



What lessons does mHS, a hybrid social enterprise, offer for taking preventive action for communities with low risk perception in India?

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Case Teaching Note

Case Narrative

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I. IIHS Case Method

The IIHS case is a work-in-progress that represents experiments in different forms of creating interdisciplinary and inter-sectoral cases, as well as a diversity of pedagogical environments to learn and teach with these cases. The opening set of cases is, thus, also in a sense, an experiment in form and teaching modes. Given this, we do not claim a singular 'IIHS Case Method' or any one form or definition of a case. Indeed, one of the explicit aims of case development at IIHS is to challenge conventional ideas of what case-based learning is. How then does a user know how to use cases? Pedagogical transactions will differ from case to case and indeed multiple options will be open within each case. Therefore, in order to aid users, all IIHS cases come with a set of consistent elements that help users navigate through the diversity of form and content.

These are:

- **Preface:** Every case begins with an introduction by the case writer that describes their own approach to the case. How did the case writer frame the case? Why did they choose to structure it as they have? What were their intentions in writing the case?
- **Teaching Note:** The second shared case element is the Teaching Note. Here, the case writer lays out their imagination of how they would teach with the case in its current form. They suggest learning outcomes, pedagogical modes, learning environments and assessment frames. True to the diversity of the cases, each of these is particular to the case.
- **The Main Case:** This is the main body of the case—its core empirics, arguments, discourse and data. Across the cases, these come in different forms: PowerPoint presentations, audio-visual material, web interfaces, written text, and data visualizations.
- **Pedagogical Possibilities:** The next element lays out the case writer's suggestions on other ways in which the case could be taught, including in other disciplines or learning environments. These are not as detailed as the Teaching Note but offer a set of possibilities to the user to imagine other uses of the case than those laid out.
- **Case Archive:** The final element of the case is a library of documents—reports to interview transcripts, unedited footage to visual photo libraries—that act as an archive for the case. This repository allows users to also access a host of background and additional information necessary to navigate the larger contexts in which the case is situated.

Each IIHS case—regardless of the diversity of its form—comes structured with these elements. It is our hope that this recognizable framework will enable users to navigate easily across cases with very diverse elements and forms.

II. Case Summary

Rapidly urbanizing India faces a crisis for affordable housing. Affordable shelter options for the urban poor are often found in dynamic low-income neighborhoods enveloped in the city. Usually known as slums due to lack of tenure rights & poor access to basic services, these informal settlements house a majority of the city's residents. Some of these neighborhoods have the potential to offer a viable response to the low income-housing crisis- as they have the advantage of proximity to livelihood and economic opportunity, they grow incrementally, respond to bottom-up demands on the community for rentals, home-upgrades, extensions. Home-building activity here is undertaken based on a phenomenon of self-construction supporting the local economy.

However, communities living in informal housing are vulnerable to disaster risk. Housing structures are precarious; they are non-engineered often built by local construction workforce who have limited access to training, financial and technical resources. The government policy response to 'upgrade' and 're-develop' have not adequately taken into account the organic, incremental nature of growth that characterizes such neighborhoods.

micro Home Solutions (mHS) is an interdisciplinary social enterprise, founded in 2009 with the mission to address affordability and resilience of low-income housing in Indian cities. This case describes the mission of the organization to facilitate a portfolio of housing options for the urban poor and pilot solutions to bring greater resilience to informal settlements. The case was chosen to highlight the strategies explored and processes adopted for designing interdisciplinary solutions to mitigate risk for communities where the perception of disaster risk is low.

From an organizational start-up perspective, the case describes the decisions faced by the co-founders Rakhi Mehra, an economics and management graduate, and Marco Ferrario, an architect & urban designer.

For the first five years mHS has had success in fostering social innovation as an action-research organization. Its overall objective has been to adopt interdisciplinary thinking on design, community and finance to incubate a portfolio of housing solutions. This approach has given poor people choices for housing- addressing homelessness, rental options, home-upgrade, slum redevelopment and fostering transit-oriented development and urban planning. In doing so, mHS partnered with a diverse range of stakeholders, raised funds from grants and fees from consulting agencies, to incubate pilot projects.

The case summarizes the early start-up challenges faced by the founders, the funding model, and the nature of collaboration with partners. It also describes the challenges of straddling a dual entity status of a hybrid social enterprise due to the organizational context in India- with both a for profit (MICRO HOME PRIVATE LIMITED) and non- profit entity (mHS CITY LAB).

The case also explores mHS's later work on leveraging technology for technical construction assistance, and whether this could be made more widely accessible to low income homeowners for safety of housing. The team studied the success of adoption of technology

and mobile platforms in healthcare and education for applicability in a digitally unsophisticated sector such as housing. What could be the entry points to test feasibility? Today in 2018 after two years of R&D and prototyping, the team is ambitious on future of digital tools project to address resilience and safety. The team is aware of the implications on the internal resources, funding needs and nature of collaborators to fulfil their social mission- access to safe and affordable housing.

A case study of mHS- 'Brick by Brick- A model for self-built housing in India' by the Universitas Forum can be read in advance. Apart from this teaching note, the case comprises of an audio-visual documentary and a written case, both of which complement each other in content and are recommended to be used together.

V. Teaching Note

Case Title: What lessons does mHS, a hybrid social enterprise, offer for taking preventive action for communities with low risk perception in India?

Case Trigger: Growth of informal settlements in seismic cities without sufficient structural strength for earthquake safety.

