



Delft University of Technology

Prospects: Editorial

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DOI

[10.59490/jdu.4.2023.7349](https://doi.org/10.59490/jdu.4.2023.7349)

Publication date

2023

Document Version

Final published version

Published in

Journal of Delta Urbanism (JDU)

Citation (APA)

Kuzniecowa Bacchin, T., Hooimeijer, F., & Kothuis, B. L. M. (2023). Prospects: Editorial. *Journal of Delta Urbanism (JDU)*, (4), 4-10. <https://doi.org/10.59490/jdu.4.2023.7349>

Important note

To cite this publication, please use the final published version (if applicable).
Please check the document version above.

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Issue #04 Prospects

Fall | Winter 2023



DU

Journal of Delta Urbanism
Delft University of Technology

Prospects

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The latest IPCC report which is named ‘The Synthesis Report , Climate Change 2023’ was released on 20 March 2023 to inform the 2023 Global Stocktake under the United Nations Framework Convention on Climate Change. The report finds that ‘there is more than 50% chance that global temperature rise will reach or surpass 1.5 degrees Celsius between 2021 and 2040 across studied scenarios, and under a high-emissions pathway, specifically, the world may hit this threshold even sooner, between 2018 and 2037.’ These findings again emphasise the growing pressures and challenges that deltas are confronting in their path towards future development. It is evident that the global imperative for deltas to adapt has reached an unprecedented level, but at the same time the question arises if adaptation is enough. Especially considering the scope of societal challenges that need to be the point of departure for sustainable spatial transformation in general. Aren't they of such a fundamental nature that we need to reconsider our urban system as a whole and aim for transformation instead of adaptation?

Looking more closely to the societal challenges we can organise them according to their environmental and socio-economic drivers. The environmental drivers are the climate crisis and the biodiversity crisis. The socio-economic drivers are ongoing urbanisation, the energy transition, and the new economy.

The climate crisis primarily affects temperature, resulting in significant alterations in the hydrological cycle.. These changes are anticipated to result in several metres of sea level rise and various climate extremes, including pluvial-fluvial flooding, fluctuations in river discharge (both high and low), temperature variations, and drought. These impacts will influence the areas where people can reside and will have repercussions on the environmental system..

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The environmental crisis is caused by the direct impact of human action on the ecosystem. Besides biodiversity loss, pollution, and exploitation of natural resources, resulting in subsidence in deltas. The indirect impact is the human impact on the climate, inducing climate change that then again impacts the ecosystem in (a) timing of seasonal life-cycle events; (b) range shifts of species territories; (c) food web disruptions; (d) buffers and threshold effects for wildfires; (e) flooding and drought; (f) spread of pathogens, parasites, and disease. Shifts in ecological conditions could support the spread of pathogens, parasites, and diseases and plant and animal extinction risks. To sustain the earth's biodiversity, there is a need for new protection measures and better enforcement of the existing ones. We have about a decade to achieve urgent, transformative change in facilitating natural systems' ability to regenerate from human impact (nitrate, PFAS). To be able to deal with subsidence, another water management regime and building-site preparation needs to be implemented.

The socio-economic drivers provided challenges but also chances. The main challenge is changing our ways in urbanisation patterns, living differently and changing our energy model. This at the same time also gives chances for new economies. Spatial order is conditional for economic developments, especially in the fields of infrastructure & mobility and energy & resources. In the field of infrastructure and mobility, there are three important developments that highly impact the current system and might be a reason to re-think infrastructure and mobility. The first development is the digital society and working remotely (from home), a transition that was accelerated by the Covid-19 pandemic. The development of smart mobility and (for example) car-sharing is the second trend that changes the spatial impact of mobility on infrastructure. The impact of development of electrical and self-driving cars has to be considered as the third trend. In the field of energy and resources (production and use) there are also three main drivers of change. The energy system is subjected to an increase of energy use and the introduction of system's decentralisation and clean energy.

For resources, reduction of depletion and degradation of natural resources by transitions towards a circular economy through greater recycling and reuse.

In the coming decades all these challenges need to be tackled and chances can be capitalised, together they form an opportunity for a 'reset' of the existing Delta infrastructure that needs huge investments in this sector are foreseen in many deltas anyways. To accommodate change there is a need for an appealing perspective on the 'delta future' and the knowledge to develop the pathways to a sustainable and inclusive delta. It is more important than ever to collectively build the knowledge needed to develop these pathways in which transformations will likely be necessary. Both require a design-based approach in which these different perspectives are recognised and joint new perspectives are explored, identified and visualised.

JDU

The Journal of Delta Urbanism is a dedicated space for the dissemination of ideas and the construction, expansion, and collection of an international body of knowledge for the discourse of Delta Urbanism. The first issue 'Premises' started the sharing of academic innovation and critical theory, best practices and projects, fostering new dialogues and translations between fields of knowledge and their experts contributing to the discourse. The second and third issues continued to connect and expand the international community around Delta Urbanism on the topics of *Longue Durée* #2 and Nature Based Solutions #3.

The diversity in unity is expressed in the growing diversity of voices that the journal is accommodating in the issue. As in the former issues, academic essays are published in the section 'Papers'. The three other section types are 'Practice', 'Dialogue', 'Project' are proposed to connect to explorative research and practice. Finally the 'Dictionary' which in each issue gradually expands the Delta Urbanism language by exploring the meaning of the two terms Delta and Urbanism from an interdisciplinary design perspective.

