

# The end-point of adaptation: What are the implications of 'climigration' for spatial planning?

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# Research aim

- To link 'climigration' to spatial planning and examine how articulation of the concept may be brought into the discipline

# What is 'climigration'?

- “A specific type of permanent population displacement that occurs when community relocation is required to protect residents from climate-induced biophysical changes that alter ecosystems, damage or destroy public infrastructure and repeatedly endanger human lives” (Bronen & Chapin, 2013)

# Dimensions of climigration

- A unique form of forced migration
- Community relocation
- People and infrastructure
- Structured and planned
- Assisted by government agencies



Grantham, Qld. Relocated following the 2011 floods. Australia's first community relocation.

# Climigration as end-point of adaptation

- Climate change adaptation (CCA): adjustment to actual or expected climate change and its effects
- ***Incremental adaptation***: aim is to maintain the essence and integrity of a system
- ***Transformational adaptation***: changes the fundamental attributes of a system
- Climigration is transformational adaptation taken to its limit (the end-point of adaptation)

# Spatial planning/adaptation nexus

- CCA is a new imperative for planning (Gleeson 2007, Matthews 2013, Wilson & Piper 2010)
- Responses can occur through policy, design, plan-making, zoning, development control, etc
- Intensifying climate change impacts will make some communities more vulnerable and others unviable
- Climigration will become a form of planning-led adaptation

# Methods: systematic literature review

- Focus on permanent community relocation events documented in literature
- Case studies from Australia, USA, Africa, South Pacific, Iran and Sweden
- Papers had to connect to spatial planning as agent of relocation
- Planning factors for success separated into *critical*, *moderate*, *negligible*

# Critical factors

## ***Community consensus; Community consultation***

- Relocation unlikely to succeed in the absence of these factors
- Perception of threats matter
- Longer term threats = less consensus



Newtok, Alaska. Relocation prompted by recurrent storms, increasing temperatures, permafrost melt and wave damage. Consensus to relocate secured through 3 separate ballots of residents.



# Moderate factors

***Government support; economic resources; local leadership***

- Government support cross-cuts all by committing resources and supporting leadership
- Local leadership important to build community support and bridge gaps between residents and outside agencies



Ruins of Allenville, Arizona. Relocated after repeated, severe flooding. State government worked with federal agencies to identify relocation sites, support and inform residents, and provide temporary housing

# Negligible factors

## *Pre-existing policy frameworks*

- Did not exist in the studied cases
- Relocation went ahead anyway due to necessity
- Decisions were made ‘on the fly’



Part of the Grantham Reconstruction Masterplan. Policy frameworks for relocating the residential sections of the community were drafted after the 2011 floods in a process overseen by the Queensland Reconstruction Authority, a bespoke planning agency charged with leading the State Government’s program of infrastructure reconstruction within disaster affected communities.

# Lessons for future climigration planning

- Climigration events will likely increase
- Climigration will be the end-point of adaptation in human settlements
- Lessons from prior experiences help improve future outcomes
- Anticipatory policy frameworks should be created and be on standby
- Addressing perception of threats will be critical

# Key roles for spatial planning in climigration

- Act as liaison across levels of government in order to secure funding and access to appropriate land for relocation
- Facilitate community consultation and harness local leadership
- Master-plan new settlements
- Guide delivery of critical infrastructure in relocated communities

# Questions, comments, discussion...

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