A. Teaching Objectives of the case

1. **Defining social innovation and social entrepreneurship:** students are exposed to the diverse actors and agencies that can drive **social innovation**. It introduces students to the discussion and debate on social enterprises, social activism, legal structures, hybrids and social impact organizations.
2. **Designing for inclusive community engagement models:** students are drawn to approaches for fostering innovation, setting up of an entity- frameworks such as lean-start-ups and human centered design. The information in the main case folder provides students further contextual information on operating in India, operations and stakeholders – both current and prospective.
3. **Implementing and scaling up of social ventures:** students explore different approaches and business models to scale, including partnerships, resources and other strategies available to the organization, the challenges and opportunities navigating a start-up for social impact.

B. Suggested Audience

The case is aimed for undergraduate or master's students interested in Social Enterprise, Cities, Resilience, Urban Development, Housing, and/or Leadership in Social Sector. This case could also be used for working professionals engaged with fields of work – public, private or civil society

C. Pedagogic trajectory

The learners would follow the path of a start-up from understanding the motivation and trigger points to creating an organization. This would lead to the facilitator-moderated discussion on defining social innovation and developing a mission statement of a social enterprise. It is recommended to engage the class on a higher-level discussion on the process and actors of social innovation itself. As defined by the Stanford Social Innovation Review "Social innovation is the process of developing and deploying effective solutions to challenging and often systemic social and environmental issues in support of social progress. Social innovation is not the prerogative or privilege of any organizational form or legal structure. Solutions often require the active collaboration of constituents across government, business, and the non-profit world" (Center for Social Innovation, Stanford).

A second learning pasture may start from articulating the problem that mHS was seeking to address, the problem statement and the theory of change/mission of the organization. Here

the teacher/facilitator can play the video on the need for housing. It can lead to a decision on challenges faced by mHS addressing 'resilience' when user's perception of risk is low to invest and improve quality of housing. An in-class exercise is recommended on stakeholder analysis and mapping- [Refer to section on Class Exercises detailed in Pedagogic Possibilities]

The third area of discussion could be on lean methodology, inclusive design that adopt the human centered design methodology.

There could be an in-class exercise or a prior class assignment/reading on this practice of human centered design. The subject of the homeless shelters makes for an ideal case for an exercise, as in every different country, there is an issue with homelessness and inadequacy of housing although the solutions and possible underlying causes may be very different and context-specific [Refer to section on Class Exercises detailed in Pedagogic Possibilities]

The last pasture would be on the question of scaling-up and measuring social impact. The facilitator can opt and choose different frameworks and readings on this topic- the business model canvas helps to zoom out and explore the opportunities/partnerships. It may be debated if scale-up must necessarily for growth. Discussion can be on the path chosen by mHS in Phase II to focus on providing the digital tools service and not continue action-research, including the work on homeless shelters.

If time allows, discussion on how leadership styles, personal and professional motivations influence such decisions-making of a husband-wife start-up and what you would like to know/clarify if you were to collaborate with mHS.

D. Learning Environment

The video provides the context of Indian cities and exposes the learners to the real problems and difficulties faced by the founders. To this end, it is important that at least part of the training is conducted indoors with suitable AV equipment.

Depending on the length of the class, the prompts below can either be used for analysis, personal reflection, or in the context of in-class group work and/or discussions. This is best left to the discretion of the instructor, based on the class composition.

If the training is being conducted in locations where there are informal settlements, or close to case study sites, an exposure visit is highly recommended.

E. Discussion prompts:

1. Start-up Social Innovation

- i. What sort of social innovation can be achieved by an organization like micro Home Solutions (mHS)?
- ii. What may be some trade-offs/challenges in managing an interdisciplinary agency?
- iii. In the chosen approach of being a 'lean-start up', what are the benefits, risks and other alternatives to achieving the impact?

2. Disaster Resilience

- i. What are the sort of challenges that mHS faced at the early stages, and where did these challenges come from? How can such an organization balance these challenges and continue to give the necessary attention and priority to disaster resilience and safety in low income housing?
- ii. What are the social conditions and perceptions of risks faced by the people in question? How does one assess and affect their willingness to participate in risk reduction initiatives such as those by mHS?
- iii. How does the context of preventative action differ from post-disaster actions? (e.g. Delhi/Shimla vs. Bhuj/Kathmandu?)

3. Scale-up and Evolution Strategy

- i. In 2014, mHS had two options- a) continue as an action-research agency with the portfolio of housing solutions B) evolve into revenue-generating social enterprise and prioritize the scaling-up of the digital tools. Did they choose wisely?
- ii. mHS's target with Digital Tools serves a broad range of agencies- Housing Finance Companies, Skill Development Agencies, NGOs in Housing. Which other partnerships, skills and capacities could Rakhi and Marco recruit to make a success of the venture? How should they go about it?

4. Social Impact & Leadership

- i. What is the expected social impact of mHS? What indicator(s) should mHS define to measure its impact and outreach?
- ii. How could be the efficient long-term monitoring and evaluation methods employed by mHS to ensure positive outcomes on the beneficiaries?
- iii. What differences and similarities have you seen in leadership styles and management approaches for a social impact enterprise?