In JDU #4, the concept of "Prospects" is introduced to gather and link contributions focused on the agency of design and research methodologies. These contributions reflect the lines of inquiry identified as crucial for advancing the Delta Urbanism research field. . This issue presents in the 'Paper' section the principles of prospects with a contribution by the collective of researchers in the Delta Urbanism research group at the TU Delft. The paper questions: "How can the research field of delta urbanism deliver a transformative 'prospect for action' in delivering fundamental, experimental and strategic & tactical pathways to a resilient Delta future in which assertion and proof are synergised?" The focus is on transformation by design research by unpacking it in six lines of inquiry to investigate fundamental, experimental, and strategic & tactical response to four fronts of action. These fronts are identified based on trends and challenges that deltas face and to which spatial order needs to respond in a coherent way: the climate front, the urban front, the response front and the cultural front. The six lines of inquiry, extremes, deltaic systems, flow, delta culture, human earth and urban earth, contribute to unique perspectives, from systemic approaches to extreme conditions, synthesis of interdisciplinary research, and innovative strategies for living in delta conditions. The collaboration on this paper went hand in hand with inviting external authors to contribute to this issue on Prospects with manuscripts that represent these lines of inquiry.

The second paper, situated in the 'deltaic systems' line of inquiry, by Sylvie Nguyen (École Polytechnique Fédérale de Lausanne, Switzerland) reveals the evolution of the Mekong delta's territory, through an atlas of palimpsests regarding the delta's past transformations primarily driven by the hydraulic management of its territory. The resulting environmental degradation and obliteration of much of the Mekong Delta's ability to self-regenerate. Through the theoretical perspective of alternative ways for metropolization defined in the 'Horizontal Metropolis' and the conceptual approach developed under the 'Project of Isotropy', post-rationality of the agrarian territory is proposed to promote the partial reinstatement of the Mekong's deltaic regenerative processes.

The ‘Practice’ section brings the contribution of Debra Solomon (Urbaniahoeve, VU Amsterdam, Netherlands) on Radical Observation (representative for the line of urban earth) and a paper by Berger cs. on Rising Waters (representative for delta culture). ‘Radical Observation’ is an artistic research method that is designed to impart an awareness of natural world dynamics to designers and stewards of urban food forest projects. Recognising that community groups learning to become ecosystem stewards have diverse educational and practical backgrounds, this method centres developing an individual and group methodology for practical landscape and soil care, based upon continuous site observation.

The second contribution to the “Practice’ section is from Hilke Marit Berger, Teresa Erbach, Annika Kuehn, Jan-Philipp Possmann (all HafenCity University Hamburg, Germany) and Gaby S. Langendijk (Deltares, Netherlands) titled ‘Rising Waters, Rooted Memories: Cultural Heritage as a resource for climate adaptation in Sinking Cities. This paper is the outcome of a research project “Sinking Cities: Cultural Heritage as a transformational resource” at the City Science Lab in Hamburg and argues that climate narratives are not new but can be found in cultural heritage , it is beneficial aim staging, arranging and performing cultural heritage as a form of knowledge production to broaden the view on climate narratives and tap into the transformative knowledge.

The ‘Dialogue’ section of this issue presents two important contributors to the field of Delta Urbanism: Kate Orff (Scape Landscape Architecture, Columbia University, NY, USA) and Henk Ovink (Special Envoy for Water, Dutch Government, Netherlands). The dialogue focused on four key aspects; values, design, projects and the future. The conversation delved into their commonalities, numerous similarities in their approach to work, shared optimism and their perspectives on design and what changes might be necessary at universities. The discussion covered lessons learned from their projects and outlined the next steps.

The section 'Project' is dedicated to work titles: Landscape Policies 'by Design' by Clara Olóriz Sanjuán and Alfredo Ramírez Galindo (both Architectural Association, London), representative for the line of extremes, that takes the case of Mexico City and Glasgow. The paper is about how designers and their spatial, visual and material knowledge, tools and skills in transdisciplinary collaborations can impact policy-making. Design is a political practice.

In the first issue of JDU, MaartenJan Hoekstra, architect, urbanist and historical linguist, Associate Professor Section of Urban Design at the Faculty of Architecture and the Built Environment, kicked off with the etymological origins, current meaning(s) and other interesting details of the two terms Delta and Urbanism. Like all issues, this issue presents again two scholars to give their disciplinary perspective on these terms. Kristina Hill (UC Berkeley, USA) wrote her understanding of the term "Delta" and Grahame Shane (Columbia University and Cooper Union, NY, USA) gave his view of the term "Urbanism".

We hope the contributions will be enjoyable and informative and we are eager to invite you for future contributions. Not only can you apply for all sections in this journal, but we are also open to well-considered experiments. Look forward to hearing from you!

Taneha, Fransje, Baukje, JDU Chief editors

JDU is a project by Delta Urbanism Research Group and DIMI Delft Deltas, Infrastructure and Mobility Initiative Delft University of Technology

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Graphic Layout

bruno, Venice (Italy)

Typefaces

Union, Radim Peško, 2006
JJannon, François Rappo, 2019

Publisher

TU Delft OPEN
<https://www.tudelft.nl/library/openpublishing>

Frequency: 1 volume per year

Publication Funding

TUDelft Delta, Infrastructure and Mobility Initiative

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*N.4 | Prospects | Editorial
Fall | Winter 2023*

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Citation

Bacchin, T. K., Hooimeijer, F., Kothuis, B., *Prospects*, Editorial, J. Delta Urbanism 4 (2023), doi.org/-

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All published contributions are submitted to a Blind Peer Review process except for the sections Dialogues and Dictionary.

ISSN: 2666-7851
p-ISSN 2667-3487