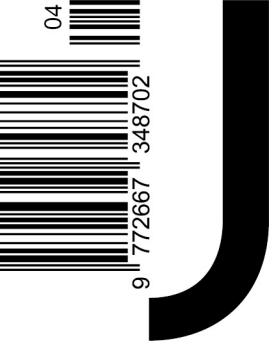


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*Rising Waters, Rooted
Memories:
Cultural Heritage as
a resource for climate
adaptation in Sinking
Cities*

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Communities around the world are facing climate change impacts with coastal communities being particularly vulnerable. While there is a growing awareness of the pivotal role of culture in adaptation, there is a lack of practical approaches for the incorporation of culture in adaptation planning. Skills and knowledge for today's adaptation challenges can be drawn from cultural heritage since the confrontation with climatic changes and extreme weather events are an elementary feature in human history. We argue that cultural heritage is a rich resource in this context and describe five functionalities of heritage. It can be used to transfer knowledge, to process loss, to strengthen community resilience, to change paradigms in adaptation practice, and to find socially accepted solutions in post-disaster reconstruction. The transdisciplinary research project *Sinking Cities: Cultural Heritage as a transformational resource* focuses on the potential of cultural institutions and artists in using heritage to support climate adaptation in coastal communities.

INTRODUCTION

Today 2.4 billion people, roughly one third of the world's population, reside in coastal areas and 57 percent of the world's population live in cities¹. In fifty years from now, cities like Bangkok, Jakarta, New Orleans, or Bremen will no longer look the way we know them. "Parts of them would still be sticking above the water", says former NASA scientist James Hansen, "but you couldn't live there"². Or could you? The answer to this question depends not only on the height of sea levels, but also on the question of what makes a place sufficiently liveable for people. Whether people consider a place to be liveable depends on their way of building, farming, eating, and working. It depends on their knowledge and values as well as on social structures and risk perception. Before places become by biological definition uninhabitable for humans, the possibilities to adapt depend on factors that are culturally influenced³.

Whereas the need for cultural change has been largely ignored in climate policy for a long time, attention has recently increased. At COP28 in 2023, the relevance of culture was discussed in a High Ministerial Dialogue⁴. There, the desire for a paradigm shift was clearly formulated: Climate Change should not only be seen as an environmental, financial, and scientific challenge but as a cultural one as well. But what does this mean in practice? The answer to this obviously depends on the question of what culture is.

"Culture is an exceptionally complex word", the introduction to cultural theory from Terry Eagleton⁵ commences and continues by identifying four major senses. "It can mean (1) a body of artistic and intellectual work; (2) a process of spiritual and intellectual development; (3) the values, customs, beliefs and symbolic practices by which men and women live; or (4) a whole way of life"⁵. While acknowledging that a uniform definition of the term across different disciplines and practices is not possible, the ambiguity of the term is a challenge when it comes to calls for the consideration of culture in climate action.

Culture here is understood in the sense of the third concept mentioned, which has become dominant in large parts of the academic world since the nineties⁶. Thus, culture is defined as the complex of ideas, forms of thinking and feeling, values and meanings created by a group of people, which materialise in systems of symbols. Accordingly, not only material (e.g. artistic) forms of expression are to be counted as part of culture, but also the social structures and mental dispositions that make the production of such artefacts possible⁶. In contrast to this, we understand art as the profession in which culture is reflected upon with artistic means⁷.

Coming back to the demand to tackle climate change as a cultural challenge, this understanding of culture means addressing forms of thinking and feeling, values and meanings as well as their expression. It seems necessary to tackle sub-areas individually and to identify specific fields of action without ignoring the links and interdependencies between the different components and facets of culture. This position paper focuses on the role of cultural heritage understood as culture that is "cared for by the community and passed on to the future to serve people's need for a sense of identity and belonging"⁸ in climate adaptation. We argue that cultural heritage should be used as a resource in adaptation processes and present a practice-based example of how transdisciplinary research can contribute here.

