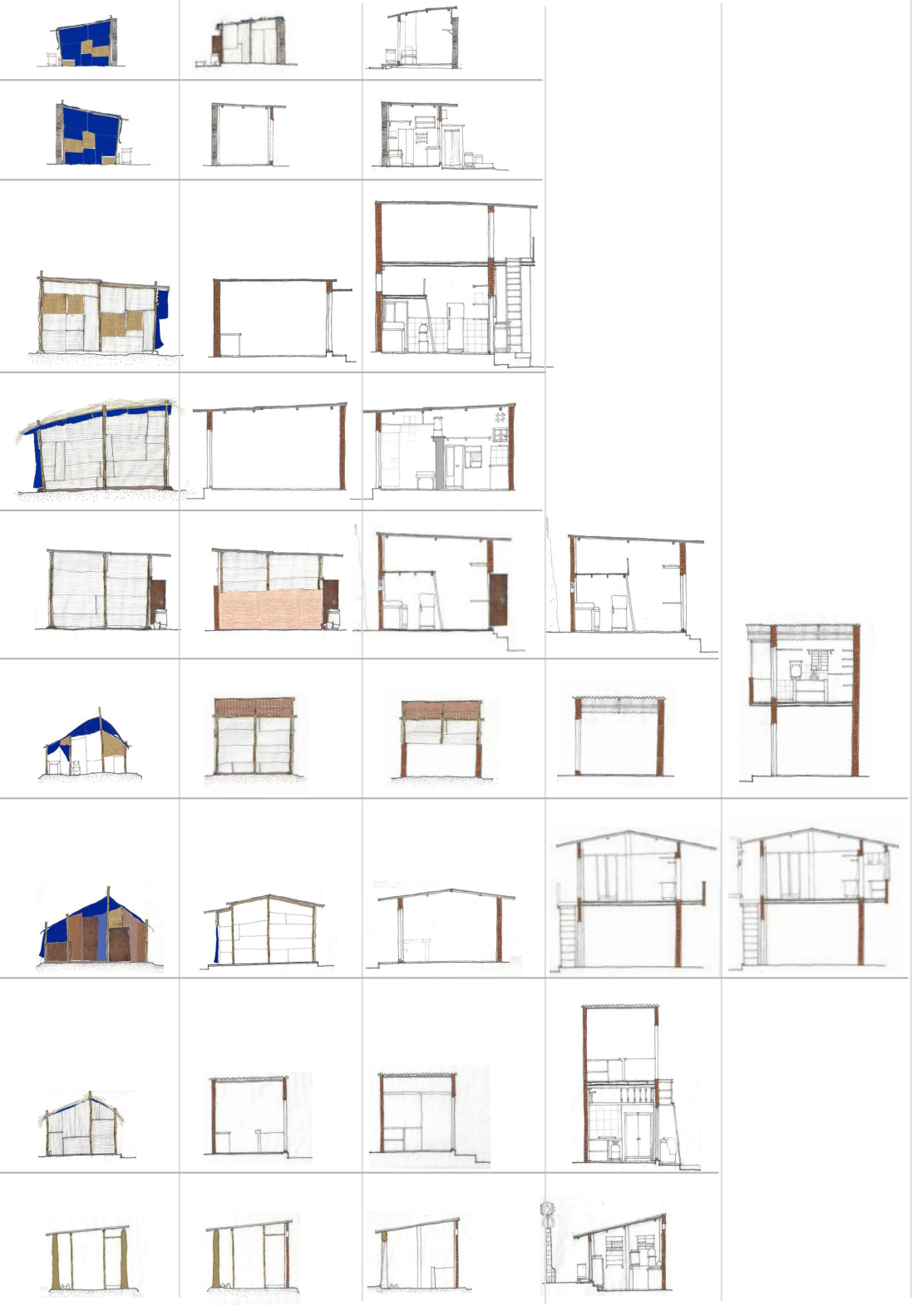

INCREMENTAL

A STUDY OF INFORMAL INCREMENTALITY, ITS IMPACTING FACTORS AND SUPPORTING SYSTEMS

2011-13 I SPARC

ACKNOWLEDGEMENTS

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Photocredits
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PREFACE

Incremental upgrading is understood to be the investments made by households in improving their homes over a period of time. This study was undertaken to document, understand and articulate barriers currently facing the process of incremental upgrading in informal settlements and to make recommendations based on these findings.

The study was undertaken by the Society for the Promotion of Area Resource Centres, an NGO that works in partnership with two community based organizations— the National Slum Dwellers Federation and Mahila Milan.

Society for the Promotion of Area Resource Centres (SPARC): Founded in 1984, today SPARC is one of the largest Indian NGOs working on housing and infrastructure issues for the urban poor. SPARC began its work with Mumbai's pavement dwellers, and in 1986 tied up with the National Slum Dwellers Federation (NSDF), a broad-based organization of the urban poor founded in the mid-1970s. In partnership, SPARC and NSDF formed another community-based organization, the *Mahila Milan* (MM) (a decentralized network of poor women's collectives). Collectively, all three organizations are known as the Alliance

SPARC *Samudaya Nirman Sahayak* (SSNS) is a not-for-profit company owned by SPARC, NSDF and *Mahila Milan* to support, assist and partner slum communities to take on construction projects and activities that the poor living in cities can take on in their neighbourhoods. SSNS provides technical, financial and management support to slum communities seeking to upgrade their neighbourhoods.

National Slum Dwellers Federation (NSDF) is a community-based organization whose membership is largely made up of community groups and leaders that live in informal settlements around India (approximately 750,000 households as of 2010). Established in 1974, NSDF has a history of organizing the poor against demolitions, mobilizing them to come together, articulating their concerns and finding solutions to the problems they face as well as attempting to secure basic amenities of water, sanitation and housing for the urban poor.

***Mahila Milan*,** meaning "Women Together" in Hindi, are decentralized women's collectives that manage credit and savings activities in their communities and through it develop leadership skills to participate in community and city linked issues impacting the urban poor. The rationale behind the formation of MM lay in the recognition of the enormous potential that women's groups have in transforming relations within society and in improving the lives of poor families within informal settlements.

CONTENTS

INTRODUCTION 01

1.1 Premise

The alliance of SPARC, NSDF and *Mahila Milan* works towards creating a voice and expanding choices for poor households and neighborhoods in cities locked within informality and excluded from development investments. NSDF brings together slum dwellers seeking solutions to their problems, by building networks that learn from each other. Together, they explore possibilities of creating knowledge and strategies with which to negotiate with formal city and state institutions, in order to change their habitat situation and produce solutions that address their needs and that of cities.

The collective exploration, learning and reflection on community-driven solutions remains crucial and central to this process. Creating information and knowledge about who they are and what their challenges are, form the foundation of collective identity and ongoing deliberations for exploring alternatives and seeking solutions. These processes constantly engage communities to move from being passive victims of exclusion to active participants in change that hopefully improves their lives and improves the city.

In the first 15 years, the alliance focused on stopping evictions and demanding state attention to tenure, security and amenities. They sought access to existing government subsidies for housing that had remained unutilized in city and state government budgets.[1] The projects and processes they explored sought to highlight what the poor wanted in design and quality, and to develop a wider spectrum of the types of housing projects that needed to be in place to address diverse needs of the poor residing in large, small and medium cities. Many of the present projects are built on the outcomes of negotiations between communities affiliated with NSDF and *Mahila Milan*, and state governments and municipalities, for land, access to subsidies and inclusive procurement norms.

The alliance builds its strategies and processes on the basic belief that cities and all who live in it have to operate on the principle of interdependence. Municipalities and their exclusionary behavior have historically produced housing and infrastructure deficits and produce informality of habitat through their non-acceptance of the urban poor. Locked in informality, the survival strategies of the poor have produced parallel processes of informal housing that have produced neighborhoods and their own version of planning that is not integrated with the formal city. However “inappropriate” this housing and neighborhood development may be, it presently houses, 35% to 50% of the city population and by its sheer volume demands accommodation.

To understand the sheer scale of the urban challenge, we must look at the numbers involved. The 2011 Census of India puts the urban population living in informal settlements at 22% of the total urban population that reported slums, which is around 1,37,49,424 households. In Mumbai alone 41.3% of the total urban population lives in slums.[2]

Although the first tough steps have been taken in many cities, initiatives (both private and public) for the urban poor fail to reach larger numbers for several key reasons.

