



SHELTERING

From a Gathering Storm

The Costs and Benefits of Climate Resilient Shelter

Typhoon Resilience in Vietnam, Flood Resilience in India, Temperature Resilience in Pakistan

Shelter design is one of the greatest factors influencing the loss of lives and assets during extreme climate events and is therefore a significant cost for governments, the private sector, and nongovernmental organizations working on disaster risk reduction or post-disaster reconstruction (UN-HABITAT, 2011). Cost-effective changes in shelter design can reduce disaster losses substantially.

KEY POINTS

Resilient housing designs can cost-effectively reduce losses by vulnerable communities due to floods, storms, and high peak daily temperature events.

Access to affordable resilient housing designs and the funding required to implement them is especially important to the poor and near-poor who have access to land and housing.

Simple, low-cost design features have been identified through Resilient Housing Design Competitions.

Qualitative and quantitative analyses of investments in climate resilient designs show high benefit-cost ratios under a range of scenarios.

Access to affordable financing coupled with awareness and training of builders are the primary barriers vulnerable populations face in accessing climate resilient designs.

While shelter designs can reduce the impact of extreme storms and floods, the ability to address increases in temperature through shelter design changes alone is limited.

- Temperature increases are significant. Projections for case locations suggest an overall increase of approximately 2°C–3°C in temperature maxima and minima by 2050, with minima increasing more rapidly than maxima.
- The impact of temperature increases is compounded in areas or periods of the year when humidity is high. Model results for case areas indicate that a 1.5°C–3°C increase in temperature will translate into a 5°C–7°C increase in the heat index (a measure of the decreased efficiency of perspiration to cool the body). The heat index is likely to exceed human body temperature (37°C) for over half the year by the middle of this century in some locations.
- Passive measures for temperature control within shelters cannot reduce temperatures when ambient minima increase for extended periods. Increases in ambient temperatures may have major impacts on vulnerable groups, particularly women. Active cooling measures will be essential in addressing the impacts of temperature increases on human health, productivity, and well-being.

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