F. Suggested Readings

1. Battilana, J; Lee, M; Walker, J & Dorsey, C. (2012). In search of the hybrid ideal. Stanford social innovation review, 10(3), 50-55.
2. Brest, P. (2010). The power of theories of change. Stanford social innovation review, vol 9, issue p.21.
3. [Brown, T & Wyatt, J.](#) (2010). Design Thinking for Social Innovation, Stanford Social Innovation Review, vol. 8, issue 1; p. 31.
4. Bradach, J L. (2003). Going to Scale: The Challenge of Replicating Social Programs", Stanford Social Innovation Review, spring, pp.19-25.
5. Mehra,R; Ferrario, M; Naik, M; Janu, S; Yengkhom, V. (2015). Brick by Brick: A model for self-built housing in India. International Journal on Human Development and International Co-operation 4(2), Universitas Forum. Accessed at <http://www.universitasforum.org/index.php/ojs/article/view/161>

6. Osterwalder, A., & Pigneur, Y. (2010). Business model generation: a handbook for visionaries, game changers, and challengers. John Wiley & Sons.
7. Ries, E. (2011). Lean-Start Up. Crown Publishing Group, USA.
8. Field Guide to Human Centered Design (HCD) – WWW.IDEO.ORG

G. Case Archive

1. Inclusive Design: Right to safe and affordable housing in India | Marco Ferrario | TEDxChennai
https://www.youtube.com/watch?v=e-yAj8_Lsl0 [Marco Ferrario TEDX]
2. Making Smart Cities Socially Inclusive | Rakhi Mehra | TEDxBocconiU
<https://www.youtube.com/watch?v=whrtpqyh6bk&t=17s>
3. Self-Construction: Enabling safe and affordable housing in India :
https://issuu.com/rakhi3/docs/mhs_l_self_construction_report
4. Designing the Future of Housing for India's Poorest
<http://www.fastcompany.com/1719421/designing-future-housing-indias-poorest>
5. Lessons in Affordability
<http://www.livemint.com/Politics/vQ7V08iV6zWDHmp7OnjNUI/Lessons-in-affordability.html>
6. Hands off our Houses
http://www.nytimes.com/2011/06/01/opinion/01srivastava.html?_r=0

VI. Pedagogic Possibilities

Some suggestions for class exercises depending on the background of learners and the teaching objectives of the class:

I. Stakeholder Analysis and Mapping

Size of Teams- 2-4 people

Time: 10 minutes + 10 minutes. Total Time 20 minutes

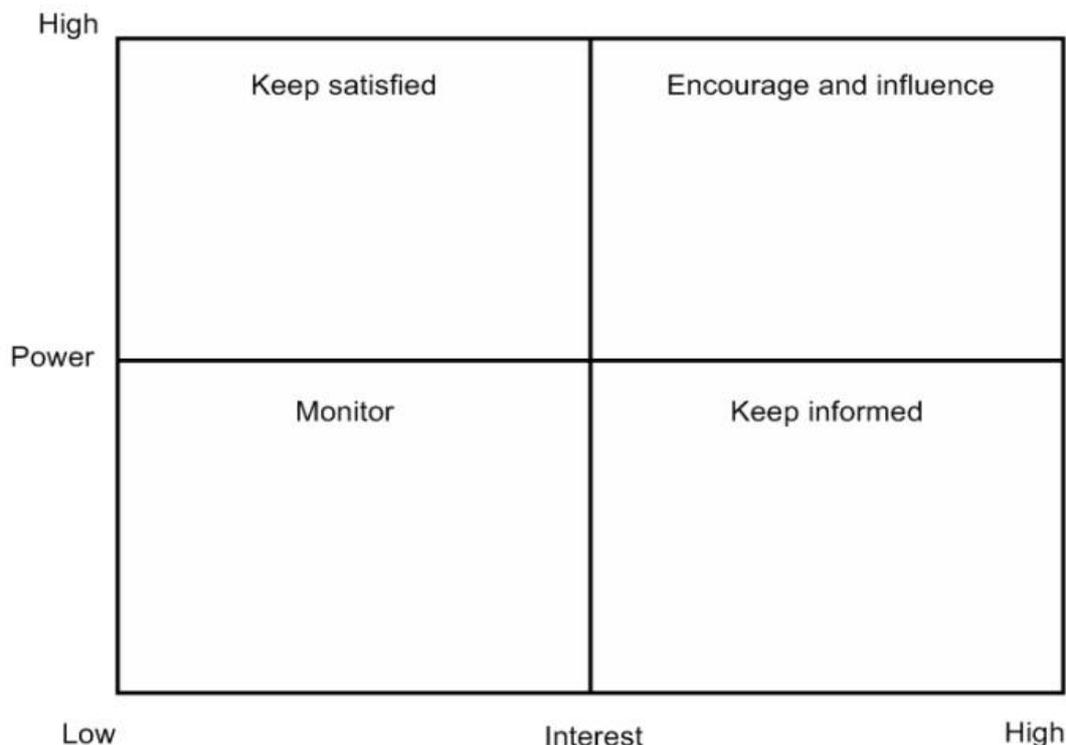
For templates refer to instruction on the following website:

<https://knowhownonprofit.org/organisation/strategy/directionsetting/stakeholder>

Envisaged as a two-part exercise: the first part is to undertake an quick yet exhaustive list of stakeholders that the teams believe are related to addressing resilience and furthering the work on safety in housing in informal settlements. The stakeholders identified can be will come from a range of actors government, research agencies, private sector players, universities etc. The teams should be encouraged to be as specific as possible, listing the titles/departments/expertise that is identified in the stakeholder.

The second part of the exercise is a mapping of the stakeholders in a 2x2 interest/influence matrix. For instance, the head of the urban development authority would have high level of influence, however arguably a low level of interest.

Stakeholder power / interest matrix



Reference for template and exercise:

<https://knowhownonprofit.org/organisation/strategy/directionsetting/stakeholder>

II. Design Thinking

The mHS case presents an opportunity to introduce an interactive session on design thinking if students have not been previously exposed to it. There is a possibility to structure it into a two-part class. This could follow the module of a full day workshop or partnership with local social impact organization.

In this class students spend two hours on field adopting the Human Centered Design line of empathetic enquiry and second half of the day to brainstorm, analyze and present their recommendations in class on chosen impact design issue. This could be the issue of homelessness or disaster risk/social inclusion that students select prior to field work.

