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Climate Change Adaptation in the U.S. Coastal Zone: Data, Policy, and Moving Away from Moral Hazard

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Abstract : State and federal government agencies within the United States have recently invested substantial resources into studies of future flood risk conditions associated with climate change and sea-level rise. A review of numerous case studies has uncovered several key themes that speak to an overall incoherence within current flood risk assessment procedures in the U.S. context. First, there are substantial local differences in the quality of available information about basic infrastructure, particularly with regard to local stormwater features and essential facilities that are fundamental components of effective flood hazard planning and mitigation. Second, there can be substantial mismatch between regulatory Flood Insurance Rate Maps (FIRMs) as produced by the National Flood Insurance Program (NFIP) and other 'current condition' flood assessment approaches. This is of particular concern in areas where FIRMs already seem to underestimate extant flood risk, which can only be expected to become a greater concern if future FIRMs do not appropriately account for changing climate conditions. Moreover, while there are incentives within the NFIP's Community Rating System (CRS) to develop enhanced assessments that include future flood risk projections from climate change, the incentive structures seem to have counterintuitive implications that would tend to promote moral hazard. In particular, a technical finding of higher future risk seems to make it easier for a community to qualify for flood insurance savings, with much of these prospective savings applied to individual properties that have the most physical risk of flooding. However, there is at least some case study evidence to indicate that recognition of these issues is prompting broader discussion about the need to move beyond FIRMs as a standalone local flood planning standard. The paper concludes with approaches for developing climate adaptation and flood resilience strategies in the U.S. that move away from the social welfare model being applied through NFIP and toward more of an informed risk approach that transfers much of the investment responsibility over to individual private property owners.

Keywords : climate change adaptation, flood risk, moral hazard, sea-level rise
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