- 1 Wang, 2018
- 2 Hertsgaard, 2015
- 3 Adger et al., 2009
- 4 UNFCCC, 2023
- 5 Eagleton, 2016
- 6 Reckwitz, 2004
- 7 Cultural Heritage is understood as a repository of ideas, stories, images in the collective memory as well as material objects and places. The sense of identity and belonging within a community is largely formed through cultural heritage.
- 8 Merriman, 2019, p.8

CULTURE AND LIMITS TO ADAPTATION

The public debate and (inter-)national policies traditionally focused predominantly on reducing greenhouse gas (GHG) emissions to tackle climate change. During the last decades it became obvious that we need a strengthened effort in mitigation, as well as planning and implementing climate adaptation action⁹. Already in 1998, the Intergovernmental Panel on Climate Change warned: "Mitigation cannot be the entire response to the threat of climate change. We will experience a substantial amount of further climate change even if we make huge cuts. We should, therefore, be thinking seriously about how we can best adapt"¹⁰. Our ability to adapt to climate change is not limitless. If we do not undertake swift and deep mitigation on a global scale, as well as if we do not enhance the adaptive capacity of our societies and coastal systems, adaptation may no longer be an option^{11, 12}. Coastal systems and urban areas at coastlines are particularly susceptible to limits to adaptation. They are at the forefront of experiencing sea level rise and only have a limited array of adaptation options to safeguard them from rising sea levels^{9, 12, 14}.

As a part of the concept of limits to adaptation, it is quite common to analyse the limits as universal, biological, economic or technological thresholds beyond which adaptation will no longer be possible (e.g. ^{12, 15, 16}). These limits are then seen as exogenous forces, predominantly outside of human control, and as such they are analysed independently of social predispositions. Thomas et al.¹² call them hard limits because they denote contexts where no form of adaptation can avoid intolerable risks, losses and damages. Even though such hard limits to adaptation obviously exist, we agree with Adger et al.³ who argue that adaptation to climate change is more often limited by the values, perceptions, processes, and power structures within society. Values and perceptions of a group of people are shaped by the culture of that community. Hence, if culture is a decisive factor in limits to adaptation it is also decisive for the ability of communities to transform and adapt. As culture is an evolving and fluid concept, so are the associated limits neither universal nor absolute: all of them are mutable in many ways and what may be a limit in one society may not be one in another. In the classification of Thomas et al.¹² they can be included among the so-called soft limits, as these types of limits to adaptation can be changed through social, institutional, or technological innovations and transformations.

In connection to limits to adaptation, another crucial point are the adaptation goals. These goals range from the conservation of the status quo to societal progress, to safeguarding livelihood, or even to transforming societies towards sustainability. Adaptation may not be about merely surviving, but rather about a desirable life for humans. Naturally, the question arises what a desirable life is and how it can be possible under current and future climate change. This is once again strongly dependent on cultural aspects. It is an open question that cannot be answered universally and should be negotiated in every society confronted with the need to adapt to climate change, or transform towards more resilient states. Any substantial and sustainable adaptation requires societal and cultural transformation towards a more ecologically balanced and socially integrated, fair society¹³. How culture affects adaptive pathways - trajectories in time that explore and assess adaptation options under climate change - is demonstrated by

- 9 Berrang-Ford et al., 2021
- 10 Perry et al., 1998
- 11 Mechler et al., 2020
- 12 Thomas et al., 2021
- 13 Filho et al., 2021
- 14 Martyr-Koller et al., 2021
- 15 Dessai et al., 2004
- 16 Oppenheimer, 2005

Adger et al.³ who also draw the conclusion that cultural dimensions must be addressed in adaptation processes and pathways. They propose appropriate-scale individual and community involvement in determining the goals of adaptation policies and plead for a better inclusion of cultural dimensions in scientific assessments of climate change impacts. In summary, culture has the potential to affect and possibly overcome soft limits to adaptation and is critical to define climate adaptation goals and pathways. It is therefore pivotal that these connections between culture and climate adaptation are better understood, especially for regions at the forefront of reaching limits to adaptation, such as urban areas under current and future sea level rise.

17 Frankopan, 2023
18 Dutt et al., 2019
19 Zheng et al., 2014
20 Northcott, 2008
21 Escobar, 2001

CULTURAL HERITAGE AS A RESOURCE FOR ADAPTATION

As Frankopan¹⁷ shows, adaptation to changing climatic conditions has been a crucial factor in human history since its very beginning. Climatic changes promoted the rise of the first advanced civilisations, for example in the Indus Valley¹⁸, but also contributed to the fall of great empires such as the Ming Dynasty in China¹⁹. Especially abrupt changes and extreme weather events have always been a source of suffering and violence but also a key catalyst for cultural invention²⁰. The eruption of the Tambora volcano in Indonesia in 1815 resulted in the 'year without a summer'. It led to a terrible famine in Europe and the US the following year. This natural hazard and associated short-term change in climate had a significant influence on the development of welfare systems in Europe, the professionalisation of agriculture, as well as on the development of horror stories in literature and romanticism in painting¹⁷. Cultures are always rooted in local places and when climate change impacts strike, cultures and communities change²¹. The history of climate is closely interwoven with cultural history and today we find in cultural heritage a multitude of experiences and knowledge resulting from the confrontation with climatic changes and extreme weather events.



