

Climate Change Adaptation

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Climate Change, Adaptation, and Litigation

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Climate Adaptation is Challenging

- Climate is ***changing rapidly*** due to atmospheric accumulation of greenhouse gases: we're always "fighting the last war"
- Especially challenging: the time between extreme climate events is ***decreasing***
 - >>>Once-per-century coastal flood level expected to recur *once per year* by ~2050 at many US locations – insufficient time to recover?
- Some aspects of climate change projection (e.g., sea level rise late 21st C) likely to **remain uncertain for decades**: implies wait before acting?
- **No**, because lead times for large scale initiatives involving planning, finance, and implementation are multidecadal: can't wait too long if at all, need to act under uncertainty

Some Successes...

- US and global mortality rates in tropical cyclones decreasing: improved forecasts and early warning systems
- US heat-related mortality decreasing: Household as opposed to collective adaptation dominant – equity implications?
- Will gains continue as climate change accelerates?

Good news - Climate adaptation pays for itself:

For every dollar spent ex ante, \$2-10 saved on avoided disaster cleanup

Nevertheless...

- Despite recent efforts, US remains poorly organized to meet the challenge: Adaptation is currently a minor add-on to a system built for disaster response: *ex post* instead of *ex ante* philosophy
- Several programs are implicitly biased, yielding inequitable outcomes: e.g., BRIC applications process for disadvantaged communities
- Why? What are the obstacles to fixing it?

Psychological obstacles to risk management

>>> Shock of disaster seems to be the best trigger for adaptation but extreme climate events are (were) infrequent, translating into episodic opportunities for action

>>> Memories of even extreme events are short, and we are myopic in judging such risks, so political energy shrivels quickly after such events

>>> However, completion times for adaptation projects are long so a lot is left incomplete or haphazardly done

Political obstacles: perverse incentives

- Lots of federal funding *ex post* for disaster aid (Stafford Act) – the major adaptation opportunity. Sporadic, unpredictable funding provides poor support for long term plans
- Little or no money or incentive for adaptation *ex ante* (this is gradually changing)
- NFIP - Federal flood insurance not structured as an incentive program; no federal role for wildfire, wind damage insurance, states taking on the responsibility
- The usual issue of the election cycle versus the long timescale for political payoff; Multiple stakeholders with divergent interests
- **Bottom line: Insufficient incentive to act in advance for policymakers or households**

Structural Governance Obstacles

- Multiple, overlapping jurisdictions in federal systems
- Jurisdiction that must plan and implement often not jurisdiction with financial control
- FEMA (DHS), USACE (DoD) – big institutions, hard to change

Some elements of solving political, structural problems

- New US federal/state/local relationship over adaptation funding: **Need for dedicated funding sources over long timescales**
- New insurance formats and pricing (risk-based rates plus vouchers or expanded adaptation credits/rebates to make it equitable) to encourage risk reduction and lower overall costs
- Post-disaster clean-up arrangements with variable cost-sharing determined by local ex-ante level-of-effort
- If building hard protection, **build flexibly**
- Legitimize, facilitate retreat – **because we cannot afford to defend everything**
- Adaptation “czar”? New resilience-building agency?