



Delft University of Technology

A White Paper: From Friction to Synergy in Climate Adaptation & Mitigation in the Netherlands

Nickayan, Samaneh; van Dongen, Robert; Warbroek, Beau; Liao, Feixiong; Eijkelenboom, A.M.; Sarabi, Shahryar

Publication date

2025

Document Version

Final published version

Citation (APA)

Nickayan, S., van Dongen, R., Warbroek, B., Liao, F., Eijkelenboom, A. M., & Sarabi, S. (2025). *A White Paper: From Friction to Synergy in Climate Adaptation & Mitigation in the Netherlands*. Abstract from 12th International Conference on Urban Climate, Rotterdam, Netherlands.

Important note

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

Please check the document version above.

Copyright

Other than for strictly personal use, it is not permitted to download, forward or distribute the text or part of it, without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license such as Creative Commons.

Takedown policy

Please contact us and provide details if you believe this document breaches copyrights.

We will remove access to the work immediately and investigate your claim.



A White Paper: From Friction to Synergy in Climate Adaptation & Mitigation in the Netherlands

Samaneh Nickayin¹, Robert van Dongen², Beau Warbroek³, Feixiong Liao², AnneMarie Eijkenboom⁴, and Shahryar Sarabi²

¹Wageningen University and Research - Environmental Sciences

²Eindhoven University of Technology - Built Environment

³University of Twente - Engineering Technology

⁴Delft University of Technology - Architecture and the Built Environment

Climate resilience remains a crucial goal for the built environment. Our ancestors successfully inhabited some of the Earth's harshest climates, from the Arctic to deserts. If they could overcome such challenges, why should our high-tech society fail?

In a white paper, the 4TU Domain Acceleration Team (DAT) on Climate Adaptation and Mitigation, composed of members from four technical universities in the Netherlands, examines why modern societies struggle to achieve climate adaptation and mitigation targets.

While mitigation efforts, such as reducing CO₂ emissions, have clear, universally agreed-upon goals, adaptation efforts tend to be local and lack established targets and benchmarks, making progress challenging to track.

Climate mitigation and adaptation measures in the built environment are interdependent, requiring careful coordination to avoid inefficiencies or counterproductive outcomes. For instance, the energy transition (climate mitigation) demands major infrastructure changes, while climate adaptation requires significant urban modifications and underground work. These efforts must align to ensure resilient and future-proof inhabitancy of urban areas; without integration, some measures may hinder or negate the benefits of others.

A key challenge is the lack of cross-sector collaboration. Different sectors—energy, climate, mobility—operate under distinct frameworks, policies, and timelines, complicating the implementation of solutions. The shortage of skilled professionals in the Netherlands limits the capacity for cross-sector collaboration, as many lack expertise to navigate both climate and energy sectors, as well as spatial planning policy.

Similarly, while spatial analysis tools such as Klimaateffectatlas and Toolbox Klimaatadaptatie exist, they typically focus on individual challenges like mitigation or adaptation. There is a critical need for also integrating tools that assess the spatial implications of policy goals across sectors, and temporal scales.

The white paper addresses these challenges and explores potential cross-disciplinary synergies, aiming to drive innovative solutions for future climate resilience, where climate adaptation and mitigation always go hand in hand.