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Policy and Planning Mechanisms for Coastal Relocation: Barriers and Opportunities

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Hampton Roads Sea Level Rise/Flooding Adaptation Forum

2015

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Bukvic, PhD

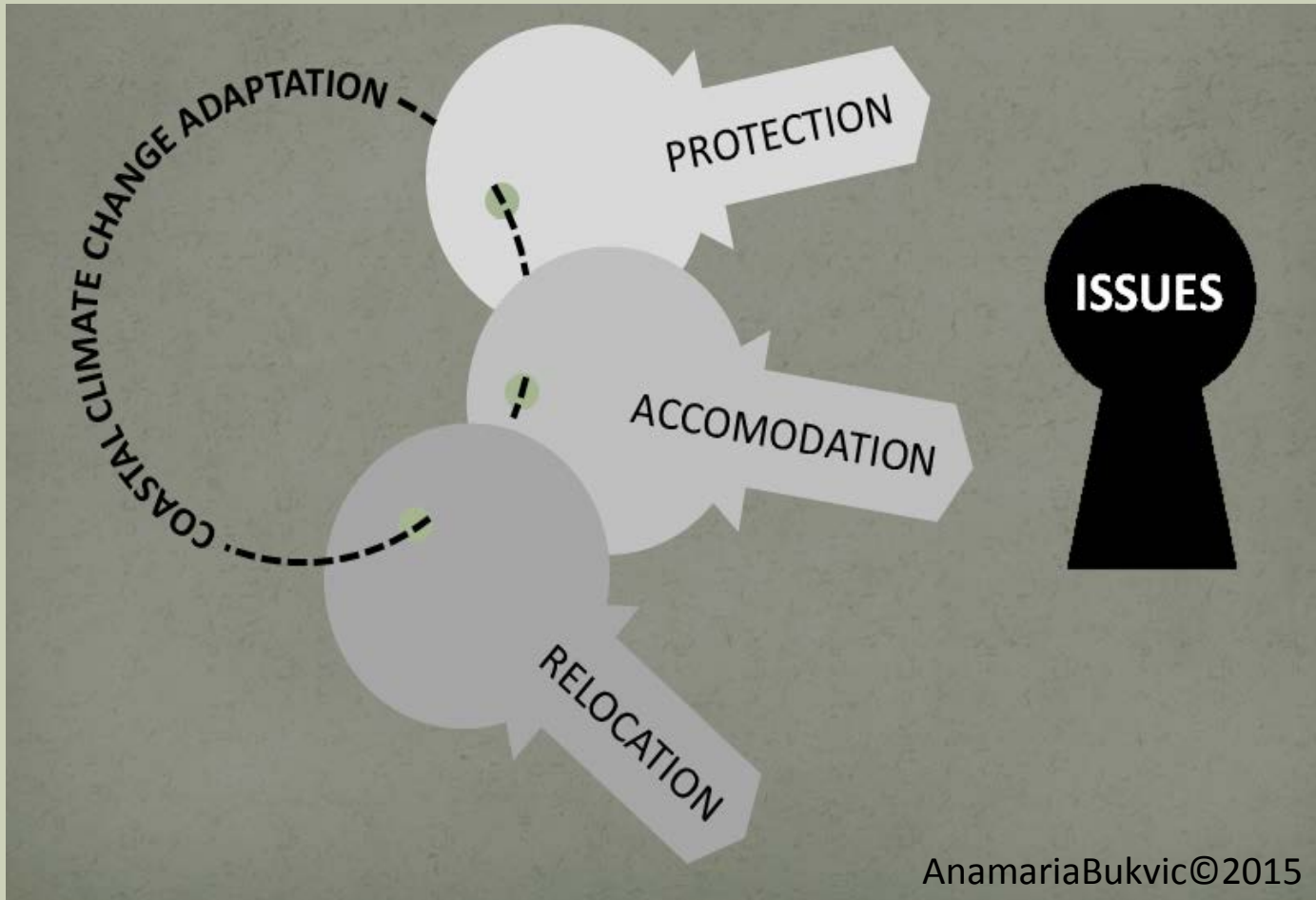
Policy and Planning Mechanisms for Coastal Relocation: Barriers and Opportunities



“If we stick to former paradigms we are bound to be defeated in every battle. The point is not to prepare plans and tools to avoid surprise, but to be prepared to be surprised.”

