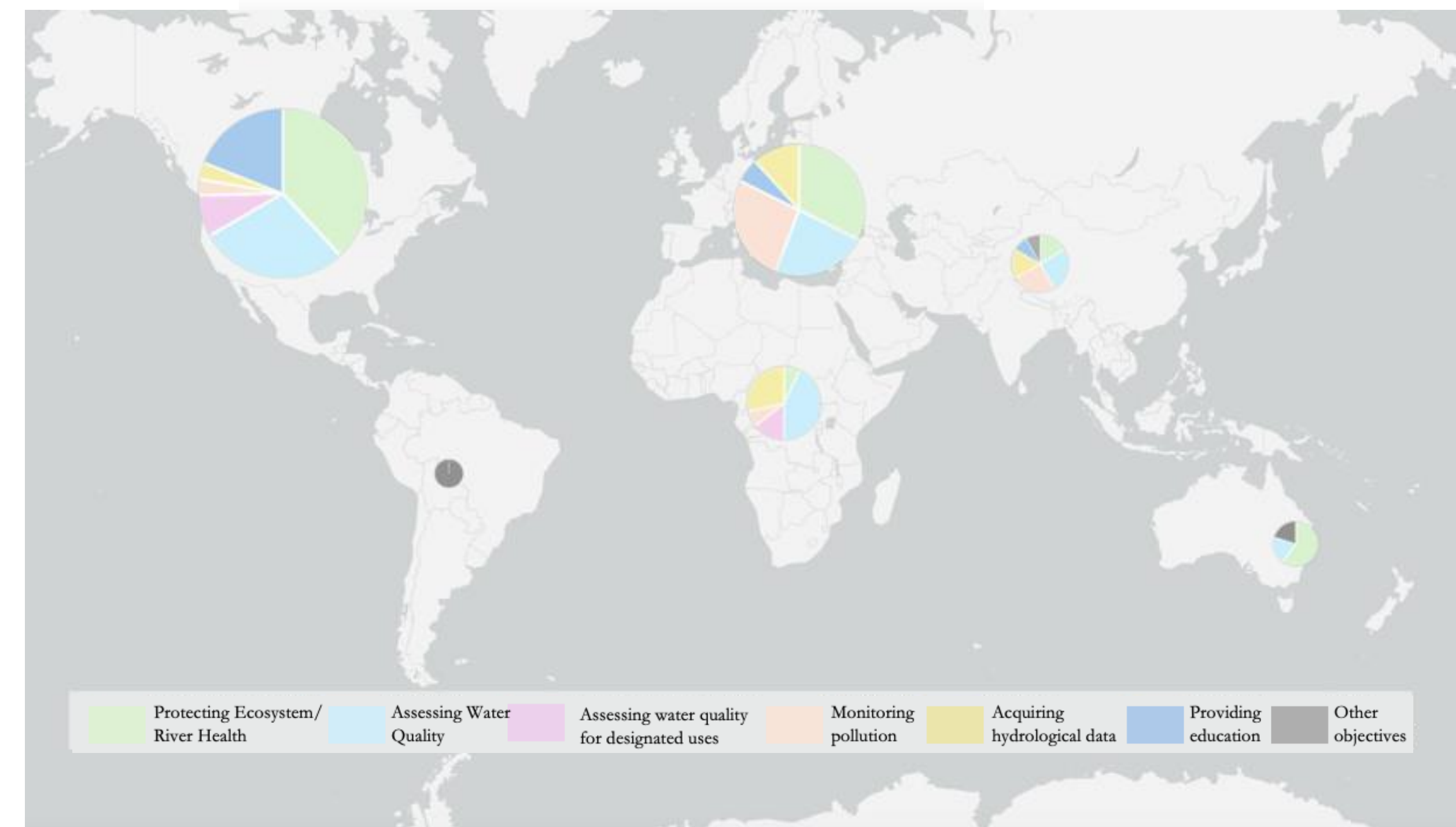
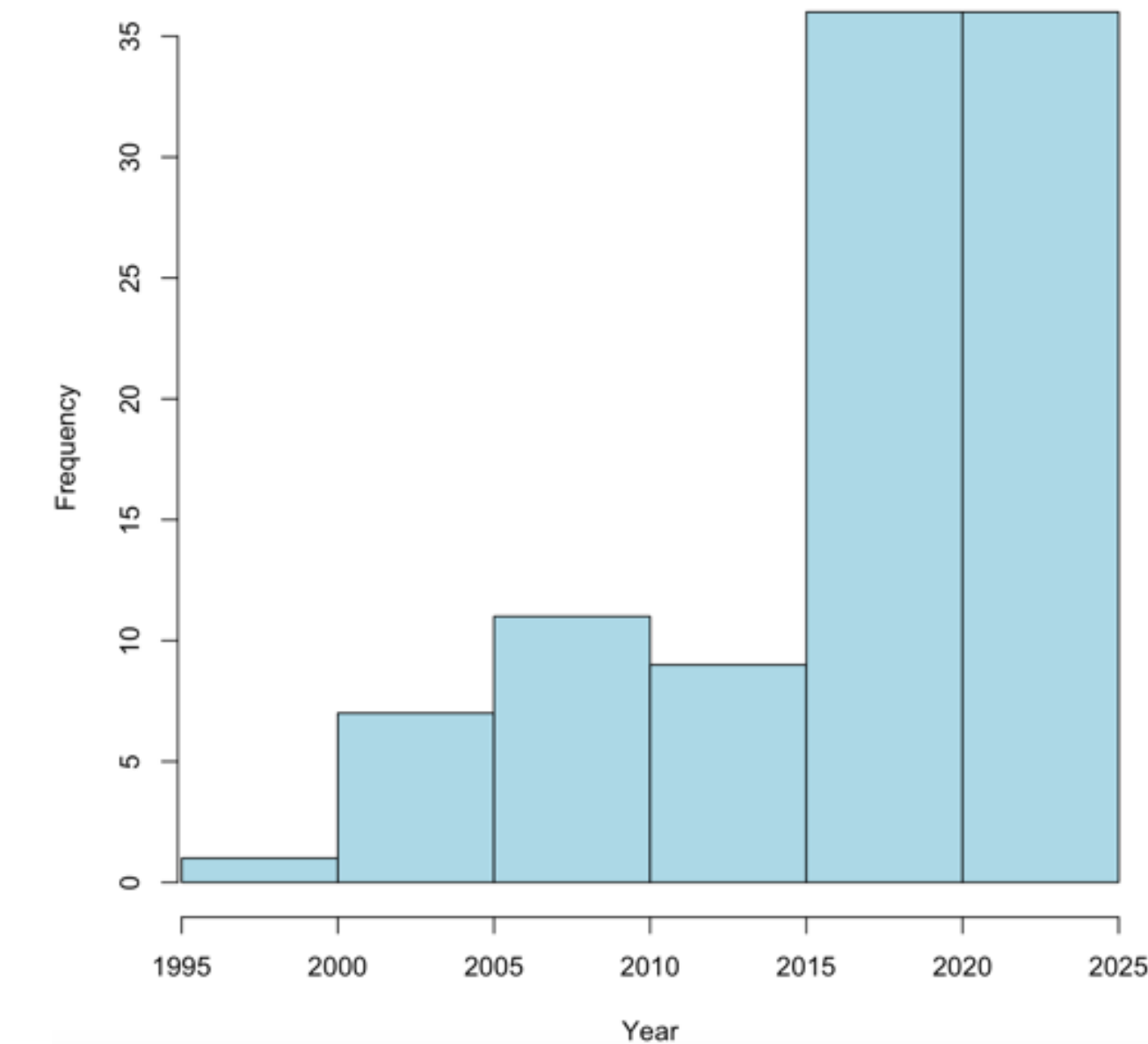
^b Department of Biosciences, University College London