In 2006, under a sub-scheme of the JnNURM, known as Basic Services to the Urban Poor (BSUP), the central government provided subsidies, of up to 90%, for a complete core house unit of 25 square meters in projects

1. SPARC (2012), *Community participation in BSUP in 11 cities*, NTAG commissioned study, New Delhi
2. Primary Census Abstract for Slums, Office of the Registrar General and Census Commissioner, India, 2011

across 63 cities and towns. It was limited by land availability, strict norms, restrictive procurement procedures and political unwillingness to deal with large numbers, and evaluation of the BSUP and IHSDP projects done by the Planning Commission of India, and various agencies the state commissioned, indicated poor absorption of funds, delayed projects and less that 3-5% slum dwellers in any given city getting benefits.[3]

Additionally, barring a few exceptions, projects did not include communities in the decision making process resulting in dissent and dissatisfaction. Most households did not know they had to make a 10% financial contribution, housing designs were produced with a standardized plan that did not accommodate actual needs of households, policy hurdles put cost escalation burdens on the contracted agencies resulting in delays and unfinished projects. Many projects did not take off as state governments could not resolve the conflicts between the agencies that owned land and the city. And for the most part, houses constructed often did not have water and services.

The private sector is often seen as the solution to all issues that the state is unable to undertake and incentives to the private sector to undertake housing construction for the urban poor inevitably get taken up by upper income groups whose housing needs are equally neglected. The formal housing finance industry along with national government and international development institutions have now successfully created instruments to provide loans to low income households with formal jobs who can borrow money for their homes. Valiant efforts continue to explore ways and demonstrate that lending to the informal poor can be done. But like the subsidy programs, formal financing too barely reaches 5% of the slum dwellers whose incomes can afford the monthly repayments.

Government programs that provide a complete core house fail to reach large-scale numbers, universal provision of amenities still remains a challenge and mainstream housing finance seems unable to reach the urban poor to enable self-construction. Often development debates on such issues end up favoring one choice over the other and a particular conceptual framework forms the basis of all investments. In reality, strategies to transform the lives of the poor need constant experimentation and a wide range of possibilities need to be explored leading to refinement of some strategies, jettisoning others and adapting still others. The development of stable and robust solutions happens through study and refinements. None of these processes are generally perfect since these processes have to navigate many pre-existing standards, a huge backlog of negligence and difficulties in changing the patterns of activities of the state and households.

With this background, one of the alternatives is to support processes that build on investments already made by the households through access to finance and through changes in regulations related to housing design and construction. Experience of the alliance and others reveal that for every house built using state subsidy and/or those that get access to market financed loans, thousands of homes are being built incrementally by households themselves. Such incremental housing (housing improvements made over time or settlement level investments made for laying of drainage, sewerage, and water lines over a period of time) is where the bulk of transformation has been and is happening. The recognition and accommodation of incremental processes has to come eventually since the state and market simply cannot produce the volume of housing stock the current deficit requires.

3. Grant Thornton (March 2011), *Appraisal of Jawaharlal Nehru National Urban Renewal Mission (JnNURM),* Final Report, Vol. I, pp. 62-64, 68, 70

If examined carefully, incremental investments can and should provide the basis for scalable and massive upgrading if it embraces what people already do. Investing in solutions that build around what households and neighborhoods can do while improving the city standards and insight of what improvements they can make while incrementally upgrading, can be a game changer.

Supporting what people do is not a new phenomenon. In the 60s and 70s, the theories of John Turner formed the basis of the sites and services program of the World Bank in some 100 countries. This process would allow people to build their homes or improve them while the state would provide amenities and secure tenure. This concept was adopted by the World Bank who advised governments to undertake "sites and services" projects where amenities and services would be provided and plots laid out for people to build houses. However, during implementation, sites were located on the periphery of the city, with no access to transport or livelihoods. Critics also point to the high building standards adding to the challenges of the program. Several dissatisfied households eventually sold their homes and moved back to informal settlements, closer to transport and job options.[4] On reflection, it would seem that studies on how and why the poor build were appropriated by the bank leading to a state-led delivery of projects that by the 90s had lost their popularity. While the original conceptual framework proposed by John Turner is still valid, its interpretation of allowing the state to define where to pre-construct the infrastructure led to governments choosing locations they wanted rather than where the people wanted to stay.

The alliance recognizes that there are challenges in both - housing provision by the state and an entirely people driven process. Cities and the lives of their citizens are locked symbiotically; choices made by one impact the other and vice-versa. Self-built houses without access to amenities, land and security impact both city development and the quality of people's habitats. These and many factors discussed later in this document indicate the range of variables that are interdependent and we can acknowledge that at this stage we have merely touched the surface.

Thus, the focus of this exploration began with the understanding that to mainstream a solution, we must first learn from the challenges of earlier sites and services programs, government housing projects and self-constructed incrementally upgraded houses. By documenting and analyzing what communities do themselves, and the strengths and weaknesses, there is a possibility of defining and developing strategies that allow what the city can do to compliment what people do best for themselves.

This study seeks to assist the federated slum dwellers to build on earlier and ongoing documentation on this subject, and to facilitate, within the alliance, how we articulate the ways in which the poor build and upgrade their homes and neighborhoods. Here, we also acknowledge that social movements of the urban poor and their leadership prefer to build the core house at a stretch, like the processes of state provided subsidy and at present the priority of many city federations. This study hopes to deepen and strengthen the acknowledgement of what the urban poor continue to do while exploring how their advocacy can include creating legitimacy, finance and regulation to strengthen incremental housing options. By developing the knowledge of exploring this process with communities, we hope to build on what can be preserved and consolidated in the present incremental growth and what needs to change. Also, we hope to direct what roles and functions can be played by a larger expanded set of actors which could

4. Davis, Mike (2006), *Planet of Slums,* London, NY: Verso

include the poor themselves, financing agencies, technical and professional actors, the city and the state as well as the informal and formal private sector.

1.2 Objectives

The objective of this study has been to recognize and outline an incremental approach that can work under certain conditions. The study looks at conditions under which houses were built, their stages of growth and the investments made by households, while assessing the capacities of the various actors in this process. It explores the various external conditions that produce differential impacts on the extent of improvements that incremental investments made to the houses produced. This also meant noting that there are challenges in self-invested improvements in slums that cannot be solved without strengthening support structures and systems.
Phase 1 of this study, as documented here, looks at the investments made by households while assessing the capacities of various actors in this process. Through our findings and structure of analysis developed in Phase 1, we plan to continue this study as Phase 2 in small and medium towns and see if the variables impacting choices remain the same.
The first phase of this research was undertaken with the following goals in mind:

- To document and articulate barriers and impediments that come in the way of scaling up this process.
- To develop lending for ongoing incremental upgrading; developing financial aspects of this process with communities and back lenders.
- To undertake dialogue with city officials, technical professionals, researchers and others to examine the potential for value addition in policy, finance design and materials that they can develop in collaboration with slum dwellers.

1.3 Methodology

Time frame: All interviews were carried out in 2011 (May-August) and the documentation and analysis was put together between 2011-2013.

Case study selection: About 40 houses in 10 settlements in Mumbai and Pune formed the basis of the study. The settlements were selected from those areas where the federation has a presence so as to allow for information on settlement history and detailed interviews with households. *Mahila Milan* members accompanied the study team for all interviews. Information and details collected in Mumbai suffice to illustrate the process and form the basis of the discussions. Each of the chosen settlements represent different situations of land tenure, given that the first assumption is that tenure is directly related to housing improvements.