- Lagadec, 2008

COASTAL ADAPTATION



3RD U.S. NATIONAL CLIMATE ASSESSMENT

- “As sea level rises faster and coastal storms, erosion, and inundation cause more frequent or widespread threats, **relocation** (also called (un)managed retreat or realignment), while not a new strategy in dynamic coastal environments, may become a more pressing option.
- Up to 50% of the areas with high social vulnerability face the prospect of **unplanned displacement** under the 1 to 4 foot range of projected sea level rise for several key reasons:
 - they cannot afford expensive protection measures themselves,
 - public expense is not financially justified (often because social, cultural, and ecological factors are not considered), or
 - there is little social and political support for a more orderly retreat process.”

RELOCATION IS...

- Different from migration, displacement, resettlement

“A **permanent** and irreversible **voluntary** movement of the **whole or part of the community**, from the original to a new location due to sudden or gradual climate change impacts that differ from the usual variability, guided by the **integrated** and **anticipatory planning support**.”

IN THE REGION | CONNECTICUT

To Repair the Shore, or Retreat?



Christopher Caputo

IRENE WAS HERE Tropical Storm Irene damaged many shoreline houses on Cosey Beach Avenue August. Some owners have rebuilt; others lack the wherewithal.

By LISA PREVOST

Published: May 3, 2012

State lawmakers have begun to grapple with that question as they consider how to plan for the effects of climate change and rising sea levels on coastal development. But they have temporarily put aside the more delicate question of whether homeowners in Connecticut's most vulnerable shoreline areas ought to rebuild at all, after a bill before the Environment Committee prompted a great deal of concern.

That legislation, proposed by the Connecticut chapter of the Nature Conservancy, called for **“a fair and orderly legal process to foster strategic retreat of property ownership, over a period of several decades,”** in coastal areas subject to erosion or repetitive structural damage.

The words **“retreat”** and **“orderly legal process”** sparked suspicions that the bill was laying the groundwork for the seizure of private homes by eminent domain.

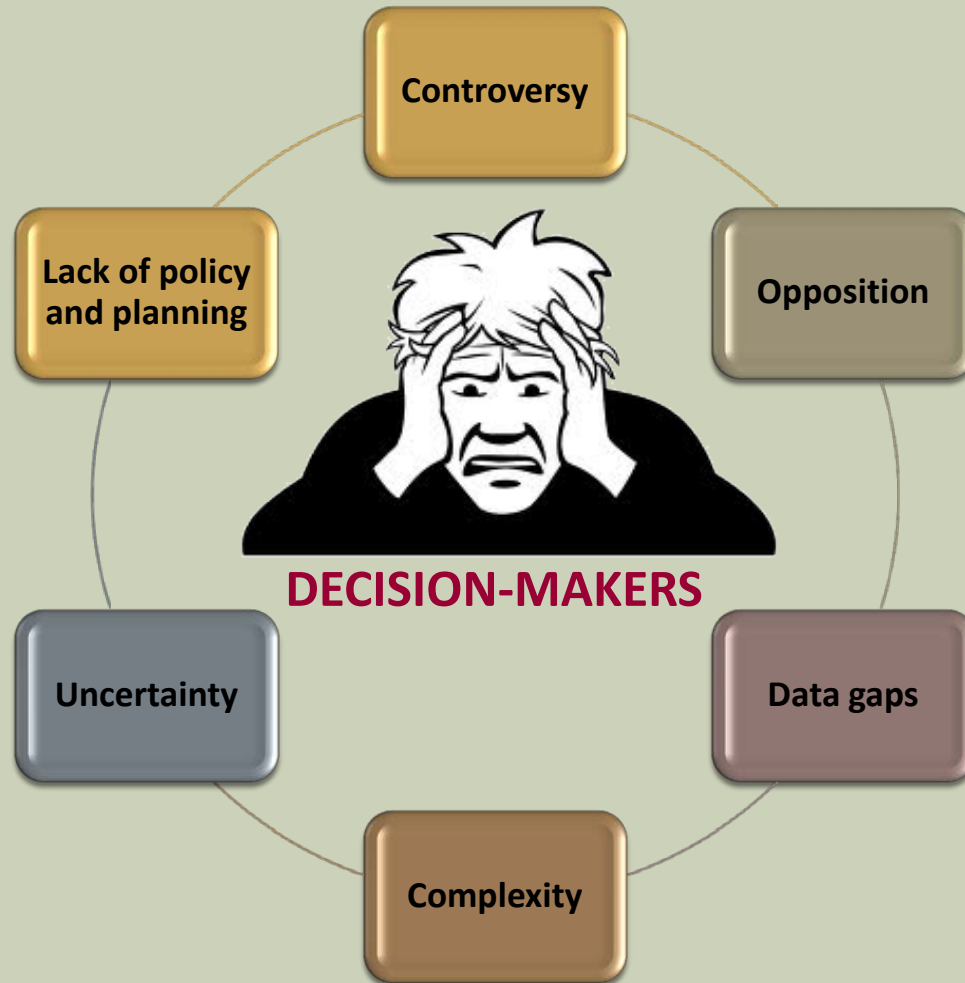
WHY SHOULD WE PLAN FOR RELOCATION?

