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Towards symbiotic urbanism

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Towards symbiotic urbanism: Mitigating the impact of river channelization in the New Territories of Hong Kong

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ABSTRACT

River channelization has been commonly adopted to control flooding in urban development. However, this urban-oriented physical transformation of hydrologic systems can aggravate structural changes in ecological regimes, affecting the environmental conditions of the surrounding land, accelerating landscape transformations, and leading to deleterious societal implications. Differently, mitigation strategies may produce a socio-spatial response to the progressive deterioration of rural landscapes; nevertheless, this response is still investigated by a paucity of scientific research. Longitudinal data on the morphological change of the Sheung Yue River, Hong Kong, and the landscape pattern modifications at the catchment level, interpreted from aerial photographs and high-resolution satellite imagery, were analyzed to understand the impacts of environmental mitigation strategies in river channelization on landscape transformation. Additionally, in-depth interviews provided crucial knowledge on the societal response to the landscape mutation. The results indicate that integrating environmental mitigation strategies can reduce the negative impacts of channelization. The research highlights the significance of socio-environmental responsive urban development strategies in the policy-making of Southeast Asia. It discusses the close interconnection of environmental and social factors in urbanization, revealing the potential to consolidate a dynamic equilibrium of hydrologic systems and sustainable urban habitats.

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Figures and tables

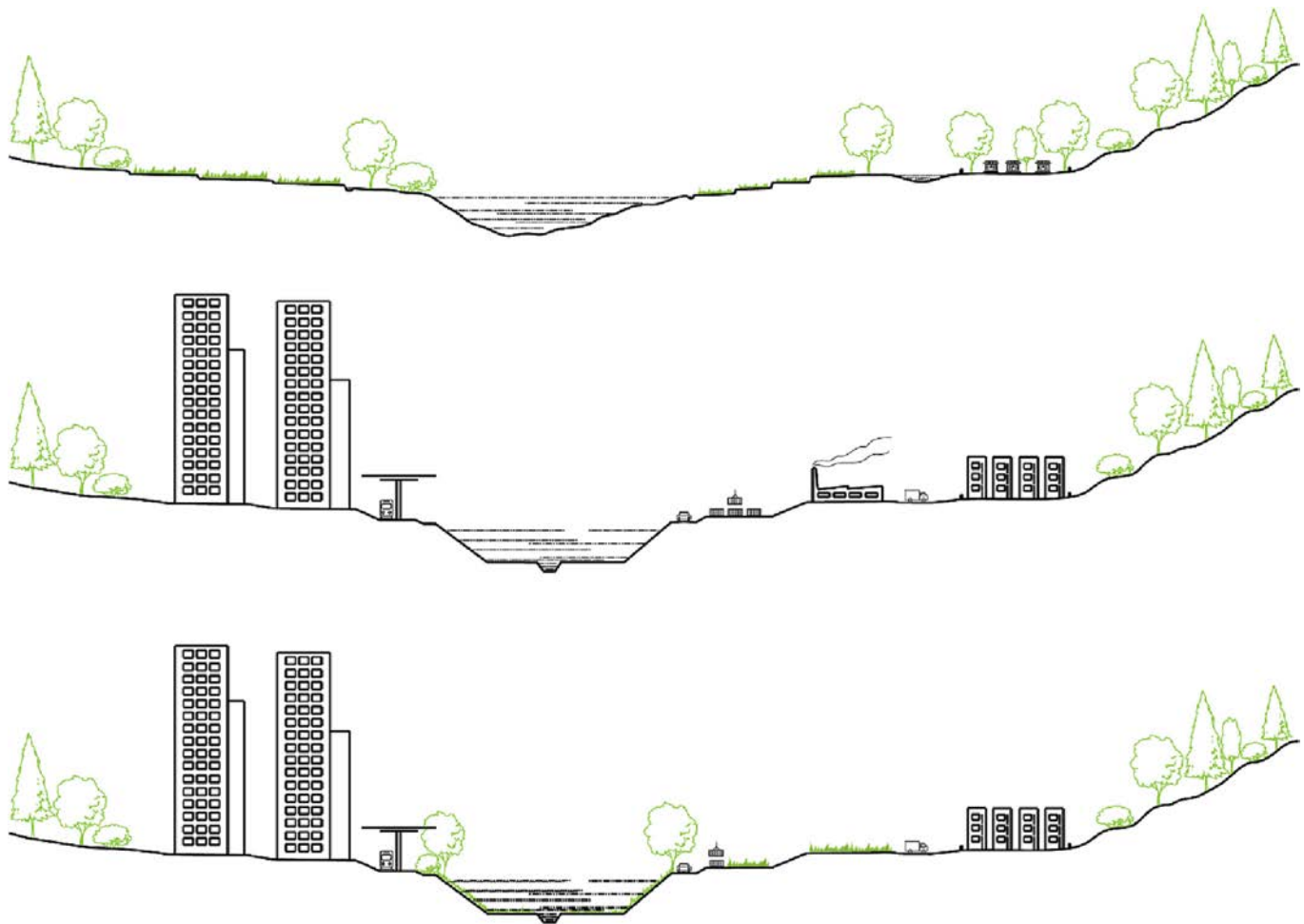


Fig. 1. Impact of channelization on peri-urban development, adapted from (Cosgrove and Petts [1]).

Caption(from top):

Before channelization:

Agricultural-oriented landscape

After channelization:

Urban-oriented landscape

Channelization with environmental mitigation work:

Re-activation of agricultural land

CRedit authorship contribution statement

Gianni Talamini: Conceptualization, Resources, Investigation, Visualization, Writing – review & editing, Supervision, Project administration, Funding acquisition. **Xuewen Lu:** Methodology, Data curation, Investigation, Formal analysis, Software, Visualization, Writing – original draft.

Data availability

Data will be made available on request.

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Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

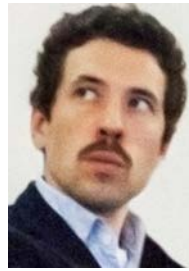
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Further reading

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Gianni Talamini (PhD) is an associate professor at the City University of Hong Kong, where he teaches urban design and architecture. Gianni does research on the notion of organic urbanism and the relationship between society and space. He works for an environmentally symbiotic, culturally leavened, and spatially just society.



Xuwen Lu is a PhD candidate at the City University of Hong Kong. Her research focuses on the spatial transformations impacted by urban and rural water management in high-density Southeast Asian cities and their social responses.