

Willingness to Pay for Climate Adaptation

International Case Studies for Private Developers' Preparedness to Contribute to Urban Climate Adaptation

Executive Summary

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There is increasing global awareness that, despite efforts to reduce greenhouse gas emissions, adaptation to climate change is necessary. Additional stresses related to climate change, including rises in sea level, river flooding, urban heat islands, and extreme rainfall and drought, present an emerging challenge for public urban infrastructure. Local governments are required to facilitate additional investments in climate-proof public infrastructure strategies, such as permeable pavements, separation of storm water and sewage, strategic application of greenspace and trees, water storage and retention, improved draining and grading plans, and even major infrastructure like sea walls. In times of fiscal stress, however, any new infrastructural investment poses a substantial financial challenge for municipalities. Not much is known yet about real estate developers' willingness to contribute to these public infrastructure investments. This study has explored real estate developers' attitude towards investments that reduce climate risks, by a comparative case study of three cities that are, through their location in coastal zones, vulnerable to climate risk and in need of climate adaptation measures, respectively the contiguous cities of Charleston, North Charleston, and Mount Pleasant (South Carolina, United States), the Liverpool City Region (United Kingdom), and the City of Rotterdam (the Netherlands).

Sense of urgency

The case studies analyze both the current role of land value capture (LVC) and real estate developer contributions in inclusive urban climate adaptation strategies, and the prospective role LVC may play. While the public sectors in Charleston, Liverpool, and Rotterdam, due to their vulnerable geographical positions as coastal cities, feel the urgency to protect themselves against climate risks and have developed policies to adapt the cities to climate changes, the actual implementation of sufficient local climate adaptation measures is still work in progress. However, lack of sufficient revenue sources at the local level make them dependent on federal / central government funding and still prevents them from a speedy implementation of the required climate adaptation measures.

What drives private developers?

Most, if not all private developers in our case studies share the public sectors' sense of urgency to change the way cities are planned and developed in the changing climate. From this perspective, private developers in our cases claim that they are certainly willing to consider contributions to climate adaptation measures. However, at the same time they demonstrate a wait-and-see attitude and point to various 'obstacles' to their financial contributions. First, while most developers see the necessity of big, public infrastructure projects that protect cities from flooding, not all developers are convinced yet that additional climate adaptation measures in their own development projects are required. What plays a role is that public sector policies and regulations with regard to these measures are not always transparent and consistent. Second, inconsistency also appears with regard to public and private sector responsibilities with regard to climate investments. As long as the public sector fails to take a clear standpoint on this, quite understandably private developers may be hesitant with their contributions. Third, investment decisions by private developers in the end depend on the profitability of their business case. As long as convincing evidence is lacking that climate adaptation measures lead to increases in property values, they argue that their eventual contributions to these measures add to their costs, but are not likely to increase their revenues from selling properties. Finally, private developers might actually rather prefer investments to mitigate climate change (e.g., 'green buildings', investments that support energy transition), instead of contributions to climate adaptation, since the climate benefits of mitigation investments are relatively easy to measure and refer to clear climate goals.

What role can land-based finance play in funding climate adaptation measures?

In all three cities land-based finance has played so far a rather limited role in funding climate adaptation measures. We found a number of possible 'explanations' for that. Firstly, local government LVC policies regarding climate adaptation are not transparent and unclear. Consequently, the public sector often seems unable to present a properly motivated request for developer contributions to climate adaptation, weakening the public sector's position in negotiating these contributions. Secondly, the lack of evidence that project-level climate adaptation measures increase property values makes private developers skeptical about the extent to which they would benefit from climate actions. And thirdly, private developers are concerned about the profitability of their development projects in general, due to increased building costs and additional building requirements (e.g., energy transition and circular economy investments) and ask for prioritizing different types of public infrastructure contributions.

What can go wrong? Risks of market-based finance

Participants in the cases have pointed to the risks of using market-based finance as a source for funding climate actions as well. Protection against climate risks is considered in all three countries as primarily a government responsibility, and sufficient protection cannot rely on (uncertain) market-based finance alone. Moreover, equity issues and gentrification dilemmas are likely to enter the discussion. The responses of the participants in our case studies show that, in the context of the limited financial feasibility of development projects, climate adaptation contributions may lead to negotiations about a *tradeoff* between different public goals. If local governments require climate adaptation contributions, other contributions – to affordable housing or public transport, for example – must come down, to secure the financial feasibility of the development project. Another equity issue refers to the fact that land-based finance often only targets new development projects, while climate risks are likely to threaten larger parts of a city.

Key elements of a successful land-based finance strategy for climate adaptation

We believe that land-based finance can play a bigger role in the future, primarily as gap funding and in addition to bigger public climate investments. At project level, participants in our case studies have suggested that the integration of climate adaptation measures in “regular” infrastructure projects might reduce costs and improve the feasibility of their business cases. At the local level, local authorities should consider installing a local climate fund and requiring developer contributions to such a fund. Revenues from property taxes and/or dedicated tax income, from sewage levies and/or (regional) water taxes, can be combined with land-based revenues in such funds. Bankability of larger public climate adaptation investments may consequently improve.

We advise local governments, as key elements of the introduction of a successful land-based finance strategy for climate adaptation: 1) to develop a clear climate adaptation strategy; 2) to increase the ‘predictability’ of required developer contributions to climate action; and 3) to provide evidence of successful climate adaptation measures and their impact on both the reduction of climate risks and their effect on property values.

A research agenda

We recommend a research agenda that can support a much more *evidence-based* land-based finance strategy for climate adaptation investments. Firstly, more research is needed into the impact of both climate risks and climate adaptation measures on property values, since private developers’ investment decisions will in the end depend on that. Secondly, private developers’ business cases often remain a

black box for local governments, while local government LVC policies at the same time often are not transparent to private developers. Consequently, negotiations about developer contributions often struggle with information asymmetry problems. Research into business cases of development projects can be helpful to build a better case for land-based finance, by providing information on the impact of land use change on land values and how much of that increment land value is captured by local governments. Thirdly, we recommend further study of how land-based finance, by increasing bankability, can act as leverage to additional public and private sector financing into climate adaptation measures.