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Conference Abstract

Study of the relationship between human and aquatic ecosystems in a ‘one health’ perspective, inputs of a spatial approach in the ‘Mental’eau’ project

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Abstract

Background

This paper aims to explore some aspects of the questioning developed as part of the 'Mental'eau' project, funded from 2023 to 2027 by the Rhine-Meuse Water Agency (Grand Est region, France). This research proposes an interdisciplinary approach based on environmental and human sciences, as well as scientific mediation (Fries-Paiola, C. 2024). It brings together a multidisciplinary research team, who works at answer two main questions: from the ‘one health’ concept (World Health Organization 2023), is there a correlation between the health level of aquatic ecosystems and human health, understood here through the dimension of the well-being of the people who visit these ecosystems?

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This research addresses some unexplored questions (Gascon et al. 2017). As a matter of fact, the analysis of the impact of the use of a natural site on human well-being is confined mainly to the study of the human-forest relationship, and when these sites are aquatic ones, they are almost exclusively urban (e.g. Cardinali et al. 2024). In these researches, the ecosystems state of health is not addressed as a factor that can have an impact on human well-being; even in the ‘one health’ approaches, questions are more about zoonoses but rarely about mental health regarded in connection with the state of health of the ecosystems.

Therefore, 28 aquatic ecosystems belonging to the Moselle River watershed in France have been chosen as the analysis corpus. The methodology developed proposes a three-pronged approach to these sites:

1. an ecological dimension, with a protocol, which aims at assessing their state of health (Paul, A. 2024);
2. a psycho-social dimension, with a survey that aims at assessing the felt well-being of the people who are visiting the sites (Denechaud, C. 2024); and
3. a territorial dimension to understand the sites in their socio-spatial dimension, based on observations and mapping works.

In conjunction with the exhaustive analyses of these 28 sites with this triple approach, the research will focus on a restricted corpus of 6 to 8 sites (chosen for their representative ecological and social components) in order to question, on one hand, the effects of sensitization on the representation of relationships to the aquatic ecosystems and, on the other hand, how understanding a site from a 'one health' perspective could impact its management, based on participatory workshops with stakeholders and local residents.

Objectives

The paper will question specifically theoretical and methodological issues, as well as first outcomes from the development of the social-spatial approach of both general and restricted corpus. Three aspects will be particularly developed.

The first point will concern the contribution of an approach based on spatiality (site, territory and landscape) and on the diversity of points of view of different stakeholders (individuals in situ, users and inhabitants) and managers (elected officials, technicians or advocates), to understanding the relationships between these stakeholders and the sites.

The second point will address the various aspects underlying the question of well-being by looking at how these sites are experienced and represented by the various stakeholders. What are the tensions between uses and practices, or between perceived ecosystem services and disservices? How does the sense of belonging to the aquatic ecosystem impact the relationships with the site?

The third point will outline the way arbitrations can be thought of in terms of practices and management of these sites, in relation with the concept of ‘one health’. To say it

differently, what is the level of perceived congruency between the interests of the ecosystem and those of the different stakeholders?

Results

In relation to objectives previously presented, this paper will try to identify first outcomes after two years of work. After a little more than one year to constitute the corpus, this spring will be dedicated to a big stage of field study. In addition to developing the theoretical and methodological aspects underlying the questions raised, this paper will analyze the initial results of various approaches: surveys and mapping works, participant and non-participant observations and first interviews (semi-directive and focus groups with different stakeholders). This paper will also propose a projection of the methodology, which will be developed as a part of workshops with the stakeholders from the sites of the restricted corpus.

In the background to this paper, we will be looking at both the obstacles and levers to the effective implementation of interdisciplinary (between natural science disciplines and the humanities) and transdisciplinary (carried out in conjunction with local stakeholders) research (Chenorkian 2021).

Keywords

One health, aquatic ecosystems, well-being, socio-spatial approach, territory

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Conflicts of interest

The authors have declared that no competing interests exist.

References

- Cardinali M, Beenackers M, Fleury-Bahi G, Bodénan P, Petrova MT, van Timmeren A, Pottgiesser U (2024) Examining green space characteristics for social cohesion and mental health outcomes: A sensitivity analysis in four European cities. Urban Forestry & Urban Greening 93 https://doi.org/10.1016/j.ufug.2024.128230
- Chenorkian R (2021) Conception et mise en œuvre de l'interdisciplinarité dans les Observatoires hommes-milieux (OHM, CNRS). Natures Sciences Sociétés 28: 278-291. https://doi.org/10.1051/nss/2021002
- Denechaud, C. (2024) Une approche 'one health' pour comprendre les interrelations entre l'expérience de la nature, le bien-être humain et la santé des écosystèmes aquatiques. ENSA Nancy.
- Fries-Paiola, C. (2024) 'Mental'eau', relation entre santé des écosystèmes aquatiques et santé humaine, une approche interdisciplinaire. INRAE Lyon.
- Gascon M, Zijlema W, Vert C, White M, Nieuwenhuijsen M (2017) Outdoor blue spaces, human health and well-being: A systematic review of quantitative studies. International Journal of Hygiene and Environmental Health 220 (8): 1207-1221. https://doi.org/10.1016/j.ijheh.2017.08.004
- Paul, A. (2024) Conception d'une méthode pour l'évaluation de la Santé des Écosystèmes Aquatiques. Une approche pour les Études Interdisciplinaires.
- World Health Organization (2023) Une seule santé. https://www.who.int/fr/news-room/fact-sheets/detail/one-health. Accessed on: 2025-1-30.