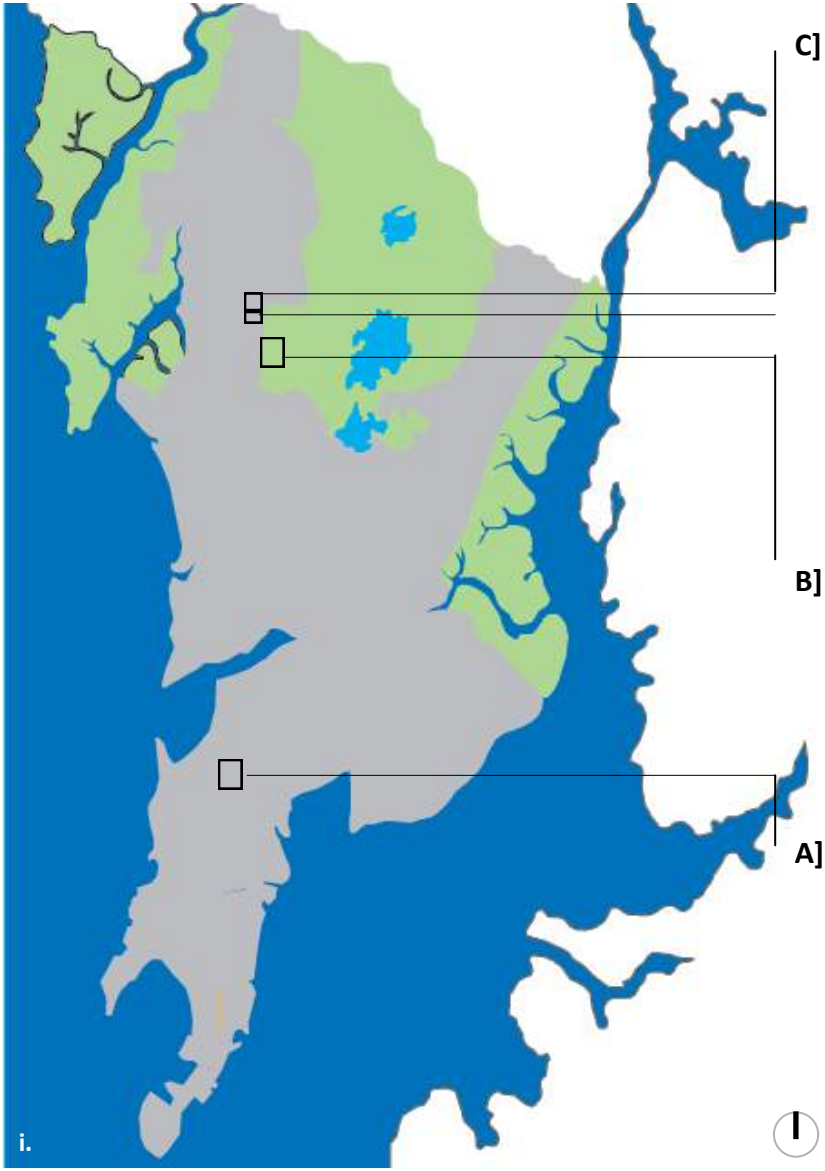
Documentation: Interviews were held at the settlement level, with a community representative to gain an understanding of the history of the settlement, At the household level, interviews were carried out with family members to understand the process of upgrading houses. Interview questions were laid out in an informal structure with main guiding queries being related to the choices made and the actors involved, the reasons behind those choices, timeline of incremental change in the house and the reasons behind the change occurring at that particular time.

Drawings were made of the present house during site visits and the interviews served as guides to conjecture about the evolution of the house (in terms of materials and layout) till the present day. Photographs were used to document the present condition of the house.

MORPHOLOGIES:
DOCUMENTING TRANSFORMATIONS OF THE INFORMAL DWELLING

02

2.1 Locating case studies: Mumbai



Goregaon East

Santosh Nagar, H-Sector

BMC Colony, Dindoshi Vasahat, E-2

Jai Bhim Nagar, Vadke Compound

Aarey Colony

Dadar East, F-North

Pavement Dwellers













2.2a Settlement History

Dadar East, F-North
Pavement Dwellers
Sai Krupa Jhopad Sangh I Jai Shivaji Nagar Jhopadpatti

Pre-1995

Regular evictions, households would dismantle bamboo and plastic and then rebuild their houses after the demolition trucks went away
Toilets and water used in residential chawl closeby. Water sold for Rs.200 per month.

1995-97

The work of the national slum dwellers federation with the pavement dwellers leads to formation of community groups that stand against demolitions and begin negotiations with municipalities.
Eviction of houses stopped in 1996 and those of shops in 1997.

Post -1997

Common toilet set up by the BMC, Bath Rs. 10 per use, Toilet Rs. 1 per use, later to become Rs.3 per use.
Jai Shivaji Nagar area corporator provides the pavement houses with water connections
Electricity is stolen although some huts have meters.

2011

Several households have been relocated and rehabilitated by the municipal corporation to Mankhurd, in the northern suburbs of Mumbai.

[2000]

ii.

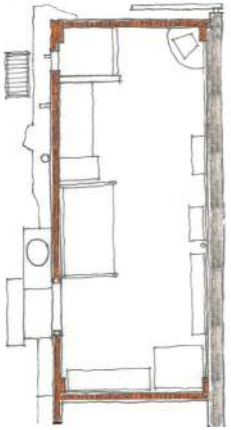
[2012]

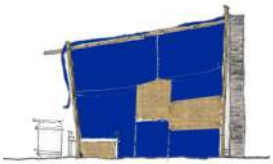
iii.

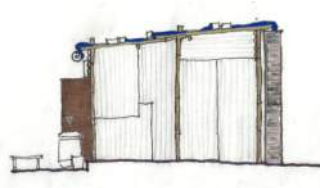
2.2b Dwelling Transformations

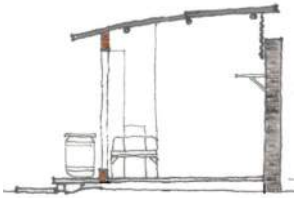
Dadar East, F-North

Sai Krupa Jhopad Sangh, Mahatma Jyotibai Phule Road









[Pre-1995]

Annual repairs during rains
Cost: INR 530 for replacing plastic and sand bags, INR 5000 given by government

Annual flooding during monsoons
Evictions stop in 1995

[1996]

Son gets married

[2008]

Brick walls built in stages, Bath added inside, *Koba* floor
Cost: INR 35,000
Financing source: Savings, INR 10,000 loan with 10% interest, borrowed, pawned jewellery worth INR 30,000

Toilets and water from neighbouring *chawl*

Connection obtained

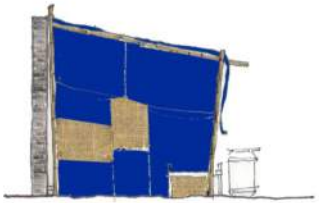
Common toilet

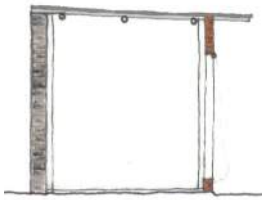
Water tap connection obtained illegally

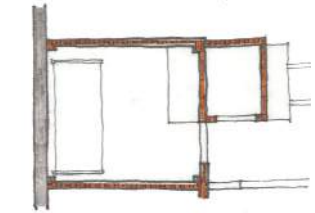
2.2b Dwelling Transformations

Dadar East, F-North

Jai Shivaji Nagar Jhopadpatti, Behind BEST depot







[1995]

Bought house of bamboo, gunny, plastic, mud floor
Cost: INR 35,000

Neighbouring compound pipe-line leakage into house
Annual flooding during mon-soons
Evictions stop in 1995

[2001]

Full Brick walls, Koba floor, Metal sheet roof
Cost: INR 20,000-35,000
Outside labour

[2008]

Laadi flooring, Marble kitchen platform, Bath-room added outside house
Cost: INR 40,000
Financing source: Loan from job at 1.5% inter-est, material given as office bonus
Plastic replaced annu-ally for INR 350

Toilets from chawl
Water obtained for INR 100/month
Electricity lines for INR 300-500/month
All obtained from neighbouring *chawl*

[2009]
Common toilet
Water tap fitted by corporator for INR 500
Electricity meter fitted for INR 200

2.2a Settlement History

Goregaon East

Santosh Nagar, H-Sector I BMC Colony, Dindoshi Vasahat, E-2

1984	Relocation of 90 households by Bombay Municipal Corporation from Pavements and Nallahs in Worli, Tardeo, Vile Parle, Mahim, Mahalaxmi to Goregaon East, Plots of 10'x15' provided by BMC but no amenities
1985	BMC provides common toilet
1989	BMC provides common water taps
1990	Roads & Pavements by local corporator, Increase in hutments
1999	Private water connections taken by groups of families, individual electricity meters also obtained, garbage collection not done regularly
2004	VAMBAY scheme implemented in H and M Sector Construction of kitchen platform and four brick walls with concrete slab on 10' x 15' plot
2010	Garbage Collection by BMC

Jai Bhim Nagar, Vadke Compound

1992	Families begin occupying this marshy land, owned partly by BMC and partly privately. Private owner sold her land to a contractor who parceled it and sold it to several low-income households
1992	BMC constructs common toilets, water taps and electricity. Internal roads paved by households themselves
1993	Individual water connections obtained by several households, Garbage collected by BMC
2010	Garbage collection is house to house, Internal roads paved by corporator and a trust who owns part of the land

[2000]

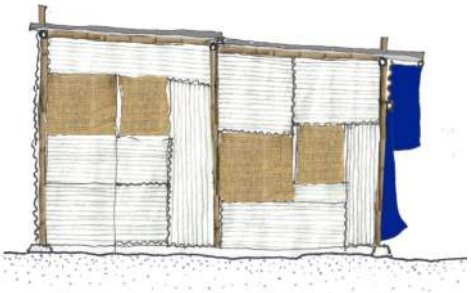
iv.