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Even if climate change as a global phenomenon might be "unimaginable"²² we argue that every culture has access to a repertoire of cultural heritage to draw images, words and lessons from. "Climate narratives", to borrow a term from Amitav Ghosh²², can be found across all continents and in virtually all cultures. Some of these narratives are endemic to one local society while others can be found in cultures worldwide, the universal deluge (Sintflut) being the prime example and one of the few universal myths recognized by cultural anthropology²³. The motif of the sunken city equally resonates to cultures on all continents and in all epochs and is now a common trope in pop culture globally from Jules Verne to the Marvel Universe^{24, 25}. Oral traditions belonging to Australian Aboriginal groups refer to rapid sea level rise about 7000 years ago²⁶ and hundreds of monuments in North Japan raise public awareness for tsunamis among future generations, the oldest being more than 600 years old²⁷. On Simeulue Island, Tsunami songs and stories became part of the local culture and have proven to be an effective tool for disaster risk reduction²⁸. Countless songs, stories and monuments, rites and traditions, traditional building and land management techniques developed in response to natural hazards or climatic changes and have been passed from generation to generation. This cultural heritage might be a rich resource for current climate adaptation challenges in various ways:

1 *Cultural Heritage can be used as a source and medium of local knowledge.*

The definition of intangible cultural heritage itself refers to the traditions or living expressions passed down over generations including oral traditions, knowledge and practices²⁹. Hence, knowledge and cultural heritage are inherently connected. In the context of climate action, local knowledge is particularly emphasised and its relevance for climate adaptation has been documented in numerous studies^{29,30}. Local knowledge systems encompass personal and collective experience and oral history to generate intergenerational, place-based knowledge in urban or rural communities. Types of adaptation found in this knowledge are practice and behavioural responses (e.g. land management techniques), management and planning (e.g. warning and observation systems) and physical infrastructure (e.g. traditional buildings)^{30,31}. Several studies highlight the critical role of understanding the cultural context to give meaning to local knowledge in relation to climate change³².

2 *Cultural heritage offers methods and starting points for the emotional processing of change and loss.*

Precisely because heritage is so strongly linked to identity, the loss of heritage also offers the opportunity to deal with change and loss on a personal and societal level. One example gives Ferraby³³, who documented the destabilisation and erosion of the Jurassic World Coast Heritage Site in a three-year participatory photography project. She concludes: "Witnessing these [landslide events] has made

22 Ghosh, 2016
 23 Rohr, 2014
 24 Dobraszczyk, 2017
 25 The term "climate narrative" is lately gaining momentum in various scientific communities. Through narratives we try to make sense of occurring events and phenomena and integrate them into our worldview by "telling stories" (Van der Leeuw, 2020). In regard to climate change these narratives are widely acknowledged to play the decisive role in motivating or demotivating climate action (Hinkel et al., 2020).
 26 Nunn & Reid, 2016
 27 Ranghieri, 2014
 28 Sutton et al., 2021
 29 Orlove et al., 2022
 30 Petzold et al., 2020
 31 Petzold et al. (2020) use these categories for indigenous knowledge, but they are based on a review that also includes findings on local knowledge. In the literature, the terms indigenous and local knowledge are often used interchangeably. We agree with Orlove et al. (2022) who consider indigenous knowledge systems as a certain type of local knowledge systems that are necessarily based on a single specific culture.
 32 Naess, 2013
 33 Ferraby, 2015

it easier to understand the dynamic nature of this landscape and the inevitability of change"³³. While the focus here is on natural heritage, Caitlin DeSilvey³⁴ proposes in her book 'curated decay: heritage beyond saving' a similar approach for cultural heritage which harbours great potential for conflict but opens possibilities to deal collectively with unavoidable losses.

In other cases, however, the preservation of cultural heritage is used to process loss and change³⁵ sees an example for this in various community museums in coastal Brittany. According to her, the conservation of traditional practices as well as material, visual and oral culture can enable residents of coastal Brittany to understand and imagine their relationships to place and environment and to formulate new responses to contemporary challenges³⁶.

