

Building a Climate-Resilient Housing Value Chain for Affordable Housing

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Cities in emerging markets face a dual challenge: rapidly growing demand for affordable housing alongside increasing exposure to climate and disaster risks. Rapid urbanization, housing shortages, and constrained infrastructure investment are pushing many low-income households into informal, precarious, or cost-burdened housing, often in locations with heightened exposure to floods, extreme heat, landslides, water stress, and seismic hazards. These households are especially vulnerable because lower-quality housing, inadequate infrastructure and services, and limited capacity to absorb shocks can amplify the impacts of hazard exposure, resulting in asset losses, health impacts, displacement, and rising long-term costs.^{1,2}

These vulnerabilities are not simply a function of where housing is located; they are embedded in the systems that shape urban growth. Land allocation, infrastructure investment, housing finance and construction practices, and regulatory frameworks influence where affordable housing is built, how resilient it is, and whether risk is reduced or reproduced over time. Integrating resilience into these systems is therefore critical to avoiding development patterns that lock vulnerable households, housing providers, and cities into recurring losses and escalating costs.

Fragmented or piecemeal responses are unlikely to reduce systemic risk effectively. Climate resilience must instead be treated as a cross-cutting objective across the housing system, shaping decisions from development through long-term asset management. Without such integration, rapid urban growth and intensifying climate risks will deepen affordability pressures, increase housing and infrastructure losses, and disproportionately burden low-income households.

A Value-Chain Approach

Affordable housing is an adversely selected asset class, increasingly located in areas exposed to flood risk, extreme heat, landslides, water stress, and other climate hazards. These risks accumulate across land systems, infrastructure networks, construction ecosystems, financial markets, and regulatory environments. Climate resilience in housing therefore must be addressed systemically.

Yet interventions for climate resilience remain fragmented. Policy, planning, finance, and construction actors often operate in silos, limiting the impact of interventions. Hazard maps may exist but are not integrated into land allocation or planning decisions. Environmental safeguards may be mandated but weakly enforced. Climate-resilient construction practices may not be embedded into building codes and therefore cannot be financed. Conversely, compliance processes can become costly, raising housing prices without proportionate resilience gains.

¹ <https://unhabitat.org/world-cities-report-2026>

² <https://www.ipcc.ch/report/ar6/wg2/chapter/chapter-6>

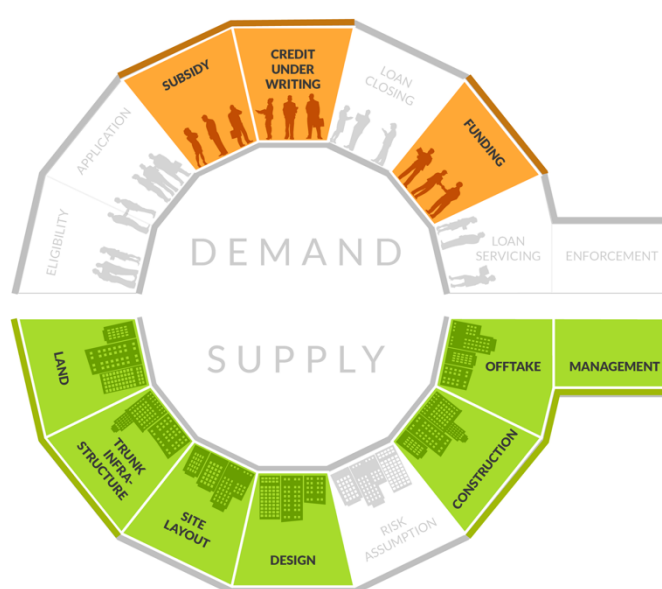


Housing is essential infrastructure and sits at the intersection of multiple systems. When affordability is pursued without accounting for climate risk, structural vulnerability is embedded within the housing market.

AHI's Climate-Resilient Housing Value Chain (HVC) provides a systemic perspective, examining housing across both supply and demand:

- **Supply side:** land selection, trunk infrastructure, planning and zoning, environmental approvals, design standards, construction methods, building codes, material supply chains, construction finance, and long-term operations and maintenance.
- **Demand side:** housing finance systems, subsidies, concessional and green capital, underwriting standards, hazard-risk insurance, and sovereign or state-backed guarantees.