- Avoid psycho-social and economic costs of emergency displacement and evacuation
- Reverse decades of unsustainable coastal development
- Allocate resources to long-term effective solutions
- Include public participation in all steps of process
- Ensure policy, planning, and financial support
- Identify opportunities emerging from this process
- Improve outcomes, fostering resilience

“When it is urgent, it is already too late.”

- Talleyrand

HOW TO PROCEED?



POST HURRICANE SANDY • MARCH 2013



POST HURRICANE SANDY • MARCH 2013



SOME ARE BRAVING IT OUT...



MANY PROBLEMS REMAIN....



POST KATRINA, POST SANDY

Should we stay or should we go now?

If we go there will be trouble

An' if we stay there will be double

So come on and let us know

Should we stay or should we go?



FACING REALITY • DEALING WITH STRESSORS

Repetitive and permanent impacts...



OUTCOMES: Psycho-social and economic damages
Indirect/secondary impacts
Recovery progress...

Should we stay or should we go?

MEDIATORS:
Stress and trauma
Personal circumstances
Attitudes and perceptions



AVOIDING MISTAKES FROM THE PAST

- Overconfidence in technology and engineering solutions
- Choosing only short-term solutions
- Avoiding wicked problems until they escalate
- Lack of accountability and inertia

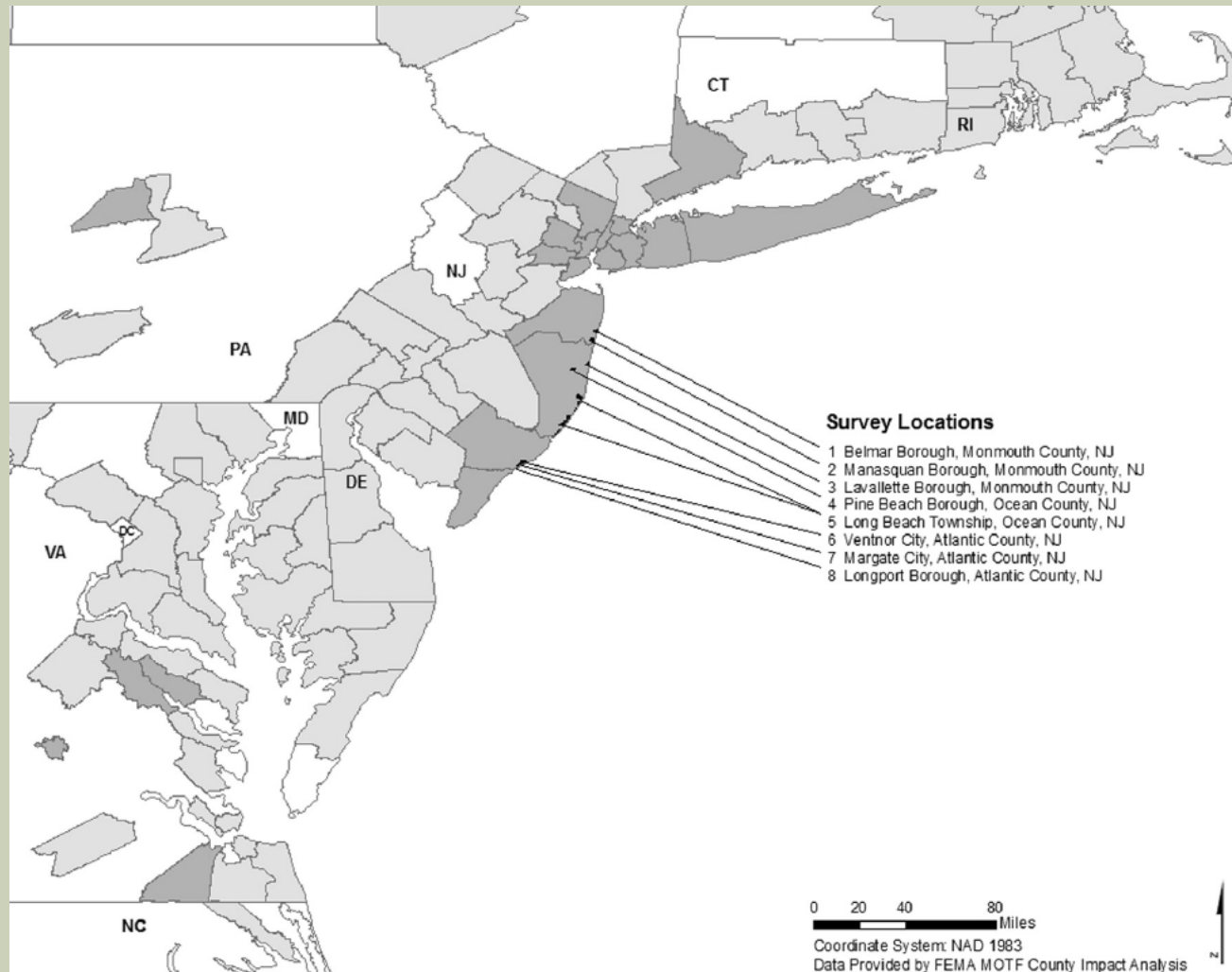


RELOCATION – REALISTIC OR NOT?

- Perceptions differ – based experience and exposure
- Praise for local government, organizations, and community
- Frustration with FEMA
- Self-organization and block-level coordination
- “I cannot believe that this will happen again”
- Many concerns: tax increases, FEMA maps, insurance, repetitive damage, contradictory requirements...



POST HURRICANE SANDY SURVEY 2



POST HURRICANE SANDY SURVEY 2

Response preferences for the stress measure

Causes of stress in the aftermath of Hurricane Sandy

- 1 Rebuilding and recovery
- 2 Recurrent hazards
- 3 Filing insurance claims
- 4 Loss of personal belongings
- 5 Mold and corrosion
- 6 Future in this community
- 7 Looting and crime
- 8 Moving somewhere else

Response preferences for the recovery concerns

Concerns driving consideration of relocation

- 1 Insurance rate increase
- 2 Tax increase
- 3 Tidal inundation and frequent flooding
- 4 Crime increase
- 5 New FEMA advisory maps
- 6 City rebuilding requirements
- 7 Uncertainty when flooding will occur
- 8 Neighbors, friends, family move out
- 9 Strangers in the neighborhood
- 10 Construction crews and activities