Besides, cultural heritage includes rites, songs and places of mourning. Cunsolo-Wilcox³⁷ concludes that ecological mourning can catalyse adaptation processes when it comes from acknowledging, naming and transforming in the face of loss. Public mourning can have a transformative character, affirming shared values and community³⁸. Holtorf³⁹ argues that "cultural resilience, risk preparedness, post-disaster recovery and mutual understanding between people will be best enhanced by an increased ability to accept loss and transformation"³⁹.

3 *Cultural heritage can strengthen community resilience.*

Heritage in the form of buildings and sites but also locally based intangible heritage can mean that people develop stronger attachments to a place because heritage makes places irreplaceable⁴⁰. Strong place attachment comes with a greater sense of loss when change occurs – whether through relocation⁴¹, environmental change, or adaptation measures⁴². Even though such a sense of loss has profound impacts on emotional well-being^{43, 44}, the connection to place and values coming with the attachment to heritage can increase the ability to deal with adaptation⁴⁰. When people are strongly attached to a place, they are more likely to stay and adapt. In this way, they are more resilient, having a greater capacity and willingness to collectively manage and adaptively respond to challenges caused by climate change impacts^{45, 46}.

Aktürk and Lerski⁴⁷ advocate for the resiliency benefits of intangible heritage for displaced persons. They point out that intangible heritage that would previously have been practised in lost place-based tangible heritage of homes and landscapes can help forge new meanings and community and enhance community resilience. Documenting the changes brought by climate change can also itself become part of heritage^{48, 49} and constructing collective post-disaster narratives can "create a recollection which is less likely to produce the same anxiety and allows individuals to incorporate disaster events into community history"⁵⁰.

- 34 DeSilvey, 2017
- 35 Coughlin, 2012
- 36 Whether such a transfer to current challenges really happens in an individual case is likely to depend on the curatorial realization (and other factors).
- 37 Cunsolo-Wilcox, 2012
- 38 Mark & Di Battista, 2017, p. 248
- 39 Holtorf, 2018, p.639
- 40 Kuruppu & Liverman, 2011
- 41 Dugan, 2007
- 42 Clarke et al., 2018
- 43 Marshall et al., 2019
- 44 Barnett et al., 2016
- 45 Jigyasu et al., 2013
- 46 Guo et al., 2018
- 47 Aktürk & Lerski, 2021
- 48 Egberts & Riesto, 2021
- 49 Rockman & Maase, 2017
- 50 Moulton, 2015, p. 319

4 *Cultural heritage can help to question and change existing assumptions and paradigms.*

51 Casimiro, 2023
52 Pauwelussen & Verschoor, 2017
53 Jensen, 2017
54 Van Alphen, 2020, p. 319
55 Boen & Jigyasu, 2005

Throughout history people developed different relationships to their environment, going hand in hand with different values, risk perceptions and strategies. In times of a rapidly changing climate, an examination of their cultural heritage could provide impetus for a rethink. One example is amphibious lifestyles that have developed in diverse places reaching from a 19th-century village in Portugal⁵¹ to places inhabited by the Bajau in Indonesia⁵². Corresponding cultures are called amphibious because they take water flows as a given and organise life around it – as exemplified by living in modular mobile homes, houses on stilts or floating villages, using boats as a primary means of transport, or growing crops in water⁵³. Such cultures cannot be transferred between different population groups and locations. But learning about and from them can open new possibilities and help to question and break down existing assumptions and structures. One example is the Room for the River program in the Netherlands that marks "a paradigm shift in flood management that was developed, ironically, by reviving much older traditions"⁵⁴.

5 *Incorporating cultural heritage can help to find socially accepted solutions for the (re-)construction of housing and infrastructure.*

Adaptation measures that are not culturally adapted often do not have the desired effect or are even harmful to the people they are supposed to benefit. An example of this are resettlements after extreme weather events with the aim of moving people to less risky locations. There have been many instances in the past where new-built settlements were abandoned after a short time because their location, functionality and aesthetics did not match the cultural identity and the needs of the inhabitants⁵⁵. Jigyasu et al.⁴⁵ emphasise that local knowledge and cultural heritage need to be studied in depth before any intervention is made from outside. Aktürk & Lerksi⁴⁷ point out that especially the recognition and conservation of intangible heritage is of great importance for the social inclusion and integration of displaced communities. Two examples showing how cultural heritage can be embedded in the local development of adaptation infrastructure are presented by Egberts & Riesto⁴⁸. In their case studies from the Netherlands, references to the past offered local narratives and worked as a steppingstone for residents and stakeholders to identify with dike construction projects and get involved in climate adaptation planning. Heritage values were used to develop infrastructure and a narrative that enhanced place-making.