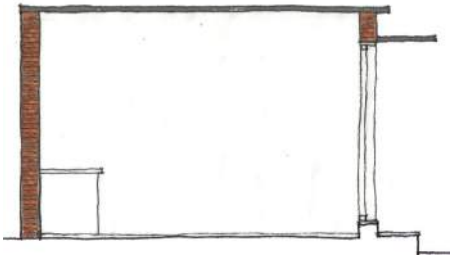
[2012]

v.

2.2b Dwelling Transformations

Goregaon East
Santosh Nagar, H-Sector





Snake eggs and insects found on mud floor

[1998]
Bought house
Cost: INR 60,000
Koba flooring added,
Metal sheets replaced
Financing source: Loans

Koba cracks, water leakage

[2000]
Koba flooring redone
Financing source: Loans

Savings accumulated

[2003]
Secondhand Tiles replace Koba flooring
Cost: INR 8000
Financing source: Savings, Loan from job, pawned jewellery

[2004]
VAMBAY scheme implemented

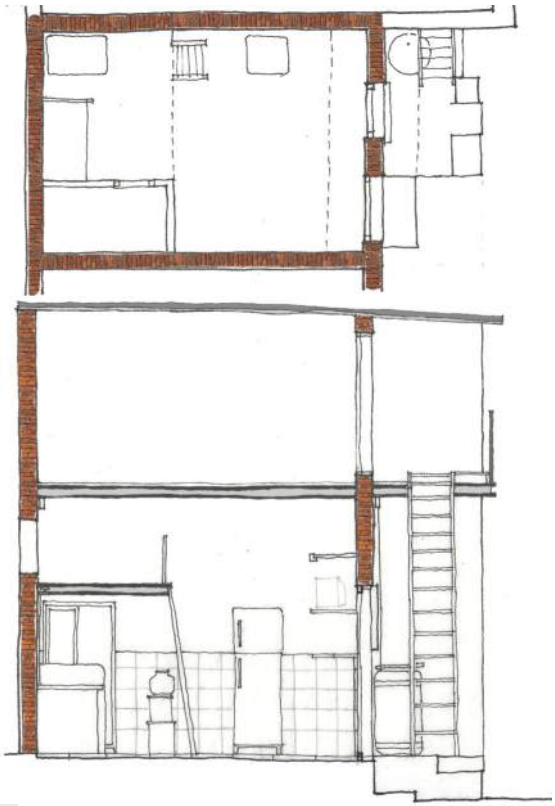
Annual Monsoon Repairs: INR6000 for metal and plastic sheet replacement

Illegal electricity lines for INR 150/month, INR 4000 paid to put electricity meter

Water from BMC tap and boring well

Common BMC toilet, badly maintained

[2005]
Common BMC toilet rebuilt



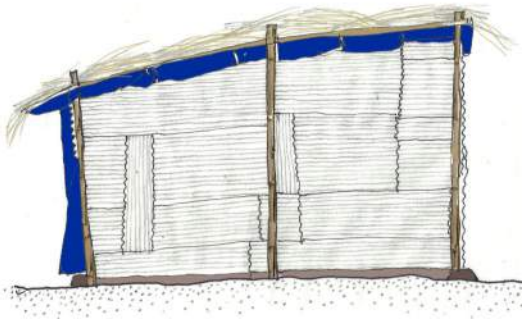
Space for children to study and- Privacy for daughter

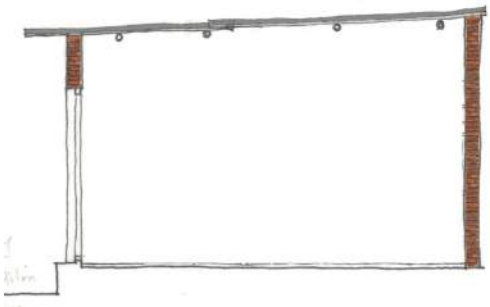
[2010]
Mori made into a full walled bathroom
New floor added, Mezzanine, kitchen and tiles added
Cost: INR 1,75,000
Financing source: INR 2 lakh loan from job
Outside contractor, supervised by husband

[2008]
INR 2500 per family for shared water tap amongst 8 families

2.2b Dwelling Transformations

Goregaon East
Santosh Nagar, H-Sector





[1998]
Bought House
Cost: INR 2000
Financing source: Loan from husband's office

Stones fall onto house from adjoining hill and broke existing structure

[1998]
Structure rebuilt by Contractor

Insects came through floor, Garbage from hilltop houses thrown onto roof

[1998]
Koba flooring added

[2004]
VAMBAY scheme

Paid INR 2000 for additions to scheme provisions

Annual Monsoon Repairs: INR1000

Illegal light taken on rent, 1 point cost INR 60, INR 250/month

[2000]
Electricity Meter put in, INR 300/monthly

Drinking Water - BMC tap, Rest from boring well

Common BMC toilet

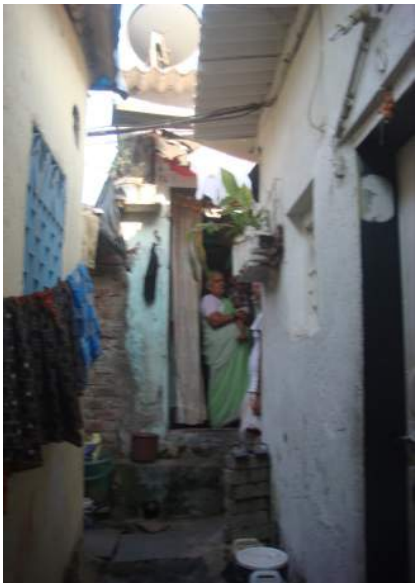
[2005]
Common BMC toilet rebuilt under MSDP program

Grown up daughters need privacy

[2006]
Partition Added
Cost: INR 2100
Financing source: Own savings

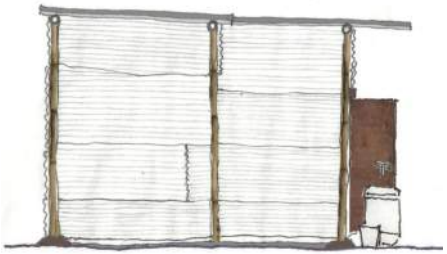
[2010]
Re-plastering
Cost: INR 9000
Financing source: Own savings

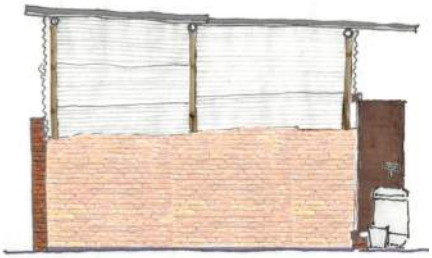
[2008]
Water Tap shared by 8 families, Garbage collection for INR 10/ month

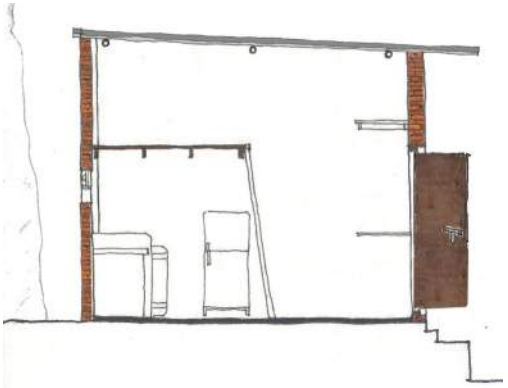


2.2b Dwelling Transformations

Goregaon East
Santosh Nagar, H-Sector







[1993]
Bought House
Cost: INR 22,000
Financing source: Savings

Water leakage from adjoining hillside from 1993-2004

[1997]
Half walls built
Cost: INR 7000-10000
Financing source: Savings

Fear of evictions prevent full walls being built

[2004]
VAMBAY scheme

Additional INR 1000 put in for Mezzanine

Annual Monsoon Repairs: INR 300 to replace plastic

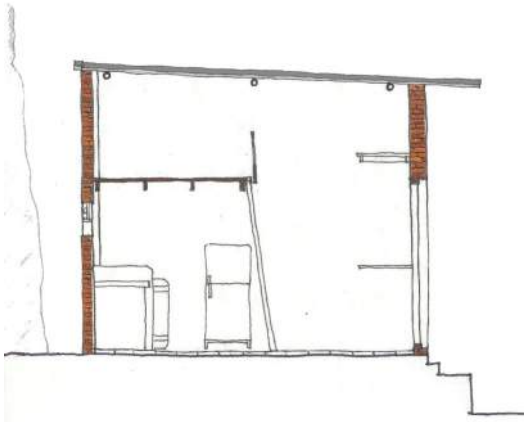
Illegal electricity connection, INR 100/month at INR 50/point