A key resource for educators interested to create a design thinking workshop session is available here: <https://designthinkingforeducators.com/toolkit/>

III. Business Model Canvas

This in-class group exercise can follow from mHS's digital tool strategy and the various alternative target groups and revenue-generating models that can emerge from the service offering. For this exercise, each group can pick a different target-customer for instance,

- a. Direct to user (Business to Consumer – B2C)
 - b. Direct to Skill training NGOs (Business to Business – B2B)
 - c. Direct to Government (Business to Government – B2G)
 - d. Direct to Cement Companies (Business to Business – B2B)
- Etc.

The students are expected to complete the corresponding canvas during the exercise

Size of teams: 2-3 persons

Time: 25 minutes team work + 5 minutes presentation of the canvas

The Business Model Canvas

Designed for: _____ Designed by: _____ Date: _____ Version: _____

Key Partners 	Key Activities 	Value Propositions 	Customer Relationships 	Customer Segments 
	Key Resources 		Channels 	
Cost Structure 		Revenue Streams 		

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For templates refer to instruction on the following website:
<https://canvanizer.com/new/business-model-canvas>

Case Narrative

This section contains

- I. Case Introduction
- II. Abbreviations
- III. Case write-up
- IV. References

I. Case Introduction

The case documents the efforts made and challenges faced by the interdisciplinary team at mHS CITY LAB¹, led by its two co-founders, who have been working towards building resilience in Indian cities over the last decade. Their work has focused on improving the quality of self-built housing in vulnerable, low income communities in urban centres, which are often at high risk but where the perception of risk was found to be very low. mHS City Lab's efforts have been geared towards preventive action and planning for risks such as natural disasters and climate change induced stresses, through a hybrid social enterprise model.

This case narrates mHS's City Lab's journey over the past decade, from its early efforts to facilitate self-construction to later focusing on technology-leveraged solutions. The case aims to understand the diverse actors and agencies that drive social innovation, look at inclusive community engagement models and explore different approaches to scaling social ventures.

¹ The organization was set up as mHS Pvt. Ltd. In 2009 and its name was changed to mHS CITY LAB in 2014 with its registration as a Trust making it a hybrid setup

Abbreviations

CSR	Corporate Social Responsibility
DHS	Design Home Solutions
LIHF	Low Income Housing Finance
MoHUPA	Ministry of Housing and Urban Poverty Alleviation
MFI	Microfinance Institutes

III. Case Write-up

India presently faces a housing deficit of an estimated 18 million houses. With the magnitude of the problem, self-built informal housing at urban centres provide housing to millions across the country. This self-built housing is often at high risk, although the perception of risk remains very low.

In India, 38 cities with over half a million inhabitants fall in Seismic Zones II to V, with Zone V being the highest (UNDP, 2002). Low-income urban settlements are most vulnerable to natural hazards such as earthquakes or climate change induced stresses such as flooding and heat waves. Their socio-economic status further deteriorates their resilience, without any safety nets to fall back on. In 2017, the government launched an ambitious national scheme to provide 'Housing for all' by 2022 (MoHUPA, 2017). Building disaster risk resilience of more vulnerable communities requires the facilitation of safe and good quality construction of their homes pre-disaster. For better quality of life, one of the requirements is to build homes that have a good quality of spaces, light and ventilation.

In this context, mHS was set up in 2009 by the two co-founders, Rakhi Mehra and Marco Ferrario, with the aim of building resilience in Indian cities by improving the quality of self-built housing in vulnerable, low income communities. mHS's efforts have been geared towards preventive action and planning for risks such as natural disasters and climate change induced stresses, through a hybrid social enterprise model. Given the enormous scale of the housing challenge and based on their initial research², mHS belief is that it would be much more resource-efficient to facilitate the existing processes of self-construction, rather than a standalone policy focus on building millions of new houses, often far away from city centres.

While the improvements in land titling and financial inclusion have enabled low-income households to invest in more permanent structures, the mHS team found that the construction quality in terms of structural safety was still hazardous in the absence of technical knowledge. Facilitating self-construction has therefore been one of the core aims of mHS.

Initial phases of mHS: facilitating self-construction

Through the first phase of their work in India over 2009-12³, the co-founder couple Rakhi and Marco found that addressing the challenge of the acute shortage of affordable housing in Indian cities required them to provide a portfolio of housing options through an interdisciplinary design approach.

² Supported by a travel grant by the Ford Foundation in 2009, the team visited 8 cities to understand the housing sector in India.

³ It is recommended to read this case as a continuation of the Harvard Business School case written by William R. Kerr and Alexis Brownell in 2012 on the social enterprise micro Home Solutions. While the HBS case covered the start-up phase of the enterprise 2009-12, and the dilemmas faced by the Founders Rakhi Mehra and Marco Ferrario, this report covers the evolution of MHS over the second phase from 2013-18. The video provided as part of the case study offers a comprehensive look at their overall journey from 2009 to 2018 when this case study was prepared. Another case that can be read is a case study of mHS- 'Brick by Brick: A model for self-built housing in India' produced by the Universitas Programme of the KIP International School.

The mHS's key approach from the initial stages of setup and research has been to provide construction-related technical assistance in the form of flexible design layouts, easily understandable structural drawings, site monitoring and guidance, and best practices on ensuring seismic safety. The focus has been to facilitate the already existing process of self-construction, by empowering local construction workforce of masons as well as homeowners, to support the resilience of communities.

At the conception stage in 2009, mHS was conceived as a social enterprise – a revenue generating social impact organisation. However, India lacks the regulatory or legal framework to launch social enterprises that are aimed at social impact and can operate as a business⁴. Thus, micro Home Solutions was registered as a for-profit 'Private Limited' company. This offered flexibility in the initial years to work with international funders for experimentation and short-term action-research projects. At this time, it was also not advisable for the founders to register it as a non-profit organisation because they did not have the Foreign Contribution Regulation Act (FCRA) compliances, which require a minimum of three years for approval in India⁵.