POST HURRICANE SANDY SURVEY 2

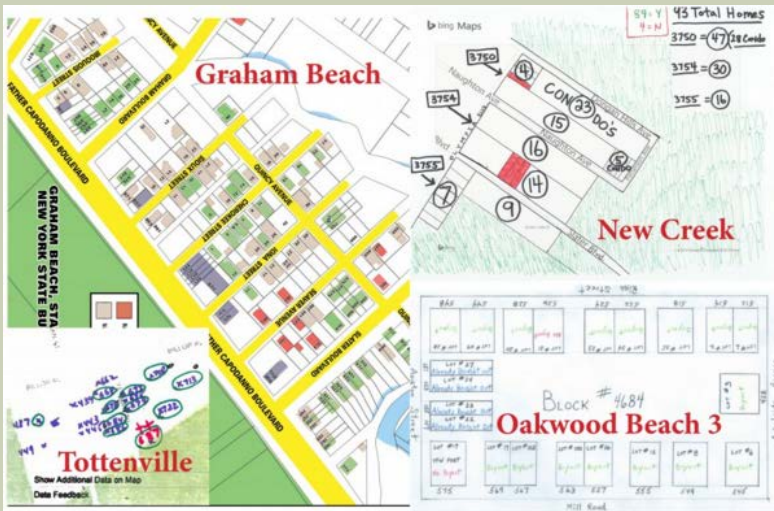
Response preferences for the relocation drivers measure

Would consider relocation in the future if:

- 1 Crime becomes worse
- 2 We have two or more floods in the next few years
- 3 Insurance cannot cover full reconstruction
- 4 Services and amenities do not restore their full function
- 5 We have one more flood in the next few years
- 6 School system deteriorates
- 7 I am offered financial compensation(buyout)
- 8 Businesses do not reopen
- 9 I am offered with comparable housing in similar community elsewhere
- 10 Neighbors, friends, and family move out
- 11 I am provided with free legal service
- 12 I receive assistance with finding a new job elsewhere
- 13 I can move together with my neighbors

OTHER EXAMPLES: NY BUYOUT

- NY Gov. A. Cuomo's Buyout and Acquisition Program (\$171m):
 - Full pre-storm fair market value in 500-year floodplain damaged >50%
- Incentives:
 - 5% staying locally (within County)
 - 10% for very high risk/enhanced areas
 - 10% for collective/neighborhood level relocation
- Purchased 1,200 properties: 500 open space, rest resold

