

## The role of carbon finance in enhancing building performance in developing countries

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### Abstract

Buildings in developing countries (DCs) will play a significant role in global GHG emission mitigation in the next decades (IPCC, 2007; IEA,2008). According to the UN World Urbanization Prospects report (2005 revision), 60 percent (4.9 billion) of world population will live in cities by 2030, most of them in DCs. The unprecedented urbanization in these countries poses a huge challenge for environment since most of buildings are built quickly and cheaply to accommodate new immigrants and the energy performance is often considered second priority. Implementation of energy efficiency in buildings confronts both technical and institutional barriers. Enabling environmental sustainability buildings with economic benefits and welfare improvement is the major concerns on the policy agenda in DCs. Therefore how to articulate sustainable urban development and emissions reduction policies in DCs will be of considerable importance in the post-Kyoto climate regime negotiation. Considerable investment will be required to allow the uptake of climate-friendly technologies and capacity building, thus financial assistance and technology transfer from developed countries to DCs is likely to play increasingly important role.

This paper aims to address a fundamental question about how to fit the policies and measures in buildings construction into the climate policy via existing or innovative carbon finance framework. We try to demonstrate the drivers, barriers and solutions of sectoral crediting mechanism in addressing the mitigation targets in buildings in DCs, focusing on China and India.

The paper first reviews different sectoral (aggregate) approaches of GHG mitigation financing, including sectoral crediting mechanism, SD- PAMs, NAMAs, CDM, Programmatic CDM or sectoral CDM to provide a diagnosis on the failure/inefficiency of the CDM in promoting sustainable buildings construction in DCs. It then polishes appropriate financing instruments by comparing their efficiency and applicability in urban buildings by order. Finally, the paper draws some key conclusions and establishes a policy framework that allows reorientation of upfront investment in urban infrastructure for changing pathway by catalysing carbon finance and other GHG-friendly financial flows into the sustainable buildings in developing cities. The policy implications for applying carbon finance in built environment in DCs in terms of the long term climate change mitigation agreement and sustainable construction technology transfer as well as multilateral scientific cooperation are also addressed.