In their pilot project, Design Home Solutions (DHS), funded by the Michael and Susan Dell Foundation in their initial years, mHS came up with a model of a tripartite partnership with a microfinance institution (MFI) and a community-based NGO. The pilot bundled housing loans with technical assistance at a fee, with the idea that that users' value technical assistance if given access (mHS, 2011).

The DHS project was presented to the National Housing Bank and The World Bank's Low-Income Housing Finance (LIHF) team. Consequently, financing of home-improvements and upgrades was included in their 100 million USD re-finance facility⁶, with mHS acting as a project consultant.

However, the setback to the microfinance industry in India in 2011⁷ prohibited the DHS project from scaling up and supporting them through its funding model. The founders then

⁴ For a hybrid social enterprise looking to register in India there are two legal structures – one is 'for-profit' agencies such as Private Limited Companies, Sole properties, consulting firms that do not have a social mission, are expected to maximise revenue and do not receive any tax benefits. The second is for 'non-profit' organizations that can be registered as Section 9 companies, Private or Public Charitable Trusts, Societies and Cooperatives that receive tax benefits however cannot receive any equity investments for growing and scale. A hybrid for-profit social enterprise would require that the mission of the company is to make a social impact, beyond generating and maximizing revenue for the shareholders of the business. Unlike the B-CORP movement in the US which allows companies to be incorporated as a Benefit Corporation; in India, most agencies that are for-profit social enterprises are registered as private limited enterprises under the Companies Act. If external investors participate in the company, they often shape the future of the company with the risk of Mission Drift.

⁵ Foreign contribution regulation Act 1976 or FCRA is a law of government of India which manages receipt of foreign contributions or help from outside India to Indian areas. Its registration is normally granted after a minimum of 3 years of active existence of an organization

⁶ Refinancing is a credit flow to Housing Finance Companies & other Institutions. NHB regularly monitors the liquidity position of Housing Finance Companies. After companies have financed lending, NHB refinances the portfolio at lower than market competitive interest rates.

⁷ Bandhopadhyay, T & Unnikrishnan, D (2011, July 27). India's oldest microfinance firm on the verge of closure. *Live Mint*, Retrieved from <https://www.livemint.com>

needed to find alternative models of addressing the urban challenge they had taken up. During this challenging period, the founders both decided to take a sabbatical, to reflect and find more creative time to address their professional challenges with the intention to find alternative solutions.

A break from groundwork in India

In the summer of 2013, Rakhi and Marco wrapped up their operations in Delhi and relocated with their family to Varese, Italy. The hope was that this period would give them the time to come up with the next steps to address the challenge they undertook at the time of setting up mHS. This was also a much needed critical time for their family, as their second child was born during this period. At the same time, both the partners took up different international jobs. Rakhi continued her consultancy work with LIHF team in India and took up teaching at University of Bocconi in Milan and Instituto Impresa, Madrid. Marco worked on a post-disaster resilience assignment in Cebu, Philippines with Habitat for Humanity, and then with other humanitarian agencies who were building shelters for refugees in Jordan.

In 2015, the founders began to work on the idea of digital tools. During the DHS pilot project, it was the high cost of R&D and delivery of door to door professional expertise that had been prohibitive to scaling up. At this stage, it was deliberated if digital platforms could help bring technical assistance to low income users at their fingertips. Marco and Rakhi decided to evaluate the leverage of technology, as in other fields of education and health care for last mile delivery. This was in parallel with government's initiative 'Digital India' launched in 2015 aimed at a digital transformation of the country. India had over 1 billion mobile users in 2016, with the second largest smartphone market in the world (GSMA, 2016). Internet access was fast becoming more affordable in India with stronger 3G & 4G networks reaching the main cities, making mobile internet platforms the core of their next phase.

Reviving operations in India: Towards a hybrid organization structure

In 2015, operations were revived in India with a new entity, a private charitable trust- 'mHS City Lab' established with Rakhi, Marco and urbanist, Mukta Naik as the founding trustees. The aim was to straddle both the for-profit private and the non-profit public trust registration for attracting different sources of funding. The charitable trust gave them the opportunity to tap national funds through the Corporate Social Responsibility (CSR) mandated under the new CSR Companies Act 2013.

It has always been tricky for mHS to straddle these two structures and when they receive projects, it is always a critical decision to see if the project should be housed in the private structure or in the non-profit structure, despite having the same intent. Often, it is the latest regulatory environment along with the opportunities or restrictions from the funder which dictate which entity they are able to operate through.

Thus, with the creation of mHS CITY LAB and the help of loans from family and friends, mHS became operational once again. Marco and Rakhi continued to work out of Italy where their family was now based, with on-ground operations led by a team in Delhi.

ekShelter: a human centered design approach

At this stage, this case writer, (Swati Janu) acted as the team leader in Delhi from 2015-17, continuing a past association as a part-time consultant with mHS between 2012 and 2013. The sabbatical period had given the mHS team time to continue their conversations on designing individual temporary shelters for homeless families living on pavements and flyovers in Indian cities, building further on mHS' past experience with larger shelters for the homeless in 2011.

Based on its in-house research, the mHS team estimated the number of homeless people in Delhi was between 150,000 - 300,000 while official statistics indicated numbers less than 17,000 people⁸. Due to the huge lack of affordable shelter options and deaths in extreme weather conditions, the team set out to find a solution for the poorest of the homeless, who usually live on pavements without any physical or psychological shelter.