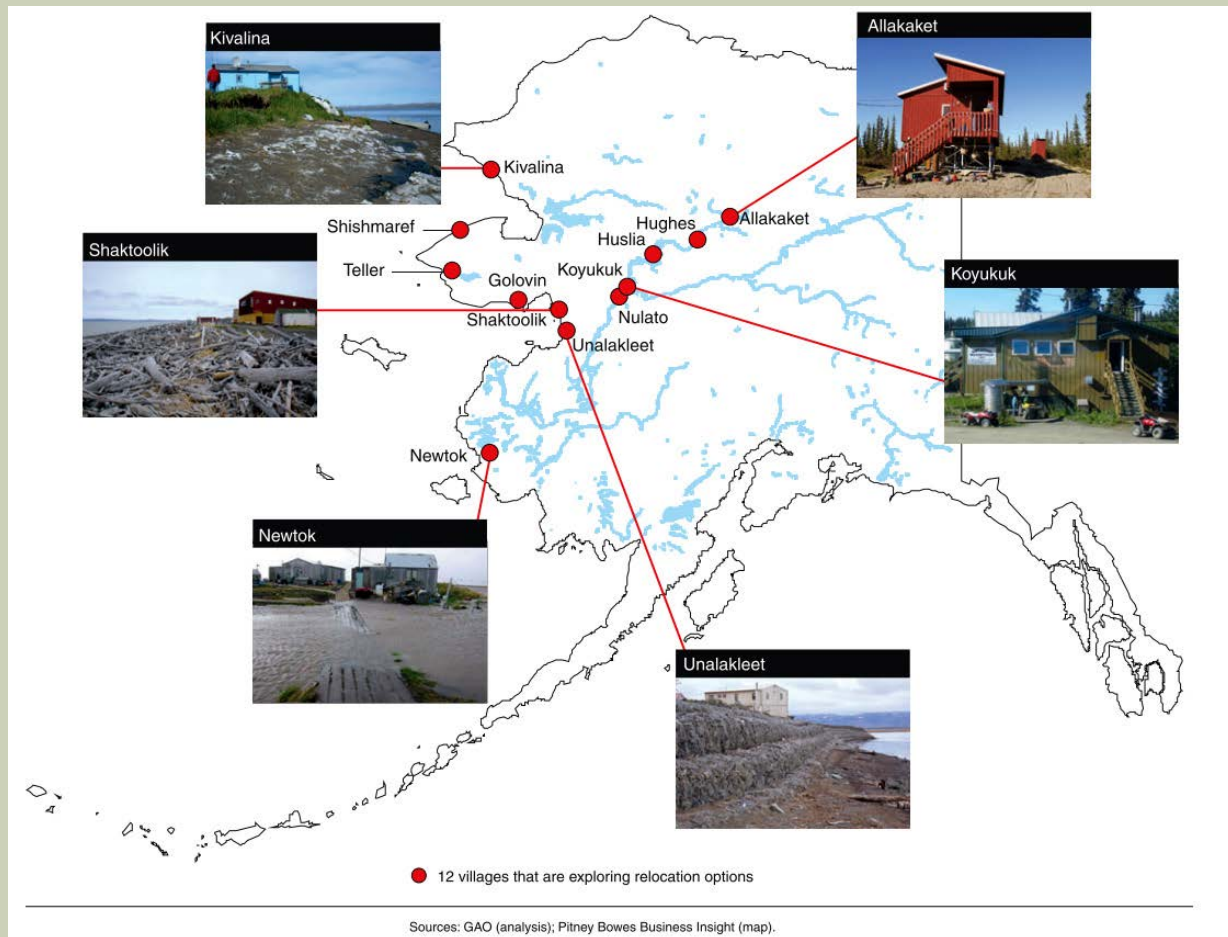


“The one thing you absolutely have to avoid is the jigsaw or jack-o’-lantern effect, where you have lot, home, lot, home, home, lot, home,” said James Rubin, the director of New York Rising.

- The New York Times

FOX BEACH 165
OAKWOOD BEACH
<http://foxbeach165.com/>

OTHER EXAMPLES: ALASKA



Bronen, R. (2015) Climate-induced community relocations: using integrated social-ecological assessments to foster adaptation and resilience. *Ecology and Society* 20(3):36

