



TRANSFORMING THE BUILT ENVIRONMENT THROUGH SUSTAINABLE MATERIALS

BANGLADESH

Bangladesh is undergoing rapid urban transformation, driven by sustained economic growth and population expansion. With nearly one-third of its population already living in urban areas, the country's built environment is expanding at an unprecedented rate. By 2030, over 50% of Bangladesh's population is projected to live in cities, significantly increasing the demand for housing, infrastructure, and construction materials. This accelerated urbanization presents both an opportunity and a challenge—balancing development needs with the urgent imperative to reduce greenhouse gas emissions.

As buildings constructed today will shape the nation's carbon footprint for decades, it is vital to integrate sustainability throughout their life cycle—from material sourcing and design to operation and demolition. A strategic "Avoid, Shift, Improve" approach can guide this transformation: avoid unnecessary construction, shift to low-carbon and circular materials, and improve building efficiency to reduce both embodied and operational carbon.

To advance this transition, the United Nations Environment Programme (UNEP), in collaboration with UNOPS, UN-Habitat, the Ministry of Housing and Public Works, HBRI, and RAJUK, is promoting the use of sustainable materials and circular economy practices. Through enabling policies and local innovation, the initiative aims to support Bangladesh in building resilient, low-carbon cities aligned with its climate commitments and Vision 2041.

Implemented in collaboration with:



With financial support from:



THE CHALLENGE

Bangladesh's rapid urban growth is driving soaring demand for buildings and materials, increasing reliance on carbon-intensive products like cement, steel, and bricks. Inefficient designs, material waste, and limited access to sustainable alternatives are further raising emissions. Without immediate action, today's construction boom could lock in high carbon impacts for decades—making it harder to meet climate goals and build resilient, livable cities.

THE SOLUTION

Bangladesh's rapidly expanding construction sector offers a powerful opportunity to shift toward low-carbon, circular, and resource-efficient practices. Achieving this transition means rethinking how materials are designed, sourced, used, and reused. It calls for supportive policies and standards, updated building codes, strong research and innovation, and improved access to financing. It also requires promoting the sustainable management and production of bio-based materials.

This project accelerates Bangladesh's move toward a low-carbon built environment by demonstrating practical applications of sustainable materials, strengthening policies and procurement systems, and building national capacity. Through demonstration projects, technical guidelines, training for SMEs and professionals, and close collaboration with key institutions, the initiative helps embed circular and climate-responsive practices into mainstream construction and national planning.

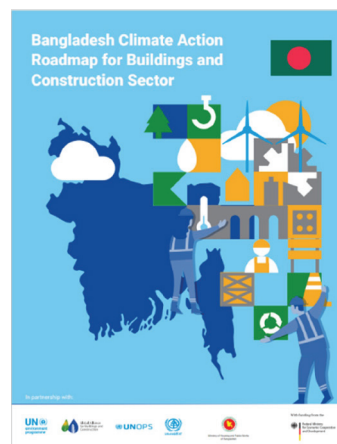
THE PROGRAMME SUPPORTS THREE KEY ACTIVITY AREAS

The project strengthens capacity, policies, and markets to enable Bangladesh to adopt sustainable building materials at scale – promoting circularity, climate action and economic opportunities.

- 1. Strengthening policy and regulatory frameworks:** Develop national decarbonization and resilient roadmaps for the buildings sector. Integrate resource efficiency and environmental performance requirements for building and construction materials into procurement policies, building codes, and national climate strategies. Support the development of incentives and planning instruments to accelerate market uptake of sustainable materials.
- 2. Demonstration projects:** Implement pilot projects that showcase the techno-economic viability of low-carbon, resource-efficient materials and circular construction approaches, providing evidence for wider market adoption.
- 3. Build institutional and professionals' capacity:** Provide targeted training for SMEs, construction practitioners, government officials, and university students on low-carbon materials, resource efficiency, eco-innovation, and circular construction practices—strengthening skills across the entire value chain.

KEY ACHIEVEMENTS AND ONGOING ACTIVITIES

- 1. Climate Action Roadmap for Buildings and Construction (launched October 2024):** Developed using the latest GlobalABC methodology, the roadmap outlines a clear pathway with targeted actions, timelines, and ambitious goals to reduce operational and embodied carbon in buildings. More than 30 stakeholders—including government bodies, industry associations, financial institutions, and academia—contributed to its development. The roadmap also emphasizes resilience, wellbeing, and inclusivity across the sector.



- 2. Demonstration Project with RAJUK** In partnership with Dhaka Urban Development Authority (RAJUK), the project is integrating low-carbon materials into a public-space development. This work includes creating a low-carbon materials checklist, Whole Life Carbon Guidelines, and a methodology to help identify and prioritize low-carbon material options for future projects.
- 3. Policy Recommendations and Standards Development** The project is advancing policy actions to:
 - Integrate low-carbon materials into the Government Schedule of Rates and the national building code.
 - Co-develop a national green building rating system with the Housing and Building Research Institute (HBRI) and technical green building guidelines
 - Support the creation of national strategies on material efficiency to reduce resource use and carbon impacts.



4. **Development of LCA Toolkit:** A dedicated Life Cycle Assessment (LCA) tool for block manufacturers is being developed and will be hosted on HBRI's official website. The tool compares key environmental indicators—such as carbon emissions and topsoil consumption—providing accessible, data-driven insights that support evidence-based decision-making and help manufacturers transition toward more sustainable, resource-efficient production.
5. **Capacity Building for Industry Professionals:** Training programs on material efficiency, eco-innovation, and sustainable materials have been delivered to 51 participants from the construction sector, including manufacturers, engineers, architects, and practitioners from both government and non-government organizations.
6. **Engagement of National Academic Institutions:** University lectures delivered with RISE BUET are strengthening knowledge on eco-innovation and circularity in buildings. Additional knowledge-sharing sessions with engineers, architects, and experts at HBRI are helping bridge research, policy, and practice.



BANGLADESH'S NDC 3.0 RECOGNIZES THE BUILDING AND CONSTRUCTION SECTOR AS A CLIMATE PRIORITY:

The project contributed to a major national milestone as Bangladesh's Nationally Determined Contribution (NDC) 3.0 (2025) prioritized the Building and Construction sector—one of the country's largest sources of emissions. The updated NDC establishes clear pathways for emission reduction and resilience through strengthened building codes, solarization of public buildings, adoption of non-fired bricks, and energy-efficiency retrofits. The project played a pivotal role in integrating the sector into NDC 3.0, advancing low-carbon materials, green certification

systems, and cross-sector collaboration. The inclusion of this sector was supported through collaboration between the Department of Environment (DOE) under the Ministry of Environment, Forest and Climate Change (MoEFCC), the Ministry of Housing and Public Works (MOHPW), the United Nations Environment Programme (UNEP), and the United Nations Office for Project Services (UNOPS) and building on the [GlobalABC Climate Action Roadmap for Buildings and Construction](#).



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