The scholarly interest in the implementation of cultural heritage into adaptation strategies has increased during the last decade. However, the larger part of scientific literature on adaptation and heritage is focused on physical impacts of climate change on individual buildings, monuments, or sites⁵⁶. Where cultural heritage is considered a relevant source of knowledge, the focus is mostly on preservation rather than on applying knowledge and practices drawn from this cultural heritage, learning from them, or transferring them to other contexts and people²⁹. This could be due to the widespread focus on technical solutions in adaptation politics and science⁵⁷ and the focus on material heritage in high-income countries who dominate the heritage discourse²⁹.

56 Orr et al., 2021
57 Brown, 2011
58 Berger, 2018
59 for an overview see e.g. Apetrei et al., 2021; Kampmann et al., 2023
60 e.g. Beecroft et al., 2018; Wanner et al., 2018
61 cf. Caniglia et al., 2017; Broto and Bulkeley, 2013
62 e.g. O’Gorman & Gaynor 2020; Houston et al. 2018

MOBILIZING CULTURAL HERITAGE: THE SINKING CITIES PROJECT

The research project Sinking Cities. Cultural heritage as a transformational resource for climate change adaptation in coastal metropolises, based at HafenCity University Hamburg and RIFS Potsdam, tests how heritage-based artistic work develops a capacity to affect adaptation processes. As artistic projects in urban spaces often take place at the interfaces of political activism, social work, and urban planning⁵⁸, we regard artists as relevant actors in climate adaptation. Thus, together with cultural institutions, this project creates three participatory artistic formats that explicitly deal with the respective local cultural heritage and take place publicly in three coastal cities that are all threatened by rising sea levels and flooding: Alexandria (EGY), Bremen (GER) and Jakarta (IDN).

The field of knowledge-related concepts in sustainability science, in particular real-world laboratories, provide the framework for this project⁵⁹. Within every city, we set up real-world laboratories⁶⁰ and design cultural formats as experiments⁶¹. Knowledge production will be a transdisciplinary and collaborative process that involves both non-scientific collaboration partners and a general audience. In our case, the team in Germany is expanded by a transdisciplinary research and production team consisting of three cultural institutions (one each city) acting as producer for the local cultural format and local artists who co-design and realise the formats for a local public audience.

Referring to the findings in artistic research, where questions of power relations in collaborative processes have always been central⁵⁸, the project makes a clear distinction between collaboration and cooperation. Within the collaborative processes we place the practice of working together as equal partners at the centre and ask how a collaboration can take place that means the development of a common working ground and language; a collaboration that goes beyond the mere staging of art and refrains from exploitative practices between collaboration partners with different geographical, disciplinary, and budgetary set-ups. We try not only to open traditional knowledge production to transdisciplinary partners, but also to include alternative sources of knowledge, such as local cultural heritage. In particular, we focus on diverse nature-culture relationships and their role and relevance in adaptation processes⁶². The practice of knowledge production itself thus moves to the centre of the project. On the one hand, knowledge about local climate adaptation processes is to be elicited; on the other hand, the question arises as to how these specific challenges can be addressed methodologically. We do not only attempt to open up classical knowledge production to transdisciplinary partners,

but also the inclusion of alternative knowledge sources, such as local cultural heritage, in order to learn the many ways nature-culture relations are being considered and acted upon⁶².

63 cf. Caniglia, 2017
64 Kohler et al. 2021
65 cf. Bogner 2010; Karvonen & Van Heur, 2014

The project is structured around three collaboration phases: co-design, co-production and co-evaluation:

Co-design: The first phase of the project centres around the gathering of local knowledge. Researchers, artists, and deputies from city administration share their insights on specific adaptation challenges and cultural heritage to work out possible levers for the cultural formats. The focus of these initial approaches lies on creating two different types of situated knowledge: analytical knowledge about the local specifics of sea level rise, land subsidence and flooding as well as actionable knowledge regarding the capacity of cultural heritage as transformation resource⁶³.