Based on the existing self-made solutions by various homeless families, Marco had devised the idea to design a low-cost tent that can be erected in a few minutes at night and packed up and stored just as quickly during the day. This design was seeded in a workshop organised as part of the interdisciplinary 'Unbox' design festival. In 2015, mHS began to think of design iterations remotely together with a young product designer, Julia Masalska, who joined the team as an intern. With the launch of mHS CITY LAB, Julia joined the team in the Delhi office along with other part-time volunteers and interns. The two founders co-ordinated remotely from their office in Italy on a regular basis. The temporary shelters designed for homeless families came to be branded as 'EkSHELTER' during a crowdfunding campaign, as a pilot project to build over 100 shelters for homeless families in Delhi. The intention behind the initial aid-giving approach of the pilot project was to help understand the effectiveness of the design and develop production & distribution strategies that could enable the beneficiaries to eventually either self-build them, or to buy or rent the shelters.

For the identification of beneficiaries at various locations across the city, mHS partnered with Indo-Global Social Service Society (IGSSS), who have been actively working with homeless communities over the past decades and whom mHS had also partnered with in 2011 to build winter dormitory shelters for homeless individuals. The ekSHELTERS were developed through various prototypes and multiple user tests with different homeless communities and were finally provided to over 100 families to help protect from the winter of 2015. The user feedback was collected over six months to understand the impact and help improve the design with the help of the team at IGSSS. The project was successful in providing warmth, privacy, safety and dignity to over a hundred families, and proved especially beneficial to women and children. It helped understand how it could be scaled up, and also demonstrated the willingness by the homeless families to pay for shelters.

⁸ According to an ad hoc 2014 survey by Delhi Urban Shelter Improvement Board (www.del.gov.in/)

At the same time, the feedback collected, and the impact evaluation showed that a few design changes still needed to be made to the shelter to increase its capacity and to create more durable details. Further, a broader, long-lasting impact required an approach that could plug the shelters in to the government's existing facilities. This required additional funding for strategic partnerships and team capacities for the project to be able to scale up. Due to their limited resources, mHS had to put that plan on the backburner to be able to focus on their concept of mobile digital platforms for scaling impact in resilience-building within communities.

Leveraging digital technology: the Digital Tools Project

mHS' Theory of Change⁹ from early years had been that appropriately designed technical information with customized inputs to masons and homeowners in incremental housing can positively influence the quality of buildings, especially in low-income communities. This was based on the observation that many building mistakes in urban centres are made due to a lack of basic construction knowledge of the relatively new construction technology of concrete-framed structures with brick infill walls. If these mistakes could be corrected, the safety and quality of buildings could improve drastically.

After their break, the founders proposed that mobile digital tools delivering these services could become direct guides for masons and homeowners and improve the output of mason' training programs or awareness campaigns on structural safety. This approach was informed by numerous field visits to informal settlements of Delhi and Ahmedabad and focus group discussions with masons in partnership with NGOs such as Centre for Urban and Regional Excellence (CURE), Baliga, Mahila Housing Trust (MHT), and Saath. The team also organised visits to construction sites of large-scale projects to interact with masons there and understand the need and willingness to up-skill.

They found that the homeowners were almost always open to using mobile digital tools, especially through the youngsters in their family, if it could help them save money and plan their building project better. The masons expressed readiness to use technical information only if it could help them get more clients and charge a higher fee.

The team realised that it was important that the tools be not perceived as a threat or competition to the masons, who needed mutual and viable partnerships for them to begin using them. The field visits and consequent pilot projects helped in understanding how the tools could be plugged into existing NGO centres, which masons visit to avail welfare benefits and for documentation. The team also approached various mason training organisations such as Labornet in Bengaluru and Saath in Ahmedabad to understand if the tools could be plugged into their existing training programs.

Further, discussions with local material suppliers and directors of different cement companies helped the team understand other networks of dissemination of the digital tools and information. Mobile platforms, in the past decades, have played an important role in bringing innovative solutions in developing markets, which had formed the inspiration for the

⁹ See Exhibit A (Theory of Change template)

founders to use a similar approach. They went on to envision a series of digital tools to create awareness on best construction practices and provide access to technical assistance.

The social impact envisaged would be threefold – 1) Offering low-income homeowners access to information on construction management and financial planning thereby reducing the risk of indebtedness, and empowering them in their dealings with masons and contractors; 2) Providing guidance to masons through easy-to-understand, customised inputs during construction, thus positively influencing the quality and resilience of these buildings and 3) Improving the impact of existing mason training programs by skilling local masons through technical course modules.

The homeowners in low-income settlements formed the target group in the first phase, who were planned to be reached through digital platforms such as mobile apps and a network of e-kiosks at local NGO centres within their neighbourhoods. The aim was also to cater to the masons who take up construction of houses on small plots as small-scale contractors, thus acting as micro-entrepreneurs. The innovation was also seen to be attractive to financial institutions and construction material providers that were commercially viable distribution channels and were increasingly looking at serving the low-income construction ecosystem.

As discussed before, they could also be offered to other stakeholders such as skill training institutes as learning tools for masons. To scale up the project in the longer run, the team noted that it would be crucial to create a larger, public platform through tie-ups with government regulation bodies and the National Housing Bank to be able to monitor and check the quality and safety of informal settlements.

This plan got a big boost with a 25,000 USD competition award towards the end of 2015 from Internet.Org, an open platform by Facebook. At that time, Facebook was seeking to expand further in India and support new digital initiatives aimed at social impact as part of its philanthropic efforts.

