



The transformative potential of managed retreat in the face of rising sea levels

The effects of climate change, particularly sea-level rise, are likely to provoke unprecedented movement of people over the coming decades. It is estimated that between 350 and 630 million people will be affected by sea-level rise over the next 80 years, and many of these people may relocate in search of safety, resources and opportunities.¹ Movement on such a scale will undoubtedly have enormous humanitarian, environmental and geopolitical implications.

Planned relocation or resettlement – also known as managed retreat – has been practised around the world for centuries but is attracting increased attention as a climate adaptation strategy. Research on cases of managed retreat in diverse locations around the world suggests that it could make a significant contribution to wide-scale, positive social transformation in the direction of sustainability, but there are also significant risks. Knowledge gained from experience with managed retreat should be used to ensure that the monumental efforts needed to adapt to climate change benefit those involved.

What is ‘managed retreat’?

Managed retreat is a planned effort to permanently move people and assets away from hazardous places and resettle them in safer locations. It currently occurs most often in places where structural adaptations (e.g. erecting barriers) are not feasible. Retreat may involve relocating a handful of people or thousands, and it may be led by communities or governments. **Climate migration**, which is not considered here, is the largely uncoordinated movement of people due to climate change, environmental degradation or associated economic and humanitarian drivers.

This brief is based on a peer-reviewed article that explores how “[managed] retreat – as both a concept and a practice – has the potential to change societal perceptions of climate risk, challenge techno-optimistic in situ adaptations, and foreground issues of equity as a primary concern in adaptation”.²



Communities around Caño Martín Peña © Doel Vázquez



A successful voluntary retreat led by the community-founded Corporación del Proyecto ENLACE del Caño Martín Peña in Puerto Rico had a strong community buy-in during the process because the retreat prioritized protecting residents from displacements by offering affordable safe housing in the area chosen by the participants. Residents participated actively in the decision-making process, construction of new homes and provision of psychosocial support to alleviate emotional distress associated with relocation.³

Community assembly with active participation in decision-making
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Unlocking the potential of managed retreat for social transformation

The concept of retreat is very potent. The very word ‘retreat’ is politically charged and often associated with loss, defeat and the failure of structural or technological solutions. However, the prospect of retreat can help to make climate change ‘real’ in people’s minds, and can promote a change in perceptions, narratives, norms and debates about climate adaptation. More specifically, it can help to change social discourse by making climate risks immediate, personal and embodied; by generating empathy; and by questioning approaches to adaptation that rely on technological dominance of nature rather than working with nature. Public discussions about who relocates and to where, who stays behind, who should receive what kind of government support and how such decisions are made, can reveal the role historic injustice has played in shaping climate risk and adaptation options.

The concept of retreat may offer a different perspective on our relationship with nature and a different narrative on what it means to adapt. It can be conceived as a positive surrender to nature (‘making room for the river’), inspiring new, positive ways to reconnect and coexist with nature and protect the natural ecosystems that are essential to human wellbeing.

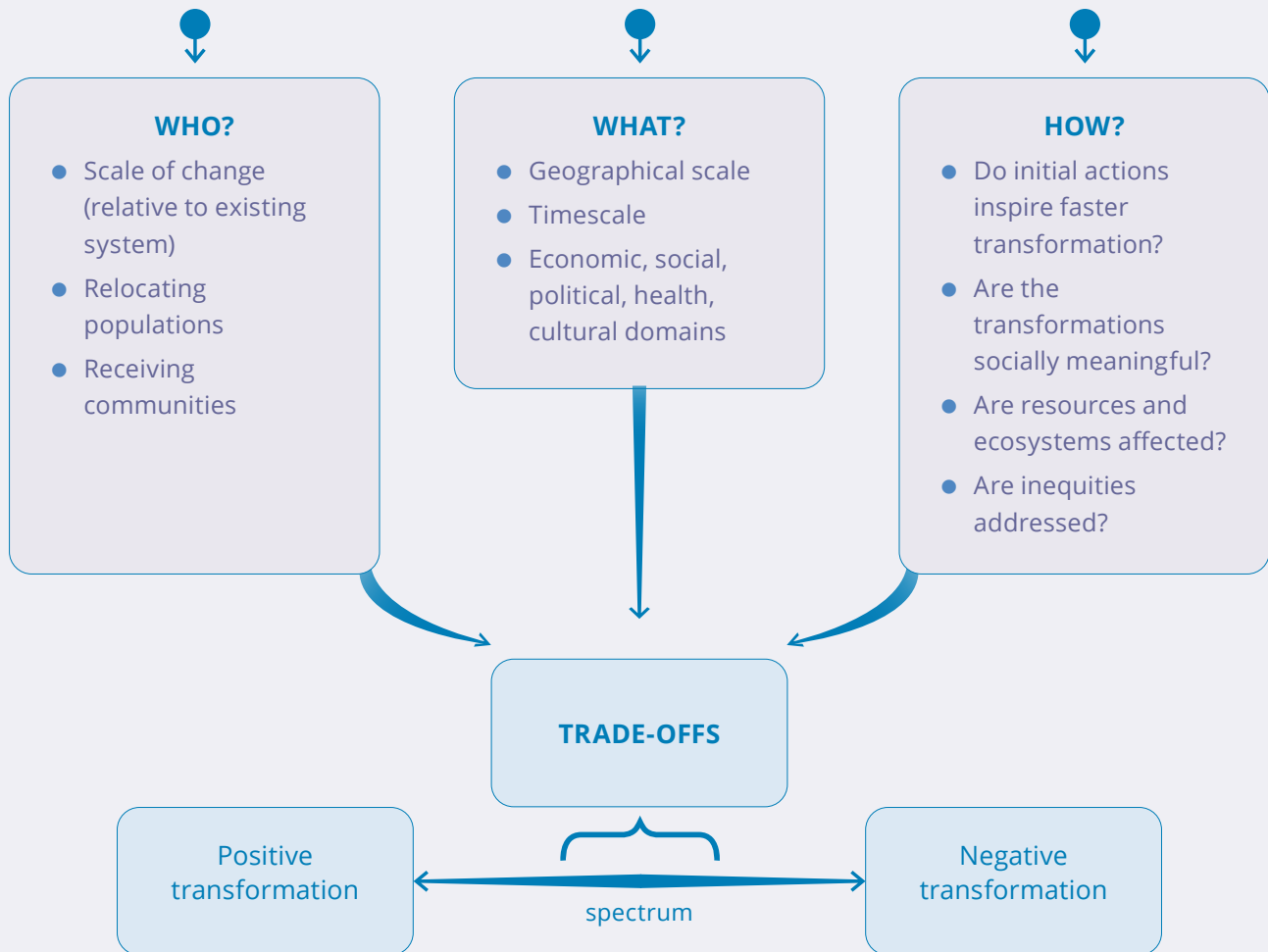
Determinants of transformative managed retreat

