

EU-DOCs for SmUCS

CO-SUPERVISED SUBJECT PROPOSAL FOR A DOCTORAL CONTRACT

Title of the thesis project Public Water Management in Coastal Areas	
La Rochelle University Research Unit EOLE - Environnement Organisation Legislation	Partner university ROSTOCK Universität (Germany) Cotutelle research unit Institute for Business Administration (Faculty of Economic and Social Sciences)
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Non-academic partner Charente-Maritime Department, International Institute on Water (Limoges - France), GRALE (Academic Network gathering academics in law and Management)	
Main research field: Public Management Secondary research fields: Governance; Comparative Public Policy in Environmental and Urban Management	
Keywords: water management; wicked problems; public management; conflicts of use; citizens participation; governance	
Scientific description of the research project <i>Water management in general is a task for local authorities, for example, as part of their public services for the general well-being. Furthermore, it is addressed both in the context of the United Nations' Sustainable Development Goals UN-SDGs) and the six environmental goals of the European Union. To this backdrop, the EU launched its European Water Resilience Strategy, on June 4, 2025. This strategy addresses the escalating challenges of water scarcity, pollution, and climate-induced water stress across Europe.</i> <i>Coastal water management (CWM) is a wicked problem (Gruendel, 2022) and as such transcends the knowledge possessed by experts. Wicked problems necessitate to accommodate both participatory and expert-based decision making, producing a form of technical democracy (Bevir, 2010) in which problem solving requires the orchestration of conflict. To this backdrop, citizen participation should be carefully enhanced (Manes Rossi et al. 2023) to the end of their engagement in co-creation and co-production in municipal risk governance (Haustein & Lorson, 2021) and decision making, sometimes also discussed as citizen science in the European Union (Socientize EU Project, 2013).</i> <i>CWM faces significant challenges due to population growth, economic development, and environmental pressures (Magister et al., 2020; Huwaina & Koestoer, 2022). Seawater intrusion and groundwater salinization are major concerns in coastal aquifers, exacerbated by intensive groundwater abstraction and climate change. Various approaches to water management have been implemented, including seawater toilet flushing in Hong Kong and water imports from China (Huwaina & Koestoer, 2022) or desalinization. Effective management requires assessing water quality, quantity, and source distance to meet community needs (Sukri et al., 2023). Remedial measures against seawater intrusion include conventional methods and modern techniques like hydraulic barriers (Muhammad Zaid Qamar et al., n.d.). Proper governance, sustainable water use, and community involvement are crucial for safeguarding coastal water resources (Muhammad Zaid Qamar et al., n.d.; Ahmad Syarif Sukri et al., 2023). Additionally, synchronization of</i>	

regulations between central and local governments is necessary for effective water management in coastal areas (Magister et al., 2020). The scientific literature in public management emphasizes the need for multidisciplinary and multi-dimensional approaches to water management, moving beyond market-based perspectives to more integrated models that address the complex challenges of sustainable water resource management. Price mechanisms include block tariffs, various charges, rebates, and cross-subsidies, while non-price mechanisms encompass management, engineering, regulatory tools, public education, and community involvement (Araral & Wang, 2013). Effective water management requires consideration of governance, knowledge of usage patterns, and integrated approaches that incorporate multiple sources, actors, and application).

In short, water management is a sensitive and complex question, for which we propose here to supervise a thesis work in innovative public management to bring the necessary elements of helping public decision making. Indeed, while a certain number of research works have already been carried out, particularly in law and management (Pissaloux & al., 2024; Porcher, 2024) and interdisciplinary (Euzen & al., 2017) highlighting a certain number of very interesting lessons, these remain piecemeal and difficult to action for the public manager. New and creative approaches are often mobilized to solve complex issues. Ansell and Torfing (2021) assert that only new forms of democratic governance (Bevir, 2010), strategic design (Steinberg, 2014), design for public innovation (Bason, 2017) and design for the public sector (Junginger, 2017) can overcome the challenges of contemporary complex issues. Last, but not least there is strong relation to an ongoing research project at Rostock University named "Ocean Technology Campus Rostock (<https://www.eu-conexus.eu/en/2024/10/22/ocean-technology-campus-rostock-success-story-continues/>).

The **first step** here will consist in a literature review of existing academic work on public water management around coastal zones, examining existing as well as future technical solutions (treatment of polluted water for instance) as well as former solutions used by older local authorities, according to an historical approach.

In a **second step**, the PhD will try to

identify the difficulties encountered in practice and the solutions adopted and implemented in coastal territories sharing common problems (coastal and tourist towns). 2 territories have been selected for this purpose, that of Rostock in Germany and La Rochelle in France but others could be added for benchmarking purposes. Conflicts of use between population, industry and agriculture, important pollution after years of intensive pesticides use by the latter, as well as difficulties by local authorities in safeguarding wellfields characterize the context in both towns¹.

identify the various solutions for the communities in coastal zones with the advantages and potential disadvantages on the aforementioned dimensions. Public management is conceived here as both a technical and human solution to identify and problematize issues and choose an organizational model to implement solutions (Pollitt, Bouckaert, 2017). The goal is to develop a European comparative perspective in public management, in order to compare the different modes of public management for wicked problems such as water management at the scale of an urban coastal territory.

Methods

The methodology used will be mixed (e.g. empirical and conceptual) and combine elements of case study (Ragin, 1998; Yin, 2018) and international comparative perspective in public management. Case material will include primary data collection (interviews, observations) as well as secondary data sources (existing literature, reports...)

Expected results

The results of the PhD will include comparative knowledge on public management models and theories as well as managerial recommendations for La Rochelle and Rostock.

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¹ <https://www.ndr.de/nachrichten/mecklenburg-vorpommern/Landkreis-Rostock-warnt-Trinkwasser-in-Guestrow-in-Gefahr,trinkwasser468.html>

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PhD student profile and skills required

The PhD candidate should hold a Master's degree in public management, political science, law, environmental studies, or related fields, with solid knowledge of public policy and governance. Strong skills in qualitative research methods (case studies, interviews, document analysis) and interest in comparative and interdisciplinary approaches are essential. The student should demonstrate a capacity for critical analysis of wicked problems and openness to participatory, design-oriented methods. Excellent writing, communication, and stakeholder engagement skills will be required for collaboration with local authorities, communities, and international partners.

Scientific alignment with EU-DOCs for SmUCS objectives

Improving Water management is one of the biggest challenges SmUCS are facing. It is the UN SDG number 6 and a focus of the European Water Resilience Strategy. Wicked problems, such as water management, require a multidisciplinary perspective that this PhD will provide.

Societal and economic challenges and contributions

Improving Water management is one of the biggest challenges SmUCS are facing. It is the UN SDG number 6 and a focus of the European Water Resilience Strategy. Economic consequences of an improved water management are very important. Water conflicts are one the first sources of societal unrest today and it will get worse based on Groupe d'experts intergouvernemental sur l'évolution du climat (GIEC) reports. Finding ways to peacefully resolve these issues should be a priority for every country.

Partnership context

Partnership with local authorities in France (city, department) and Germany (Rostock), as well as other institutions are planed (Agence de l'eau Nouvelle Aquitaine / Office International de l'Eau (Limoges)).



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