OTHER EXAMPLES: LOCKYER VALLEY

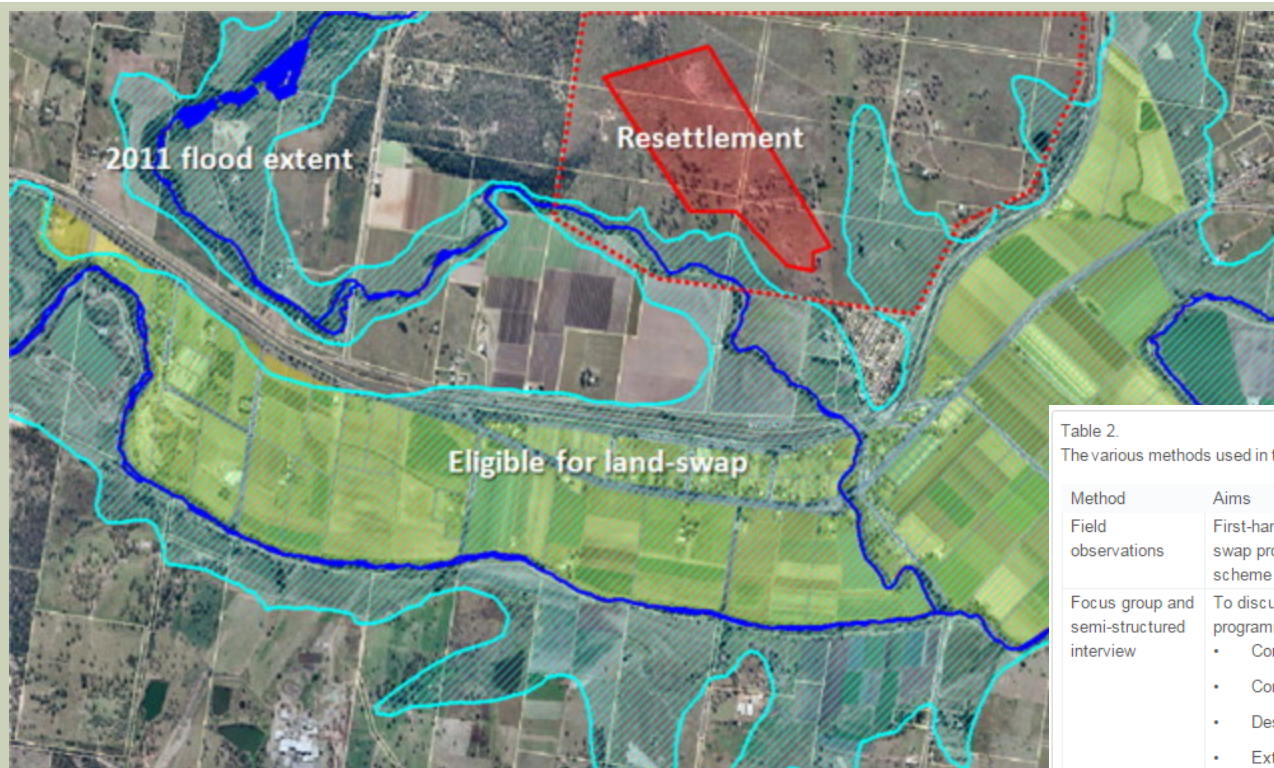


Table 2.
The various methods used in the analysis.

Method	Aims	Timing/source
Field observations	First-hand observations of the land swap programme and introduction to the scheme	Undertaken on 17 and 24 April 2012
Focus group and semi-structured interview	To discuss the LVRC land swap programme in terms of: <ul style="list-style-type: none"> • Concept of the initiative • Community involvement • Design of the resettlement • External collaborations • Compliance with land use and emergency management policies 	Undertaken on 24 April and 30 October 2012
Document analysis	Further details of the steps taken in the post-disaster resettlement project in chronological order	2GB 873AM [1]; Lockyer Valley Regional Council [25], [28] and [29]; Simmonds & Davies [46]

Okada, T., Haynes, K., Bird, D., van den Honert, R., King, D. (2014). Recovery and resettlement following the 2011 flash flooding in the Lockyer Valley. *International Journal of Disaster Risk Reduction*, 8, 20–31.

WHAT HAVE WE LEARNED?

- Narrow the gap between actual and perceived risks
- Develop flexible mechanisms to address different challenges
- Work with host communities and neighborhoods
- Explore synergies between sending and receiving areas¹
- Minimize livelihood disruption (work-live locations optimized)¹
- People are resettled to together if preferred¹
- Resources for relocation available during and after if needed¹
- Explore potential benefits and opportunities
- Account for contextual circumstances



¹World Bank (2010) To relocate or not to relocate. In: Safer Homes, Stronger Communities: A Handbook for Reconstructing after Natural Disasters

CONCLUSIONS

- Spontaneous relocation is already happening under the radar and should be acknowledged
- The major shifts in attitudes and actions, as well as the ability to “think the unthinkable” needed
- Policy and planning barriers to recovery and relocation should be identified and addressed
- More research needed on *when, why, how, where* of relocation.
- Affected households and businesses should be engaged in relocation planning from the very beginning
- Creative tools and approaches would support participatory learning about the risks and +/- of staying vs. relocating

Science & Environment

Bikini islanders seek US refuge as sea levels threaten homes

By Matt McGrath
Environment correspondent, BBC News

7 hours ago | Science & Environment



Flooding in the Marshall Islands in 2014 caused extensive damage and left hundreds homeless

About 1,000 Bikini islanders have applied to relocate to the United States as rising seas threaten their adopted home.