Co-production: In the second phase, the cultural formats are developed and implemented by the team. With regard to the five categories outlined above, three of them seem particularly relevant for the scope of the project: The collective processing of loss, the strengthening of community resilience and the questioning of assumptions and paradigms in flood prevention. Using artistic practices like storytelling, performance, and staging, as methods, we expect the development of the cultural formats and the corresponding research process to challenge traditional ways of knowledge making in lab environments and to enable alternative approaches of learning. In this regard, we examine what is considered adequate knowledge (making) and what is excluded, not taken seriously or disregarded.

Co-evaluation: To analyse the transformative capacity of cultural heritage as well as the collaborative research setups, we use ethnographic methods, like interviews, participatory observation (e.g. rehearsals, team meetings, mapping actors and infrastructures) and the evaluation of archival documents. Evaluation criteria refer to effectiveness (e.g. monitored as spillover effects⁶⁴), social and political aspects of knowledge making as well as blind spots and unplanned results of collaborative practice.

Conceptualized as transformative research infrastructures, the three labs identify a similar challenge: namely a deeper understanding of the (potential) role of cultural heritage-based formats in processes of transformation toward climate adaptive futures. Our focus lies in evaluating the different ways of collaboratively mobilizing cultural heritage in the context of adaptation. However, the extent to which comparability across the three labs can be established in this way is still to be investigated. Despite their title and analogue to classical lab settings, real-world laboratories are artificially produced infrastructures and environments that intervene accordingly in urban spaces and organise what is to be researched in their own way⁶⁵. Yet, in contrast to traditional labs, environments in urban experiments are changing constantly, in particular when it comes to collaborative research settings including local and non-local actors, intensive nature-culture relations, and changing variables and processes. Thus, real-world experiments are local by definition. However, as Karvonen and Van Heur emphasise, it is exactly through ‘experiments, [that] relations

are established between the local and the non-local, between the contingency of a particular laboratory site and the universality of concepts and theories'⁶⁶. In our case, it is not about investigating the scalability of laboratory infrastructures or specific concepts, but about learning a collaborative practice enabled by these research facilities. Real-world labs allow us to build a common ground through dense collaboration and to discuss and investigate a deeper understanding of the role of cultural heritage-based formats in processes of transformation.

In order to connect the knowledge gained within this spatially dispersed and temporally diverse network the project refers to Robinson's⁶⁷ concept of "thinking cities through elsewhere" and studies operationalizing this concept in the realm of urban laboratories⁶⁴. We investigate this comparative approach to learn about worldings in Alexandria, Bremen, and Jakarta and to critically reflect options for a trans-cultural understanding and cooperation. While Alexandria is already marked by the tragic first sinking of the old town, Jakarta is the epicentre of current global threat scenarios. Meanwhile Bremen does not yet have to contend with serious damage but sees itself much more threatened in the future. The Sinking Cities project is explicitly designed to be iterative. Laboratories may trigger interventions whose effects serve as a source of inspiration for the cultural format within the other cities. Thus, local preconditions become connected to completely different contexts.

- 66 Karvonen & Van Heur, 2014 p.388
- 67 Robinson's, 2016



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For climate adaptation measures to be fair, socially inclusive, and sustainable, we consider it essential to consider the lived reality and values of the social groups involved. McNamara et al.⁶⁸ highlight that residents who understand their local context are best positioned to design and drive adaptive solutions. Their assessment of community-based adaptation initiatives indicates that adaptation decision making is likely to become less effective when it becomes more geographically distant and more top-down⁶⁸. We argue that this specificity involves an understanding of culture as a defining element of resilience and adaptive capacity and that soft limits to adaptation are highly dependent on cultural aspects. Regarding the development of adaptation measures, cultural heritage might be a resource in various ways. The Sinking Cities project contributes to practical climate adaptation endeavours and focuses on the capacity of cultural heritage within three local contexts, especially regarding the potential of heritage in the collective processing of loss, the strengthening of community resilience and the questioning of assumptions and paradigms in flood prevention. The real-world laboratories are thus to be understood as applied science, striving to develop and test practical approaches and methodologies for what might be called 'cultural climate adaptation'. Collaborative knowledge making sits on the centre of the research practice and builds the common ground for the transdisciplinary collaboration. Since the research network includes not only scientists but also cultural institutions, curators, and artists, we hope that the network built for this research project will sustain as a network of cultural climate adaptation endeavours. Cultural heritage offers a multitude of practices, experiences, and knowledge resulting from the confrontation with climate-related challenges that should be considered in climate adaptation today.

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