Generally, a climate change adaptation can be considered socially transformative if it produces or entails fundamental and enduring changes to the structures, functions, values and norms of a community. Transformation may be positive (benefiting and empowering people as well as protecting ecosystems) or negative, or both, depending on how the processes and outcomes affect communities, economies and ecosystems. Research shows that the potential for managed retreat to contribute to positive transformations towards sustainability depends on the relative scale and speed of the retreat, how it is managed, who relocates, and who or what benefits and is disadvantaged, over both short and longer terms.

An assessment of whether a retreat has been positive or negative must consider a wide range of factors (see figure).

Retreat can occur at various geographic scales, from a single home to an entire district. It is not the absolute number of people who relocate but the relative size of the relocation with respect to the system under consideration that determines whether a relocation can transform a community. Similarly, the speed at which a relocation happens plays a role. A given number of people moving gradually over a long period of time might not produce any transformation, while the same number moving in a short period could be transformative for the population relocating and

Managed retreat as a process of transformation



the places they are leaving and moving to. It is also possible that the gradual movement of people over long periods of time could be transformative for certain places and communities, although the conditions under which this is possible are not clear. It is equally possible that large-scale relocations simply shift risk and inequalities to other places.

Managed retreat can affect economic, social, political, health and cultural domains of society to varying degrees, often with trade-offs between domains. For example, improved physical health and safety might be accompanied by a loss of cultural identity or livelihoods. The effects of a relocation on various domains of life depend on factors such as the inclusivity of decision-making processes, the power and social capital of affected communities, the availability of resources and the goals of the relocation.

Ultimately, the potential for a relocation to be transformative depends on the distribution

of benefits and costs of the relocation. To be socially transformative, managed retreat should be a means of disrupting and redressing socially unjust systems and structures. This would require stakeholders in the process to explicitly address a wide range of justice issues, including distributive and procedural justice as well as recognition and restorative justice.⁴ Managed retreat should also be situated within larger, holistic efforts to address inequities in economic development, land use patterns and community wellbeing.

The potential benefits of managed retreat are more likely to be achieved when relocation is pursued by individuals, communities, planners and governments as a means to achieve broader transformation rather than simply as an end in itself. More research and analysis based on case studies of managed retreat could support future policy- and decision-making, while identifying positive trade-offs between different domains can also inform practice.

Key messages

- Managed retreat or relocation in response to climate change has significant potential to contribute to transformative change at a large scale.
- The concept of managed retreat has the potential to transform perceptions, narratives and norms surrounding climate change adaptation by making the impact of climate change more concrete and highlighting the trade-offs involved in adaptation.
- Assessing whether relocation has been or can be transformative requires consideration of who and what has been or will be impacted, at what scale and in what ways.
- Transformative managed retreat should be a means of disrupting and redressing systemic injustices rather than reinforcing or replicating them.

Endnotes

1. Kulp, S.A. and Strauss, B.H. (2019). 'New elevation data triple estimates of global vulnerability to sea-level rise and coastal flooding.' *Nature Communications* 10(1): 4844.
2. Siders, A.R., Ajibade, I. and Casagrande, D. (2021). 'Transformative potential of managed retreat as climate adaptation.' *Current Opinion in Environmental Sustainability* 50: 272–280.
3. Yarina, L., Mazereeuw, M. and Ovalles, L. (2019). 'A retreat critique: deliberations on design and ethics in the flood zone.' *Journal of Landscape Architecture* 14: 8–23.
4. The political challenge of achieving transformations to 1.5°C – the role of social justice. Transformations to Sustainability Knowledge Brief 2, March 2019. https://transformationstosustainability.org/assets/uploads/2022/01/T2S_knowledge_brief2_final.pdf



Relocation committee: residents supporting their neighbours in the relocation process © Proyecto ENLACE del Caño Martín Peña

This Knowledge Brief is one of a series based on recent peer-reviewed research on social transformations to sustainability. For more information and citation details, the article on which it is based is available at <https://doi.org/10.1016/j.cosust.2021.06.007>. The Knowledge Brief has been prepared by the International Science Council (ISC) Transformations to Sustainability (T2S) programme secretariat in collaboration with A.R. Siders, Idowu Ajibade and David Casagrande. The views it expresses do not necessarily represent those of the International Science Council, nor of the programme's funders, the Swedish International Development Cooperation Agency (Sida). For any questions regarding this document, please contact A.R. Siders (siders@udel.edu).

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