AHI has applied related housing-system and resilience approaches across diverse contexts, including [Trinidad and Tobago](#), [Vanuatu](#), and [Colombia](#), adapting the analysis to local climate risks, housing markets, and institutional environments. The Climate-Resilient HVC overlays risk assessment across each stage, identifying targeted interventions that reduce exposure without undermining affordability, supported by cost-benefit analysis. It aligns regulatory systems, financial incentives, and delivery practices across site, municipal, city, and national scales.



Climate-resilient Housing Value Chain. Source: AHI, 2026

Existing green building tools, risk maps, and ESG assessments typically focus on one segment of the value chain—construction, planning, governance, or finance. The Climate-Resilient Housing Value Chain evaluates the full ecosystem simultaneously, linking land, infrastructure, construction, finance, subsidies, and insurance within one framework. By examining how risks, costs, and incentives interact across institutions, it enables coordinated, scalable resilience in affordable housing.

Why We Need a Climate-Resilient Housing Value Chain

Climate risk cascades across the housing value chain. If affordable housing is sited in flood-prone or heat-exposed areas, for example, no green certification at the building level can fully mitigate the underlying vulnerability. The framework considers both acute hazards—such as floods, storms, and seismic events—and slow-onset climate risks such as extreme heat and drought, as well as institutional risks arising from misaligned regulatory frameworks, delayed approvals, and underdeveloped insurance markets.



A climate-resilient housing value chain addresses these risks across both the supply and demand sides of the housing system. The objective is not to increase complexity, but to apply a cost-benefit lens to identify targeted interventions that reduce risk while protecting affordability.

On the **supply side**, early decisions can yield significant downstream benefits. Integrating hazard mapping into land selection can reduce future infrastructure damage, asset loss, and displacement. At the planning stage, zoning, site layout, drainage, density, ventilation, and infrastructure capacity influence exposure to flooding, heat stress, and other hazards. Aligning environmental assessments and planning requirements with the scale of risk can help avoid both under-regulation and unnecessary delays that increase development costs.

Design and construction decisions further shape the durability and long-term performance of housing. Resilient materials, improved structural standards, passive cooling, and water management may increase upfront costs, but can reduce maintenance requirements, extend asset life, and protect long-term value. Global evidence indicates that resilient infrastructure investments can generate benefit-cost ratios averaging 4:1. Energy and water efficiency can also lower household utility costs over the lifecycle of the home.

On the **demand side**, financial instruments can enable these investments and help distribute risk. Green mortgages, concessional construction finance, subsidies, and technical assistance programs can support developers and households in adopting resilient standards. Mortgage underwriting that accounts for energy and water savings can better reflect household expenses and repayment capacity. Hazard-risk insurance, sovereign guarantees, and state-backed indemnity frameworks can reduce risk for lenders and support private capital participation. Over time, more durable, climate-resilient housing can protect household asset value, strengthen household balance sheets, and reduce credit risk within housing finance systems.

[Housing functions as critical infrastructure](#), connecting households to employment, education, transport, health, and other essential urban systems. As AHI often notes, “*homes are where jobs go to sleep at night.*” When housing assets are damaged or degraded, the consequences extend beyond the individual home to household economic stability and the wider functioning of cities.

This matters increasingly as climate exposure grows alongside accelerating urban housing demand. Without a systemic approach, resilience measures risk becoming isolated cost add-ons rather than investments that reduce lifecycle costs, protect asset value, and strengthen long-term affordability. The more relevant question, therefore, is not simply whether housing should be climate-resilient, but **where in the housing value chain resilience interventions can generate the greatest return.**

Where the Framework Operates and Call to Action

The Climate-Resilient Housing Value Chain is designed for decision-makers across the housing system—developers, municipal authorities, national governments, lenders, and development finance institutions. The framework provides a practical tool to identify and assess climate risks, evaluate the resilience of the existing housing ecosystem, and prioritize interventions based on their potential impact and feasibility of implementation.



The key question for housing-system decision-makers is not “Where can we add green elements?” but “Where does our influence matter most?” By identifying these leverage points in each unique context, the framework helps decision-makers focus resources where they generate measurable returns and scale. Housing underpins economic stability and public infrastructure. A value-chain approach ensures that resilience is not incremental—but systemic and scalable.