Research Objective

- To identify the primary objectives and monitoring methodologies that are currently being used in existing citizen science projects focused on river monitoring;
- To explore geographic trends in the objectives and methodologies currently applied in citizen science river monitoring;
- To synthesize the overarching goals of global citizen science initiatives in river monitoring, categorize the prevalent methodologies associated with each specific goal, and map the most common methods associated with different aims and objectives, thereby providing a decision framework for future citizen science projects in this field.

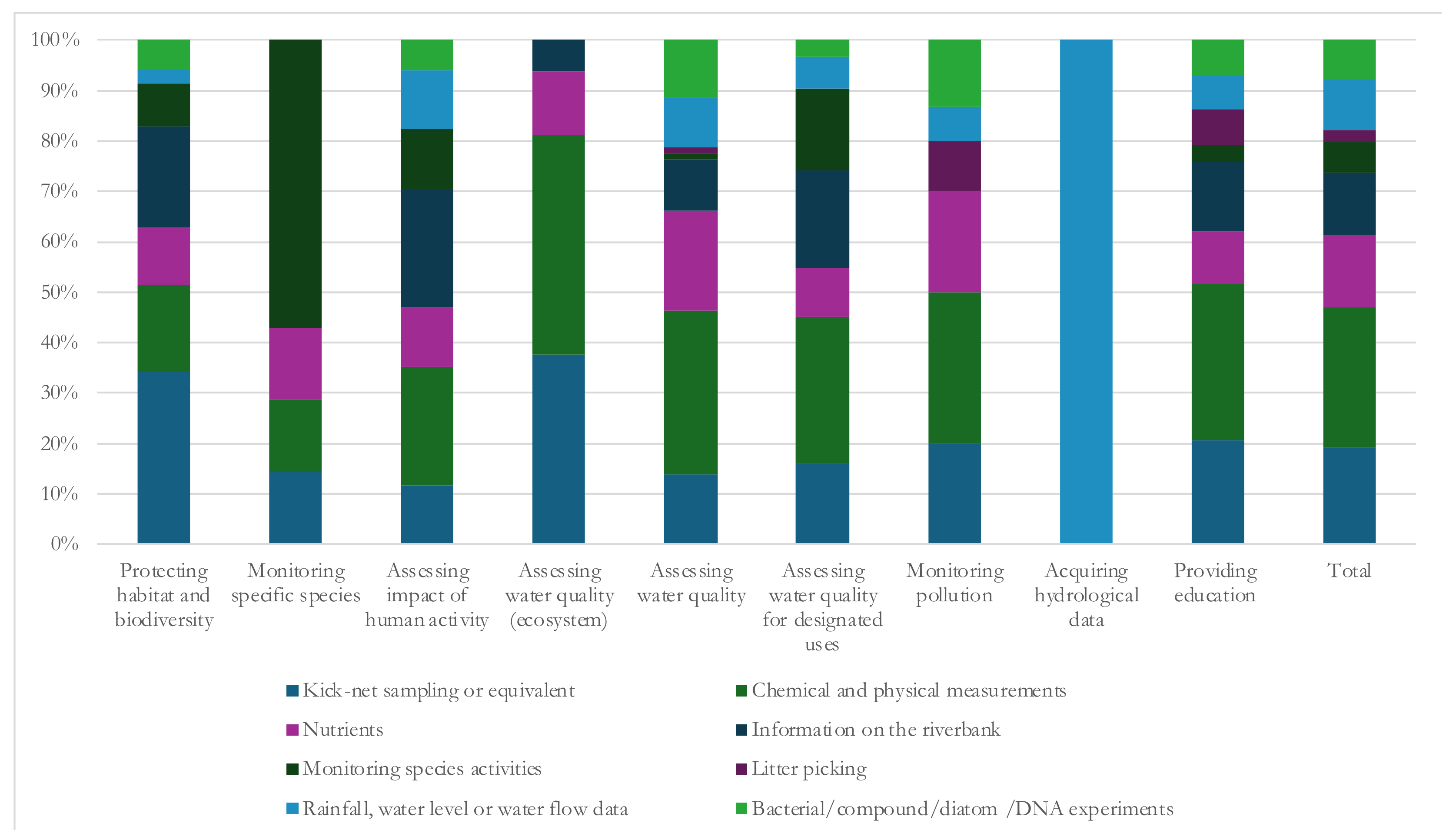
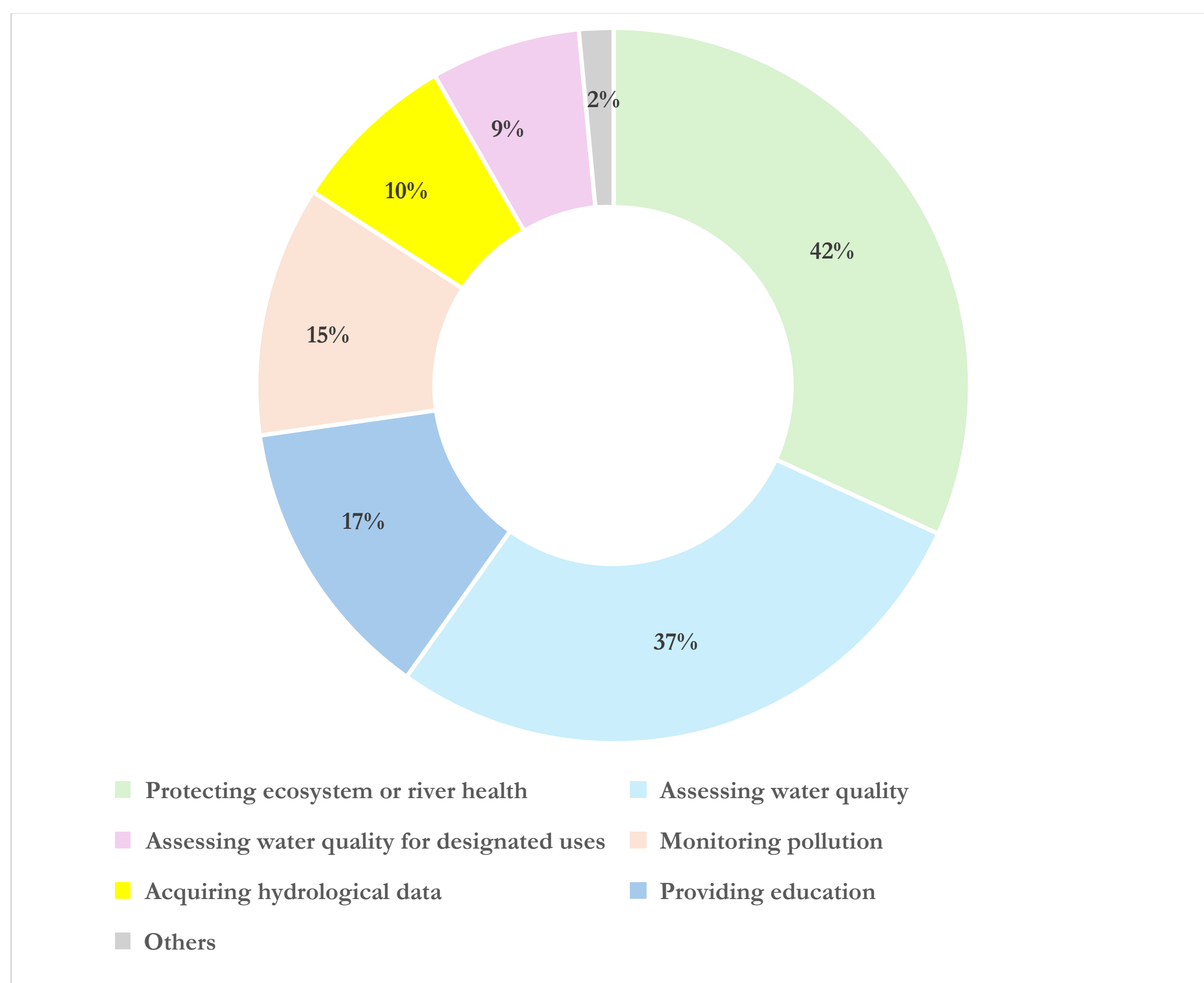
Results- time and space



