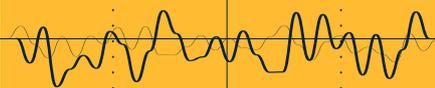


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Challenges for Structuring Resilient Infrastructure PPPs



Central to incorporating resilience in PPP is the mainstreaming of DRM in project planning, contract design, and procurement. To ensure that disaster responses are effectively delivered, governments must mainstream DRM in project planning and procurement, particularly through setting technical standards for bids and contracts and by establishing terms for bidding, award, and remuneration that reward resilience measures.

These issues are largely contractual but also include decisions about available government support and organizational arrangements to facilitate recovery and allow for needed adjustments following a disaster or climate event. These efforts are subject to several common challenges. To ensure that disaster responses are effectively delivered, governments must mainstream DRM in project planning and procurement, particularly through setting technical standards for bids and contracts and by establishing terms for bidding, award, and remuneration that reward resilience measures. These issues are largely contractual but also include decisions about available government support and organizational arrangements to facilitate recovery and allow for needed adjustments following a disaster or climate event. These efforts are subject to several common challenges.

Lack of coordination between DRM and PPP policy and practice: Government efforts to promote DRM are often undertaken separately from efforts to apply and improve PPP for infrastructure, though these projects may involve many of the same agencies and units. A key challenge for government is to coordinate DRM and PPP efforts and reconcile the policy frameworks for DRM and PPP. This organizational function is important to enforce established DRM policy and, where needed, to fine-tune such policies to preserve commercial viability of PPPs along with technical robustness and resilience.

Inadequate identification, assessment, and allocation of disaster risks: An operator's capacity to assume disaster risks depends on the availability of insurance, the company's financial and technical capacity, and the ability to reasonably estimate relevant disaster risks. PPP contracts often include provisions for unforeseen risks, including natural disasters, typically defined under force majeure clauses. While neither the public nor private sector is responsible for force majeure events, the associated risks must be contractually allocated. Force majeure events are often generally defined, however, and responses are often subject to high degrees of negotiation after a disaster event occurs.

Decisions about disaster risk allocation and definitions of force majeure can be more readily made in countries with national DRM frameworks and accumulated historical disaster data (for example, Japan). In such contexts, PPP contracts can draw on probabilistic risk estimations to establish customized definitions of force majeure, specify thresholds for event severity, and more effectively transfer risks via insurance. These countries can establish more specific contractual frameworks based on geographic risk profiles associated with prevalent hazards. In countries where data are limited, governments can at least identify the most relevant disaster risks, establish principles to guide risk allocation, and set general terms for government intervention or relief in the event of force majeure. Because uncertainties associated with climate change are high, undermining the reliability of probabilistic models, PPPs may benefit from planned adjustment periods wherein parties can negotiate adjustments to deal with changing environmental and other natural hazard conditions that substantially affect the base assumptions of a PPP contract.

Limited experience dealing with disaster and climate uncertainty over the long term: PPP contracts are typically long term, often extending over 20 to 30 years. During such extended periods, natural disasters are likely to occur, and long-life assets are likely to face increasing climate risks. In addition to setting appropriate design specifications to minimize structural vulnerability, thorough disaster risk assessments and discussions regarding force majeure and relief options are required during project development to establish workable terms for response and relief. Because these assessments cannot plan for every contingency, however, designed contract flexibility, low-regret adaptive strategies, and iterative decision-making processes will become increasingly important. Scheduled or triggered adjustments to PPP contracts may be set to deal with shifts that substantially change the contract's base material assumptions. The challenge, however, is that experiences with these highly reflexive systems is limited—necessitating a degree of experimentation and innovation.

Significant cost implications for PPP commercial viability: Investments in DRM and the costs associated with unexpected emergency response and recovery affect project financial outcomes, including VfM. While disaster risks should be carefully considered in early infrastructure development stages, it is not often within the private sector's commercial interest to invest in measures against long-term and uncertain risks, particularly given the uncertainties of returns on investments. Government can impose requirements to assess infrastructure risks, directly provide adjacent resistance-building infrastructure, and assume disaster risks to preserve the viability (profitability) of PPPs.