Lessons from the field

A cost estimator tool was the first in the series of the proposed digital tools that was prototyped and tested as a pilot in partnership with MHT, Delhi and Saath over 2015 and 2017. The tool provides practical information to guide users in pre-construction phase and track their finances linked to stages of construction. It asks for simple user inputs such as location, type and size of plot, number of floors, sanitation configuration and quality of finishing. The responsive service then generates detailed information on material quantities, costs, required labour and project timelines. It also communicates key messages on main construction mistakes to avoid for improving the quality and safety of structures.

The approach to the design and distribution of this service evolved considerably through multiple user tests and site visits. Through field interactions and pilot projects, it became clear to the team that the service needed to be more than a mobile app and had to plug into a larger package of services. Considering that the uptake of Android phones was slower than the pace the project required for it to be self-sustainable, mHS began to focus more on intermediary and indirect approaches to reach the end-users.

These involved working with the three key stakeholders – microfinance institutions, material suppliers and mason training organisations. For their first cost-estimator tool, they realised that microfinance companies and housing finance companies would be the key stakeholders due to their interest in exact estimates, to link them to loan disbursement cycles.

This approach was also informed due to the interdisciplinary nature of the team. From its inception, the team had primarily comprised of architects and designers from its inception, with Rakhi providing critical business development inputs and sociologists' perspectives provided by Fellows from the American India Foundation, who joined the team for two-year long terms (2010-11 & 2012-13). The second phase saw a conscious approach from the founders to gather inputs from the disciplines of marketing and branding to come up with effective communication and distribution strategies for the service.

The advertising agency 'Please See' was hired to understand what users want and what users need, without the pre-informed solution-focused bias of designers and entrepreneurs. A cohort of Yale School of Management students worked closely with the team over six months in 2016 as part of their Global Social Business Entrepreneurship programme, to help mHS find the most effective approach to achieve its targeted social impact and reach the end users. In the first few months, they worked remotely with mHS to understanding the project and later conducted field trips to India. This group helped convince the team about the need for working with intermediate stakeholders such as microfinance companies and cement companies for the project to become self-sustainable. Pitching the tools to different potential stakeholders was also seen to be the most effective way to understanding how to make the project viable and self-sustaining.

Through these learnings, the founders decided to focus on developing the first tool to provide cost estimates for the use of financial Institutions providing loans for home construction, upgrades and extensions. Agencies such as MFIs & Housing Finance Companies could link the tool to their housing loan disbursement cycles. Such a digital tool would enable loan officers to effectively collect and collate data from their housing loan projects, saving them higher HR costs of hiring engineers.

The software as a service (SaaS) fee from the tool would make it a self-sustainable service for mHS. India Shelter Finance Corporation became the first stakeholder to come on board in 2016 and decided to invest in developing the tool. Soon after, David Book, a software developer and founder and developer of Buzztouch – a web platform to create apps – joined the team in Varese for the development of a cloud-based platform, RCL Cloud.

Human-centered design and impact evaluation

Due to the 'bootstrapped' mode of the organisation from the start where the company was started without external help or capital, the founders have adopted a lean startup methodology¹⁰ which involved tests and prototyping at every step of the design development. Practice-based research and impact evaluation of pilot projects has been a key approach

¹⁰ The methodology aims to create a minimal viable product all the while making incremental changes to it through feedback from users. This method was popularised by The Lean Startup, a book written by Eric Ries, which describes the startup process as "build, measure, learn".

taken by the team. A customised audio-visual training module to promote a behaviour change within the construction ecosystem has been an important feature of mHS' vision. The training aspect of this program was selected for impact evaluation by the J-PAL Poverty Action Lab and Urban Services Initiative (USI), as a potential innovative program to influence both delivery of skill upgradation and housing quality. The project evaluates the impact of mason training programs on the quality of built environment through randomised control trials. It was designed in partnership with Saath at Ahmedabad to target self-employed masons. Though it took a good part of 2015 and 17 to be able to launch the project, a pilot version of the project was recently completed and will be critical to test viability of the service.

Another valuable learning from the field had been on the role of design, engineering and architecture in the lives of the residents of informal, low-income neighbourhoods. The team realised that seismic safety and better design of houses were not the top priorities for these communities who were facing more urgent issues such as health, education and even marriage of children. Since the chance of a likely disaster is not easy to prepare for, with limited funds for other already existing and pressing issues, the team at mHS learned to tie up the need for resilience with the aspirations of the residents. For e.g. through their interactions with homeowners, they realised that the choice of tiles for their facades was an important decision for those building a new home. This enabled the team to devise ways to link the look of the house (such as by providing 3d visualisations) with the seismic designs as a more effective approach to human centered design.

The team learnt innovative approaches to working in building resilience in communities where risk perception is low. Furthermore, it helped them understand their own role better on the need to strike the right balance between the expertise they brought and the needs vs aspirations of the end users they were hoping to support.

Concluding note

The story of mHS could be said to be one of optimism and drive of its founding members which has helped fuel the young practice and enabled an experimental and risk-taking approach. Supported by a string of grants intermittently through the course of their work, the organisation also faced severe funding crunches at various periods with team sizes varying from two to ten. mHS today continues to have its legal presence only in India, even as they seek the ideal host location with an enabling environment to register an entity which is a social enterprise that can provide their service globally.

Regular rooftop talks organised by mHS on social change called 'Barsati' have helped create a micro-community of creative professionals and entrepreneurs constantly learning from each other. Social events such as informal get-togethers on Fridays at the office which doubled up as a co-working space was also a way to remain connected with mHS team, partners and friends.

During this writing of this study, the team found itself in another lean phase stretched out to its maximum capacity with severely limited financial resources. However, a new funding and partnership with ACCESS Development Services supported by CISCO Foundation has just been initiated for the future. This one-year project would now enable mHS to launch the digital tools for mason training organisations, identified as a key intermediary stakeholder, to

provide technical assistance in informal settlements. The main decisions facing the founders today are what technical capacities to add to the team next, and which strategic partnerships to focus on, to be able to achieve the large-scale impact that they aimed for almost a decade ago, in a classroom project.