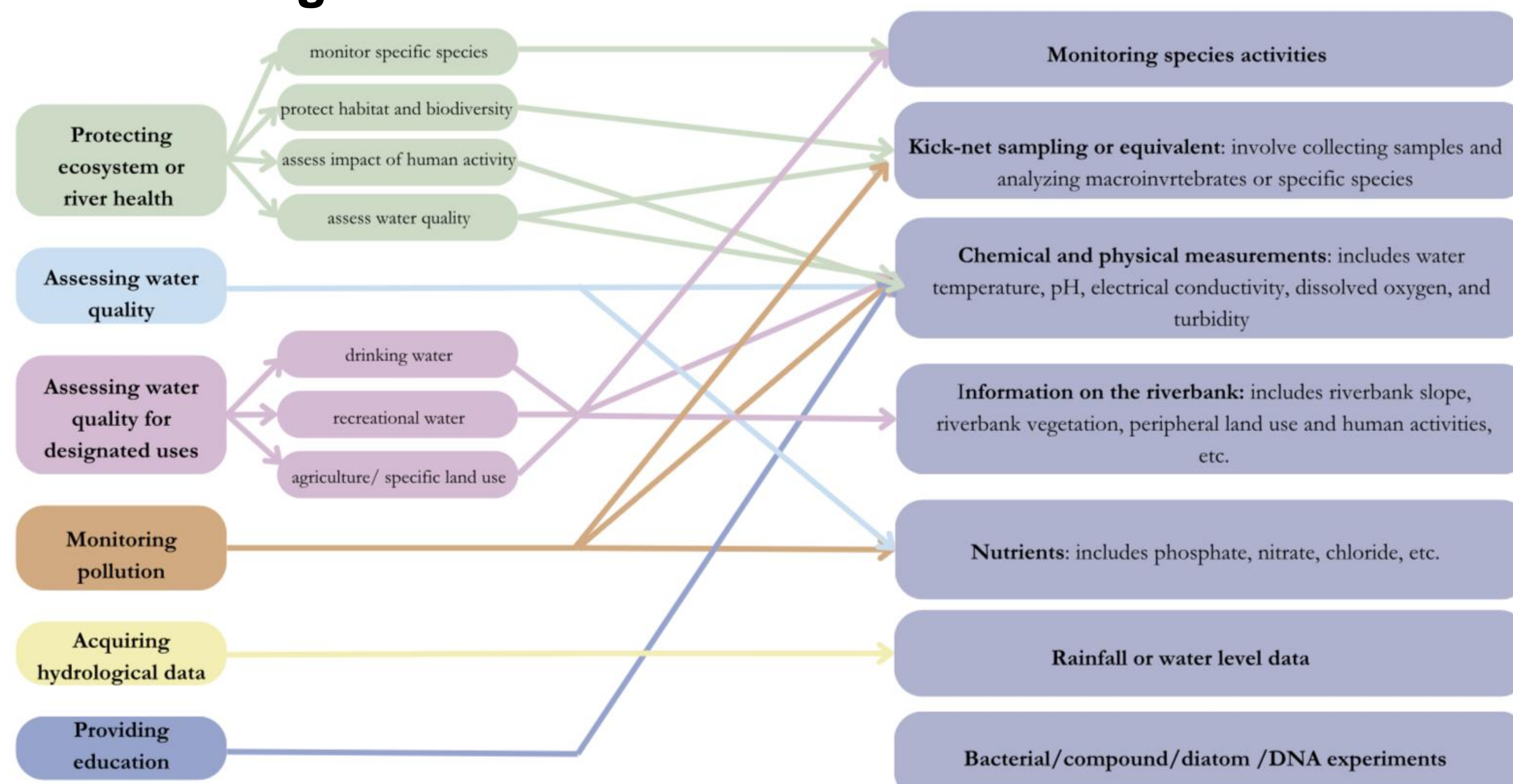
Methodology

- Systematic Literature Review
 - The PSALSAR method
 - Databases: Web of Science, Google Scholar, and Google.
 - Limited search to first 100 results per database, excluded irrelevant reviews, manuals, and non-citizen-science projects.
 - Final selection: 97 papers.
- Data Analysis
 - Extracted information: research aims, methods, country, publication date, type of project, etc.
 - Classified and quantified objectives by category, analyzed regionally and over time.
 - Categorized monitoring methods by objectives and linked them in a framework.

Results- project objectives and methodologies



Discussion- the framework linking common objectives and methodologies



Conclusion

- Systematic literature review of citizen science in river monitoring, analyzing global objectives and methods.
- Developed framework linking objectives to methods to guide new projects.
- Identified common objectives/methods with examples for project organizers.
- Limitations
 - Limited search terms and sample size may miss trends.
 - Potential biases from undocumented projects and Google grey literature.
 - 16% of studies compare citizen science with professional methods, possibly skewing results.
- Future Research
 - Focus on contemporary projects and provide practical training for citizen scientists.