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African Urban Complexities and the Governance Challenges of Urban Rivers – a Systemic-Relational Inquiry

Summary

In Africa, urban river systems are often significantly degraded and recent empirical evidence suggest the accumulation of new pollutants such as macro- and microplastics in such river systems (Grimm et al 2000). However, healthy urban rivers can contribute to and support sustainable urban development through the supply of desired and valued ecosystem services (MEA 2005; Wangai et al. 2017). In this project, we argue that if African urban rivers are to be on an ecologically sustainable path, then, a new approach that recognises the complexity of the interconnectedness and dynamic interactions between social and ecological systems within African urban landscapes, is required. Our just concluded research in the Nelson Mandela Bay Metro in South Africa and the Federal Capital Territory in Nigeria focuses on three key components of the concept of urban complexity in relation to urban river ecology and governance challenges i) the imperative for developing multi-dimensional (ecological, social and economic) integrative indicators of urban river health ii) institutional integration failure (i.e. silo operation) as a key governance challenge and iii) the complex interactions and linkages between urban river health and people social-economic well-being on river catchment.

Key questions

Our hypothesis is that rivers in African urban landscape are unique in the ways people and institution interact with them, and that these interactions are complex both in ecological, social and governance terms. We seek to answer the following questions: (i) what are the key urban river governance challenges and the ethical implications of these challenges in the selected urban areas? (ii) what is the influence of bio-habitat complexity on the dynamics of macroplastics and the distribution of biota in the selected urban rivers? (iii) do emerging pollutants (macroplastics) support the establishment of unique biological assemblages, relative to the surrounding aquatic habitats?

Methods

The study will use an ethically grounded systemic-relational (SR) approach to encompass both the ethical and social aspects of water governance and management. The SR ethically grounded approach conceptualises the governance and management of water resources beyond the social/human system to include the wider SES. In addition, concepts from the field of Governance and Adaptive management will also be used as foundations to analyse and understand how multiple stakeholders participate in water governance and management at different scales (local to national) and explore alternative pathways on how current water governance and management approaches can shift to more holistic and sustainable approaches. To achieve the objectives of the study, several data collection techniques will be used. Data collection methods will include reviewing documents and archival records, semi-structured interviews, attendance and participation in workshops, participant observations (Voss et al 2002; Yin 2009). Multiple interviews with key stakeholders within and outside (where relevant) each case study catchment will be conducted on different occasions to gain better perspectives into water governance challenges facing the stakeholders and their ethical dimensions.

Caption

Vision

If African urban rivers are to be sustainably utilised, then a new approach that views rivers as complex social-ecological-system (SES) is required. Such an approach is transdisciplinary, drawing on both academic and practice-based knowledge to address urban river governance and pollution challenges. Such an approach that departs from a mono-disciplinary focus is likely to contribute to healthy urban rivers that supply valued and desired ecosystem services, while sustaining their internal resilience, structure, organisation and vigour.

Relation to Cluster's aims and goals

The research contributes to the cluster's agenda of mobility in as much as it relates to understanding the mobility of macroplastics, biota in urban rivers as well as reflection on governance challenges of urban rivers in cities in two different countries. Using the SES framework, relationality is conceptualised beyond the social domain, to include the relational processes and interactions between people in a catchment, and between people and rivers within urban landscape.

Further links / Key references

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