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Climate Adaptation Requires More Than Disaster Relief

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The physical and economic risks associated with climate change have now become concrete and recurring conditions for many communities across the United States, especially in coastal regions. A growing share of the US housing stock lies in areas repeatedly battered by floods, hurricanes, wildfires, extreme storms, and erosion. According to the National Oceanic and Atmospheric Administration (NOAA), the United States experienced 403 weather and climate disasters costing at least $1 billion each between 1980 and 2024, with total losses exceeding $2.915 trillion. In 2024 alone, 27 separate weather and climate disasters took place, each causing more than $1 billion in damages. These trends raise important questions about adaptation strategy—particularly, the role of the state in climate adaptation.

Models of Climate Adaptation

Communities confronting escalating climate threats typically pursue one of three adaptation strategies: *adapt in place*, *voluntary property buyouts*, or *coordinated community relocation.*

The *adapt-in-place* strategy seeks to reduce risk where people already live through measures such as floodproofing and elevating homes, installing seawalls and floodgates, and retrofitting buildings for wind resistance. In moderate-risk areas, these interventions can reduce damage without requiring residents to leave behind their neighborhoods, local economies, or social networks. In repeatedly flooded river basins, coastlines, and low-lying floodplains, however, such protective measures often provide short-term relief, delaying rather than preventing future destruction.

Voluntary buyouts operate through a "willing seller" model. Governments purchase at-risk properties from homeowners who choose to sell; structures are demolished, and the land is converted to permanent open space. In principle, buyouts permanently remove exposure and reduce future public spending on repeated disaster recovery.

Coordinated community relocation involves moving entire neighborhoods or towns through participatory planning, infrastructure investment, and deliberate efforts to preserve cultural and social continuity. This model seeks to maintain community cohesion while relocating residents to safer areas. In the United States, this option has been rarely pursued as it requires sustained funding and coordination, as well as political and social consensus over community rights and identity.

Among these adaptation models, the one that has been most prominent in American retreat policy is the voluntary buyout model, primarily taking shape through federally funded property acquisitions. According to FEMA's Hazard Mitigation Assistance dataset, between 1989 and 2025, more than 32,000 properties were purchased from willing sellers. The majority (roughly 86 percent) of these buyouts were funded through the

Hazard Mitigation Grant Program (HMGP). Participation has been concentrated in Texas (4,453 acquisitions), followed by North Carolina (3,077), Iowa (2,011), Pennsylvania (1,619), and New York (1,514), reflecting severe flood exposure along the Mississippi basin, hurricane-prone Atlantic coasts, and inland river valleys.

The dominance of HMGP is noteworthy. It indicates that US retreat policy remains largely reactive rather than proactive, given that HMGP funds are typically released only after a federally declared disaster. The temporal pattern reinforces this point: we see that acquisitions spike in the late 1990s, early 2000s, around 2008, and again around 2011—periods corresponding to major flood and hurricane events.

The types of properties acquired further illuminate program design. Voluntary buyouts, as implemented through FEMA, overwhelmingly centers on single-family homes (more than 70 percent of acquisitions). Within this framework, renters occupy a structurally precarious position, as the program's benefits are organized around ownership. In addition, because participants tend to be higher-income and white, the program risks reinforcing existing socioeconomic and racial disparities, even if unintentionally.

The Limits of U.S. Climate Adaptation Policy in an Era of Rising Risk

Taken together, these patterns suggest that climate adaptation in the United States is narrowly conceived, reactive in character, and modest in scale. Several factors—notably constitutional protections of private property rights, a disaster-triggered funding architecture, and patterns of suburban development—have shaped an approach that relies on voluntary buyouts after damage has already occurred. Instead of treating climate adaptation as a central function of the government- of the "protective state," the current system handles it as an after-the-fact response.

Adaptation strategies that rely on post-disaster funding and voluntary exit, however—while they may have been workable when climate hazards were episodic shocks—are poorly suited to an era in which such hazards are compounding and recurring with increasing regularity. The limited role for the state assumed by the current model is no longer viable, particularly given the profound transformation underway in insurance markets.

According to a recent report issued by the Treasury Department's Federal Insurance Office (FIO), in the face of climate-induced disasters, insurers have raised premiums and tightened underwriting standards. The FIO data, which cover 2018–2022, show significant variation between areas considered high risk and low risk—households in the 20 percent of ZIP Codes with the highest climate risk, such as hurricane-exposed Beaufort and Myrtle Beach in South Carolina, and wildfire-prone Nevada City and Meadow Vista in California, paid "82 percent more than those in the 20 percent lowest climate-risk ZIP Codes." They also faced non-renewal rates about 80% higher. In some high risk areas, insurers have retreated almost entirely: South Carolina's coastal communities show the most extreme collapse, with exceptionally high nonrenewal rates; California's Sierra Nevada foothills exhibit a sharp, wildfire-driven retreat; and Louisiana shows a post-hurricane surge in non-renewals, where successive storms have driven widespread insurer insolvencies. While Florida appears somewhat more stable in the data in terms of renewal rates, this is the result of private market retreat being masked by the absorption of policies into the state-backed insurer of last resort.

What Comes Next for Climate Adaptation Policy?

The institutional architecture of adaptation must shift from property-based, reactive compensation toward a proactive, community-focused planning. This includes using long-term risk assessments, ensuring dedicated funding, and expanding social protection through the state.

Social protection, as currently understood within the welfare state, consists of insurance mechanisms designed to cushion individuals and households against disruptions to labor market participation such as unemployment, old age, and disability. Climate adaptation requires a rethinking of this concept. The risks it produces are different in kind, not just in scale, from the labor-market and lifecycle risks the welfare state was built to manage, yet they demand the same institutional seriousness and fiscal commitment. This means treating the economic losses of climate displacement like unemployment: not as individual misfortune, but as a structural risk and collective obligation.

To help households manage climate-driven relocation, policymakers can implement measures that ensure fair and sustained support during the transition. One policy is government-funded relocation assistance with a stable revenue source, so that people can move on fair terms, rather than relying on ad hoc disaster aid. Another is climate displacement insurance that covers broader economic losses, like lost income, to support households through relocation. Critically, both instruments must be designed independent of property ownership, extending protections to renters as well as owners.

Read more in Kus, B. and Jackson, G. (2025), Green Transitions: Rethinking Political Economy in the Context of Clim 302. https://doi.org/10.1111/rego.70013.