[1996]
Meter installed for INR 2200, INR 550-600/month

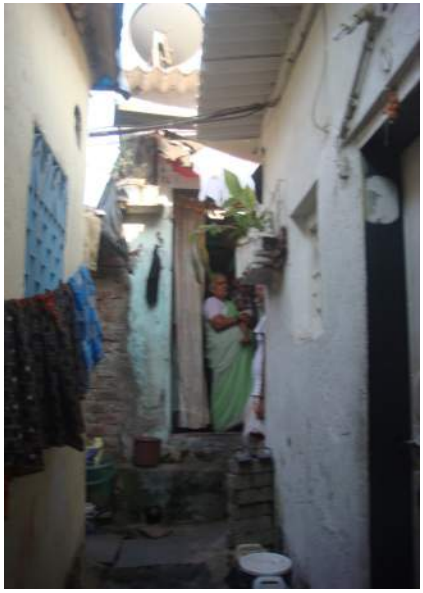
BMC tap for water

[1998]
Shared Water Tap between 8 families, INR 150/family every 3 months

Common BMC toilet



[2008]
Safety grill and stair handle
added
Laadi flooring, Metal door
Re-plastered bathroom partition
Cost: INR 30,000
Financing source: Savings



[2005]
Common BMC toilet rebuilt
under MSDP program

2.2b Dwelling Transformations

Goregaon East
BMC Colony, Dindoshi Vasahat, E-2

[1984]

10'x15' Plots provided by BMC
Structure built on mud floor
Cost: INR 500

[1984-86]

Bamboo, Metal sheet walls, Mangalore tile roof, Mud floor
Cost: INR 15,000
Financing source: Savings + borrowed money

[1992-93]

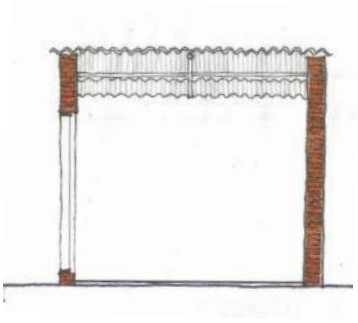
Half walls built
Cost: INR 10,000
2 month labour + sweat equity

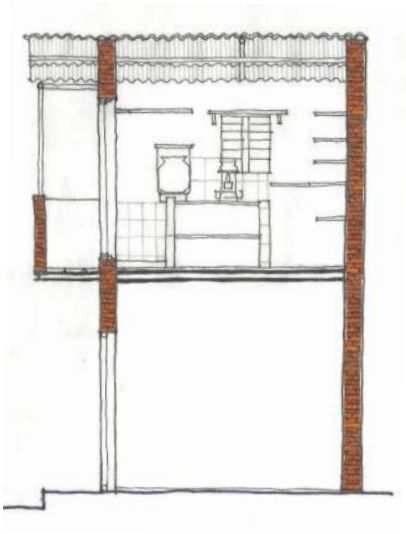
[1991]
Electricity meter obtained

Common water tap by BMC

Open defecation

[1992]
After people began improving their homes, BMC provided a common toilet





Several house-holds began up-grading together

[1993]

Full brick walls, cement-sheet roof, koba flooring
Cost: INR 11,500
Materials bought whole-sale with other house-holds also upgrading

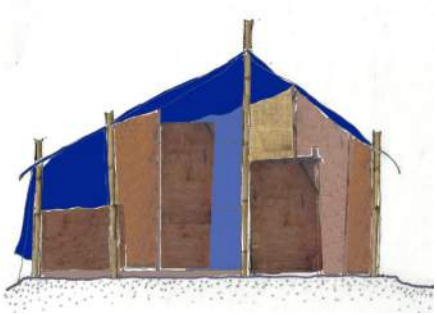
[1997]

G+1 structure built
Laadi replaces koba
Metal Roof re-used
Bath and Kitchen on both floors
Grills on all windows
Cost: INR 40,000
Paid for with Husband's pension
Labour + Sweat Equity
Ground floor given on rent

Individual water tap obtained 7-8 years back, INR 5000 for tap, INR 3500/6months on water bill, Water filled from GFL and brought up in buckets.

2.2b Dwelling Transformations

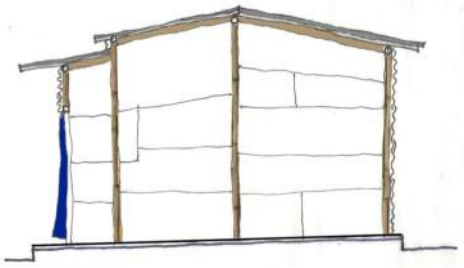
Goregaon East
BMC Colony, Dindoshi Vasahat, E-2



[1986]

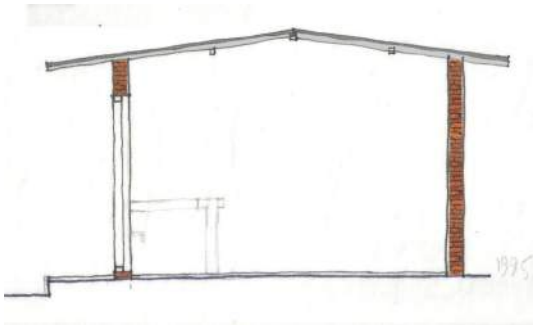
10'x15' Plots provided by BMC, Temporary structure built
Cost: INR 500
Plywood re-used from crates (bought from go-down closeby)
Height of structure 10'

Plywood damaged during mon-soons



[1989]

Second hand metal sheets used for roof & walls , Koba flooring



[1995]

Brick walls, Cement sheet roofs, Laadi flooring, Bath inside
Financing source: Cosplan loans

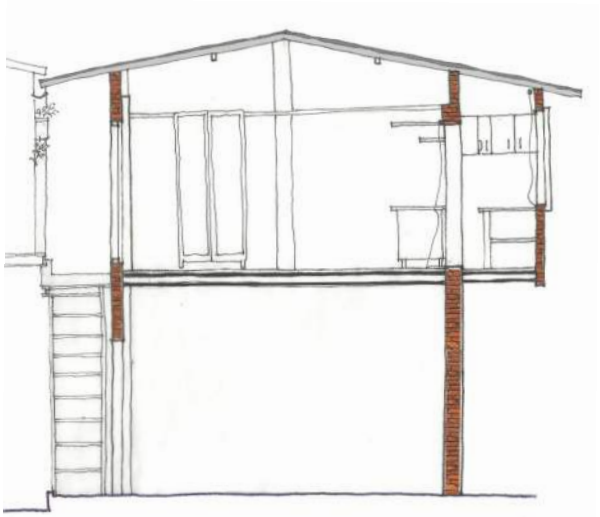
[1991]
Electricity meter obtained

Common water tap by BMC

[1993]
Individual water tap

Open defecation

[1992]
BMC provides a common toilet



[2002]

G+1 structure built
Financing: INR 50,000 deposit from potential renter
Outside contractor

[2007]

Balconies on either side used for bath and kitchen respectively, structure height increased to rid hot air
Cost: INR 20,000
Financing source: Renter deposit

2.2b Dwelling Transformations

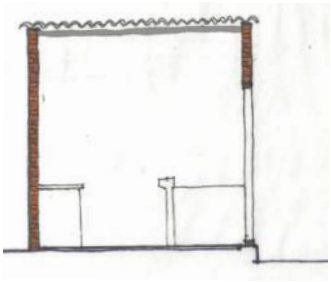
Goregaon East
Jai Bhim Nagar, Vadke Compound