IV. References

Bandhopadhyay, T & Unnikrishnan, D (2011, July 27). India's oldest microfinance firm on the verge of closure. *Live Mint*, Retrieved from <https://www.livemint.com>)

Kerr, W. R., & Brownell, A. (2012). *micro Home Solutions: A Social Housing Initiative in India*. Harvard Business School Case 813-092.

Mehra,R; Ferrario, M; Naik, M; Janu, S; Yengkhom, V. (2015). Brick by Brick: A model for self-built housing in India. *International Journal on Human Development and International Co-operation 4(2)*, Universitas Forum. Accessed at <http://www.universitasforum.org/index.php/ojs/article/view/161>

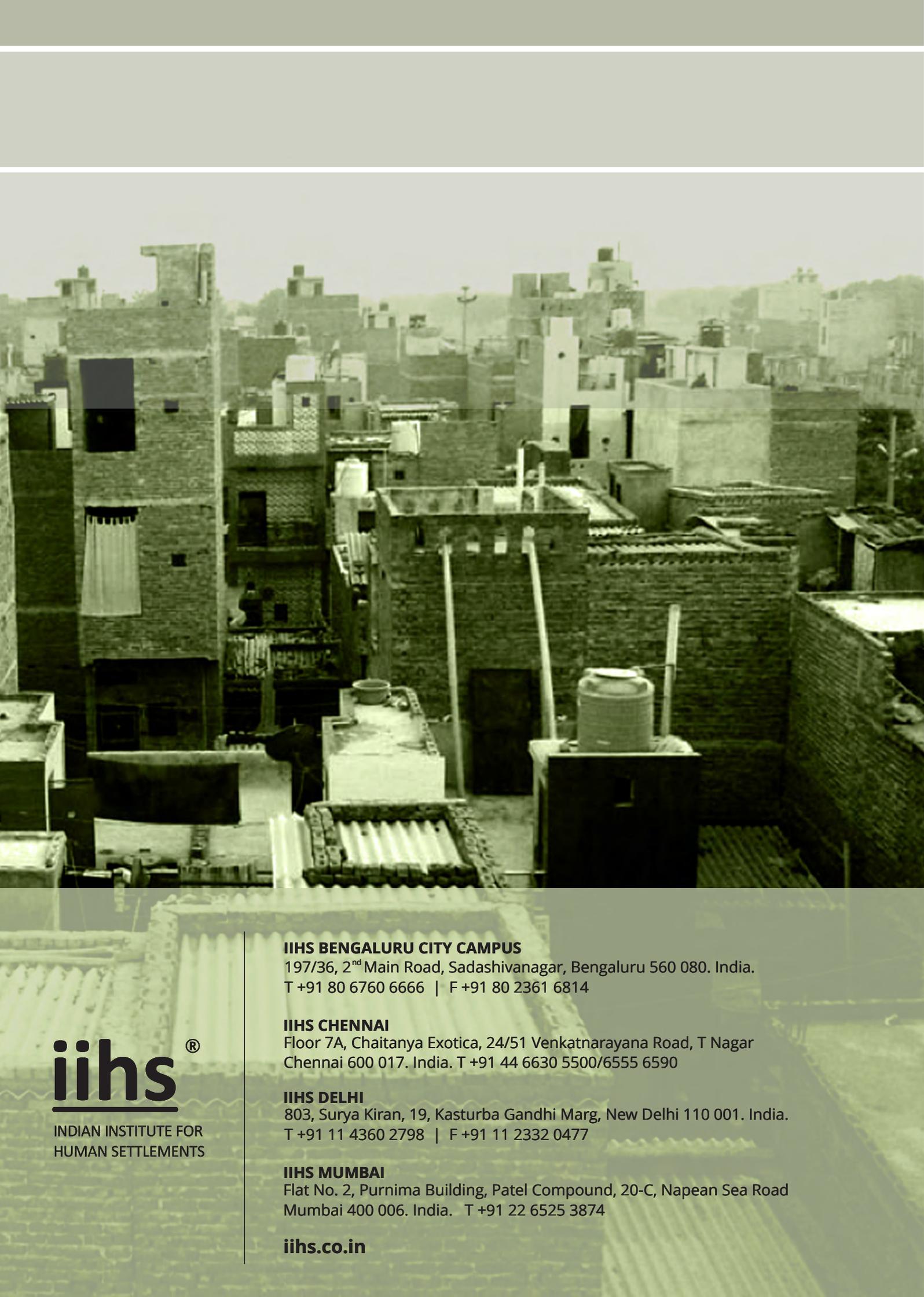
MoHUPA. (2017). *Report of The Technical Group On Urban Housing Shortage (TG-12)*. Government of India.

UNDP. (2002). *Urban Earthquake Vulnerability Reduction Project*.

mHS. (2011). *Self Construction- Enabling safe and affordable housing in India*. micro Home Solutions. Delhi.

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The Indian Institute for Human Settlements (IIHS) is a national education institution committed to the equitable, sustainable and efficient transformation of Indian settlements. IIHS aims to establish an independent funded and managed National University for Research and Innovation focused on the multi-sectoral and multi-dimensional challenges and opportunities of urbanization. The University is intended to be a globally ranked institution. The IIHS is a proposed network of mother and daughter institutions across South Asia, leveraging on the local and regional knowledge and innovation and linking them to global best practices. Its mother campus, based in Bengaluru, will include academic, research and social infrastructure, student and faculty housing. This campus is expected to set international standards for efficient, economic and sustainable design, operations and maintenance.



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