

# BRIDGING ADAPTATION ACTION AND RESEARCH

Key Insights from Peer-to-Peer Learning Across  
the Adaptation Research Alliance



## CASE STUDY 5: BRIDGING ACTION AND RESEARCH TO DEVELOP AND APPLY GRADED BUILDING CODES TO MAKE THEM RELEVANT FOR AFFORDABLE HOUSING PROGRAMS

Aprajita Singh and Bijal Brahmbhatt

### INTRODUCTION: OBJECTIVES, ACTIVITIES AND PROCESSES

---

In Indian cities, such as Delhi, Indore, Rajkot & Chennai, peak indoor housing temperatures typically vary between 36.5°C and 42°C during the summer period. While a building code was endorsed in India for energy conservation in 2017, the code was conceived for housing sizes 10 times larger than typically those of poor dwellings.

An initiative undertaken by MHT aims at reducing this temperature to 30°C - 35°C through low-cost design for affordable housing. To this end, MHT advanced evidence-based research on thermal comfort in dense settlements. This allowed MHT to test suitable design modifications and building codes for poor dwellings. Furthermore, MHT conducted live demonstrations to promote adaptation designs. Lastly, the case study informed advocacy actions at national and state levels to influence urban master plans and policy.

MHT followed a socio-technical approach in this initiative. It bridged action and research by placing at the centre of the design process marginalised urban dwellers and facilitating a conversation between them and government, academics and private innovators. The process involves a) working with slum dwellers to design affordable and efficient adaptation designs; b) facilitating a conversation with innovators and service providers to strengthen the supply side; and c) establishing a dialogue with policymakers to inform policy.

### BRIDGING ADAPTATION ACTION AND RESEARCH

---

This piece of research identified, tested and contributed to scaling up housing solutions compliant with the Energy Conservation Building Code for Residential Buildings (ECBC-R) while being beneficial for low-income communities. Through this research, MHT pioneered an advocacy process that made housing standards inclusive of the urban poor. Research findings were presented to the Climate Change Department of Gujarat, Ministry of Housing and Poverty Alleviation, leading to the endorsement of graded codes and design modifications into Gujarat's housing policy. Knowledge materials produced by the project served as resources for other government and non-government organisations.

Furthermore, these outcomes show the effectiveness of MHT approach to bridging action and research, which rests on six principles: a) needs-driven and result-oriented research which in this case implied holding in balance the needs of at-risk groups and the budget capacity of governments; b) an emphasis on social impact by fostering the commitment of government, at-risk groups and private sector to build a number of houses in a defined period of time; c) empowering the urban poor by demystifying climate language; d) a focus on structural causes of vulnerability through women-led research; e) and learning-by-doing as a way to integrate research into practice.

## ENABLING FACTORS & CHALLENGES

---

MHT identified the following enablers and challenges to bridge action and research:

- **Enablers:** climate change language needs to be demystified so as to open a dialogue among different groups, including at-risk groups, government and private sector innovators. Technical language limits the access and discussion of climate change and urban planning to academics and government technical staff. Demystifying this language allows for the inclusion of the urban poor during the design, innovation and testing of urban policies.
- **Challenges:** housing design needs to meet affordability while meeting the vision of at-risk groups. The aspirational horizon of the urban poor is often placed close to the middle class' consumer choices. This may shape negatively the acceptability of 'eco-friendly' building products, which while being supported by Corporate Social Responsibility initiatives and foundations, hence increasing their affordability, are seen as of inferior quality, reducing their desirability.

**Authors:**

Uma Swaminathan and Vishal Pathak, Taylor Martin, Laure Tankpinou and Alice Kone, Anna Colquhoun, Edward Sparkes, Aprajita Singh and Bijal Brahmhatt, Prabhakar S.V.R.K, Ashali Bhandari, Bruce Currie-Alder and Manuela Di Mauro, Mikkel Funder, Carol Mweemba and Imasiku Nyambe.

**Editors:**

Aditya Bahadur and Alejandro Barcena.

**Images:**

All photos credited to Project Urban Living Lab.

**Date:** June 2023

**Design:**

Ink Design Publishing Solutions, Cape Town,  
South Africa, [www.inkdesign.co.za](http://www.inkdesign.co.za)

**Funders:**

ARA funded by:



ARA Secretariat:

**iiied** International Institute  
for Environment  
and Development

SOUTH  
SOUTH  
NORTH