[1993]
Bought Land: INR 20,000
Built House: INR 5,000
Known labour so free

Monsoon repairs for Rs.300-500 yearly

Water bought for INR 40/month, well used for non-drinking water

Rain water inside house lead to electric shock prompting changes

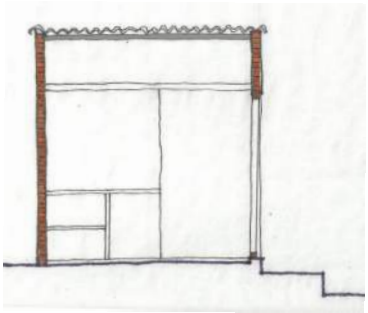


[1999]
Height of 10', Brick walls, Mori, Kitchen
Cost: INR 35,000
Financing source: Cosplan loan of Rs.13000 + borrowed

Electricity meter fitted for INR 1500, Bill INR 550/month

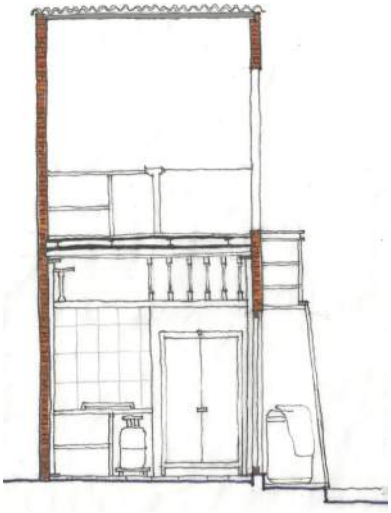
[1995]
Common Water tap – INR 2000, shared by 9 families but located far away and had little water

Privacy adult daughters



[2008]
Mezzanine, Bath, Kitchen, Tiles over counter and on floor
Cost: INR 7,000
Financing source: Loan taken from Swadhaar organization for Rs.10,000 at 5% interest

Closer Individual water tap provided – INR 9000, Bill is shared by 9 families.



Children of marriageable age

[2010]
Floor added with mori and kitchen
Cost: INR 70,000
Financing source: Loan from Mahila Milan, Friend
Rent Rs.1500/month for one year to repay loan, shared electricity bill

[2011]
Plain tiles on ground floor
Cost: INR 9000
Financing source: Money won from Bhishi group

2.2a Settlement History

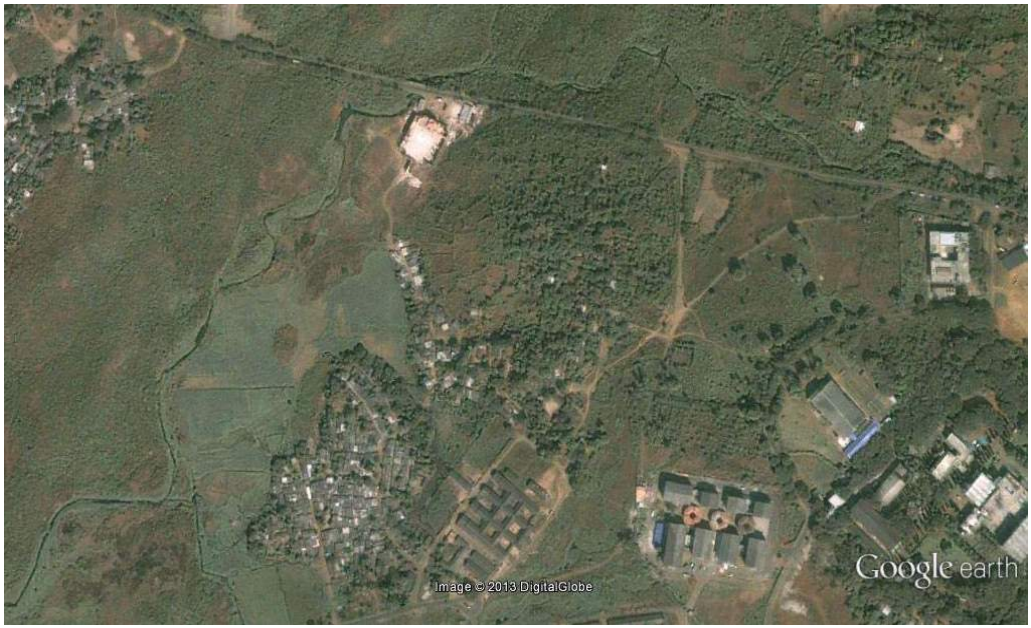
Goregaon East
Near Aarey Colony

1971

Tribal Area where only 5 households resided here, open land surrounded by mountains

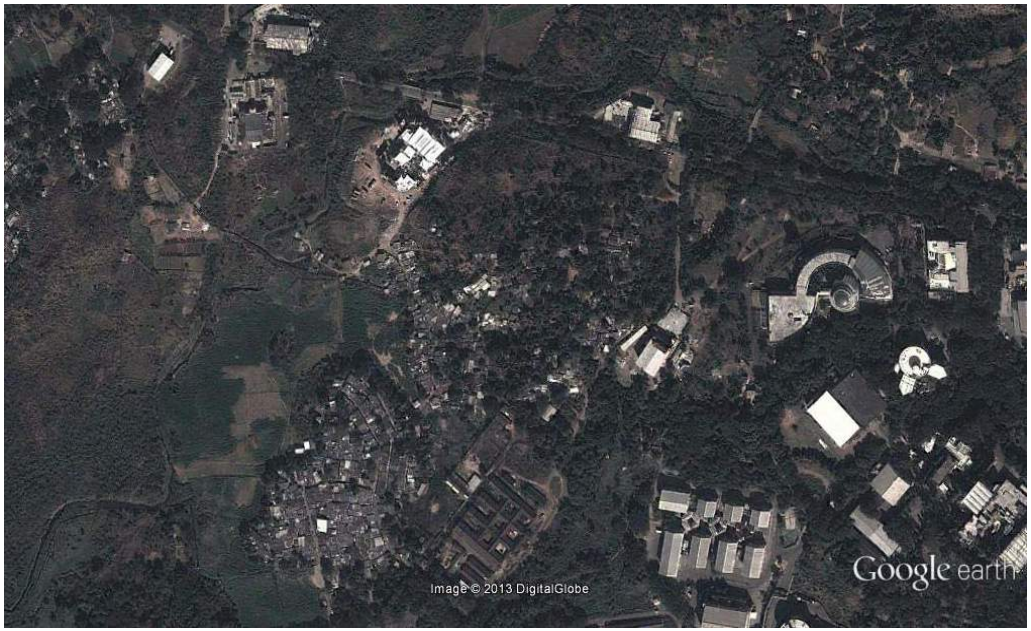
1975-onwards

Film City Expands into their territory and the original inhabitants and newer households (non-tribals) are moved to a plot closeby
No water, electricity, road
Open defecation



[2000]

vi.

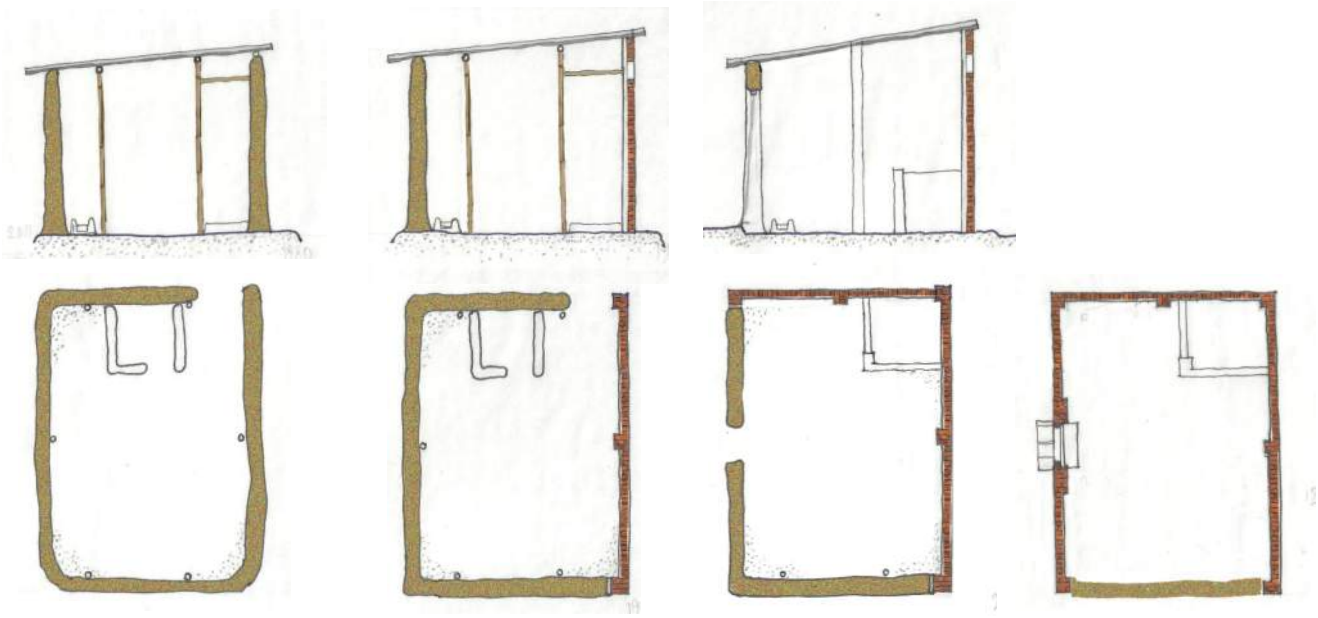


[2012]

vii

2.2b Dwelling Transformations

Goregaon East
Near Aarey Colony

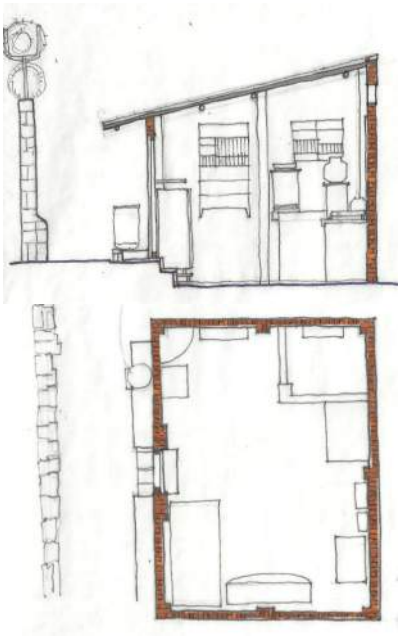


[1980]
House of mud and wood,
tin roof, Mori inside
Cost: INR 500
Mud obtained from jungle

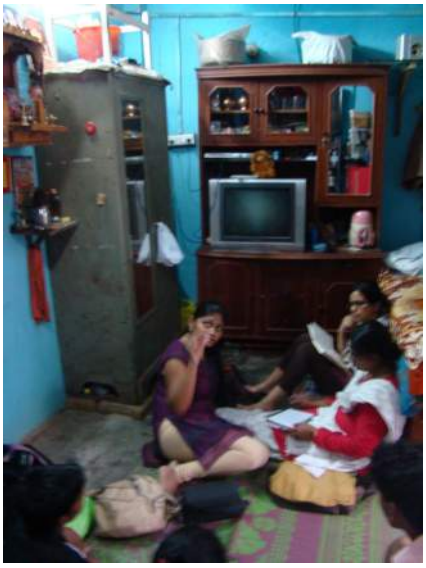
[1999]
One Brick wall built
Cost: INR 7000
Financing source: Savings

[2000]
Second Brick wall built
Cost: INR 5000
Financing source: Savings,
Bricks obtained from film
city

[2002]
Third Brick wall built
Cost: INR 4900
Financing source: Savings



[2006]
Fourth Brick wall built by sharing with neighbor, Koba flooring done
Cost: INR 3000
Financing source: Savings



[2011]
Kitchen platform added, Bath area renovated

2.3 Stages of inhabitation and transformation

The transformation of a dwelling may be understood as three distinct phases[5]: accessing land, setting up a basic shelter and incremental changes to the house.

Land: Access + Tenure I Vulnerabilities + Opportunities
Each of the case studies represents a different land tenure situation in the city (Table A). The first occupation of land by a dweller is in those areas that have kinship networks, access to jobs, transport and sometimes, on land that the formal sector will not occupy due to issues of ownership of land, regulatory challenges or environmental reasons. These areas range in vulnerability from settlements on pavements, along railway tracks, drainage lines, or on hillslopes to those squatting on private or government owned land. It appears that most initial choices of where to live are not based on future prospects to get secure tenure, in the sense that households did not foresee if they would be regularized or face evictions and so on.

Over a period of time, the land acquires a historical narrative, filled with vulnerabilities in the form of evictions or environmental hazards and sometimes even produce opportunities in the form of relocation or regularization, that begin to shape the long term investments made by households in their homes. The manifestation of vulnerabilities and opportunities determine the current consolidation of the house. The progression of investment changes with respect to notions of tenure that are explained further in section 3.1.

The stages of housing improvements or housing consolidation may be viewed in two steps —the basic shelter and the incrementally growing house.

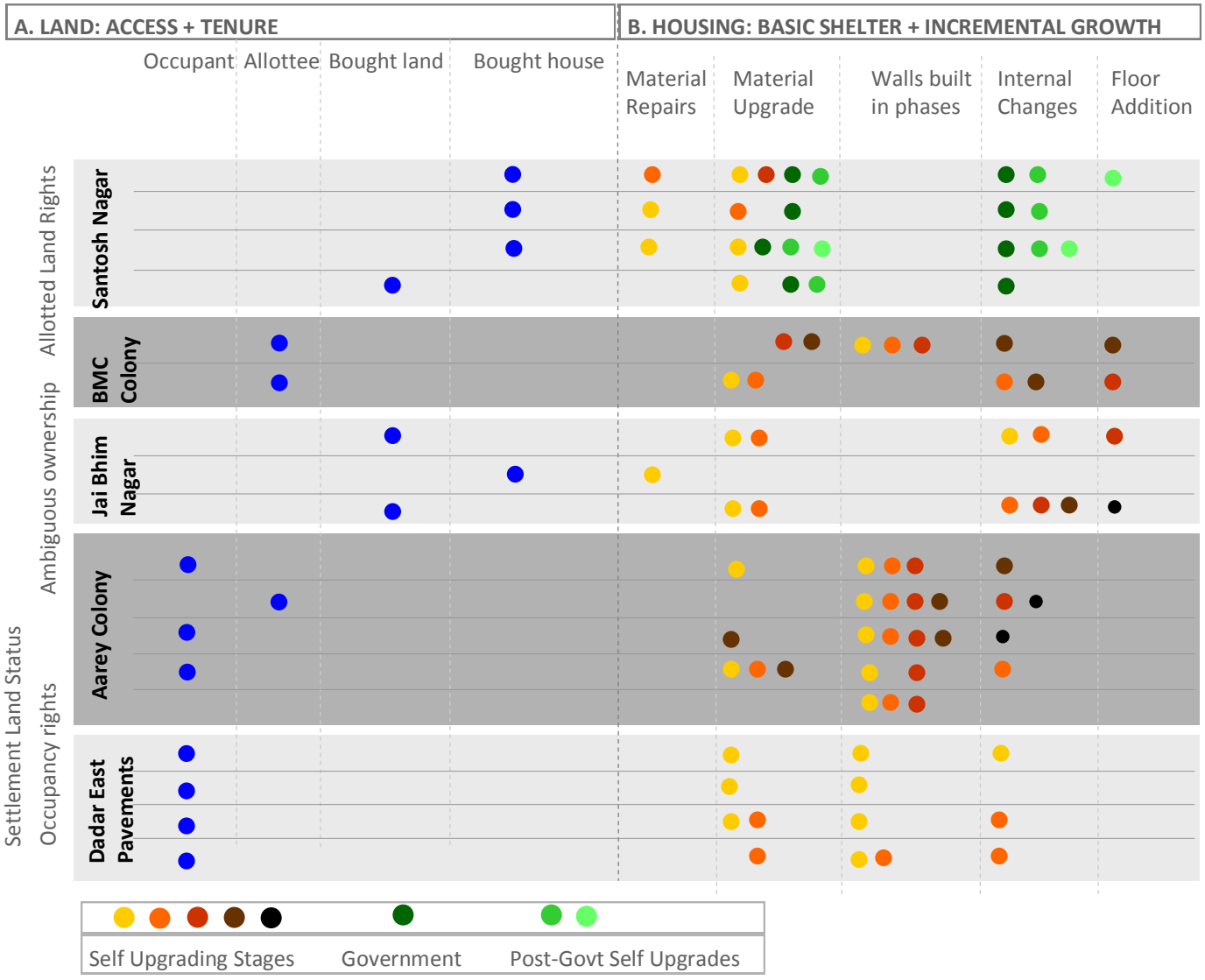
Basic Shelter
The first act of occupation, regardless of secure tenure, is to demarcate the space of the house and to protect the household against elements of the weather. The first shelter is made of mud, bamboo or tin sheets for walls, tin or plastic sheets for the roof and Cow dung/mud or *Koba* for the flooring. It is a single space with no subdivision for activities. Food is prepared on a wood or kerosene stove placed on the floor inside or outside the house. Amenities are usually non-existent at this stage.

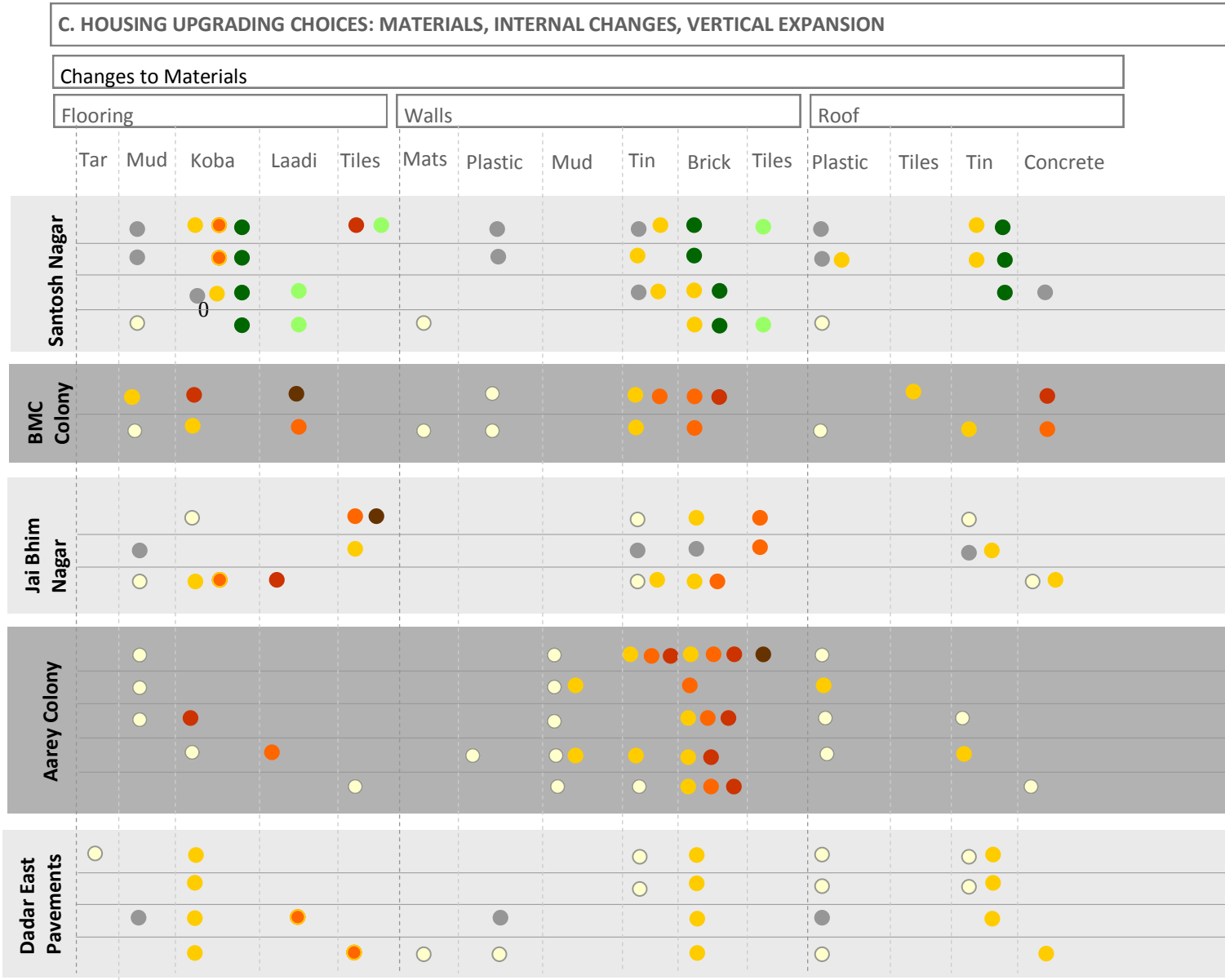
Incrementally growing House
Once the basic shelter is established, the subsequent changes made to the house by the householder are known as incremental growth. The change to the house may be at several levels: a change in the materials used by replacing with the same or upgrading to a better material, a partition of space within the house or addition of space externally.

Table A indicates the settlement land tenure status and the point at which the household entered the settlement.

Table B indicates the typical stages of growth in a house based on the Mumbai case studies.

5. Greene, M., & Rojas, E. (2008), "Incremental construction: a strategy to facilitate access to housing", *Environment and Urbanization,* Vol. 20 (1),pp. 89-108


A. LAND: ACCESS + TENURE
B. HOUSING: BASIC SHELTER + INCREMENTAL GROWTH
Occupant
Allottee
Bought land
Bought house
Material Repairs
Material Upgrade
Walls built in phases
Internal Changes
Floor Addition
Settlement Land Status
Occupancy rights
Ambiguous ownership
Allotted Land Rights
Santosh Nagar
BMC Colony
Jai Bhim Nagar
Aarey Colony
Dadar East Pavements
Self Upgrading Stages
Government
Post-Govt Self Upgrades


C. HOUSING UPGRADING CHOICES: MATERIALS, INTERNAL CHANGES, VERTICAL EXPANSION
Changes to Materials
Flooring
Walls
Roof
Tar
Mud
Koba
Laadi
Tiles
Mats
Plastic
Mud
Tin
Brick
Tiles
Plastic
Tiles
Tin
Concrete
Santosh Nagar
BMC Colony
Jai Bhim Nagar
Aarey Colony
Dadar East Pavements


Internal Additions/Changes
Vertical Expansion
Mori
Bath
Toilet
Kitchen
Partition
Mezzanine
Floor
Height
Bought house
Built Basic Shelter
Self Upgrading Stages
Government
Post-Govt Self Upgrades

2.4 Characteristic elements of an incremental house

Commercially produced elements available at wholesale were found widely used by households.

Jaalis

Water storage containers

Staircases

Doors

Mezzanines

Flexi-roofing

Partition Walls

Storage

Balconies









INSIGHTS:
FACTORS IMPACTING INCREMENTAL GROWTH

03

3.1 Factors affecting the extent of housing improvements: Levels of Tenure

Investments in the house were found to be made in direct proportion to the sense of tenure security specifically the involvement of corporators and access to finances. The following section discusses these factors and how they impacted the extent of investment by households towards housing improvements.

We use the Payne-Durand[6] classification to describe the types of tenure situations identified in the settlements included in this study and the types of changes seen in the houses in order to co-relate tenure security to the extent of investment in housing.

Insecure Tenure (with Occupancy rights)

Insecure tenure covers a wide range of situations, from illegal occupation to various forms of tolerated occupation, as well as occupation legitimized by customary practices but not considered as legal by government or local authorities. In extreme cases, it may include land or property which could be subject to claims for legal recognition, but where such status has not been officially recorded or where the adjudication of claims has been denied.[7]

The Dadar (East) pavement dwellers fall in the category of households with insecure tenure. The pavement dwellers faced persistent evictions by the city all the way up until the mid-80s. In 1981, after one such massive eviction drive, NGOs in the city took a PIL (Public Interest Litigation) petition to the Mumbai High Court, against the municipality and state government evicting pavement dwellers in the midst of monsoons. This case was then referred to the Supreme Court of India. . In 1985, the Supreme Court of India ruled on the matter in the case of Olga Tellis v. Bombay Municipal Corporation. The demolitions were suspended and the residents returned and rebuilt their homes on the pavements. While the ruling demonstrated sympathy for the plight of pavement dwellers, it also determined that the municipality was obliged to keep the pavement clear for the good of the city and that this obligation superseded the pavement dwellers' claims to life and livelihood. The city was to give prior notice to the eviction date which was set for November 1, 1985. Much of the organization of pavement dwellers by NSDF and MM began in 1986-7, which led to organized networks of pavement dwellers stopping evictions and seeking dialogue with the state for alternatives. The presence of the NSDF and MM groups within some of the pavement dwelling areas encouraged households to make investments in their homes beyond the basic shelter but these investments were limited spatially in size and width due to the location on pavements. It was also restrained by a continued fear of evictions by the Municipal Corporation.

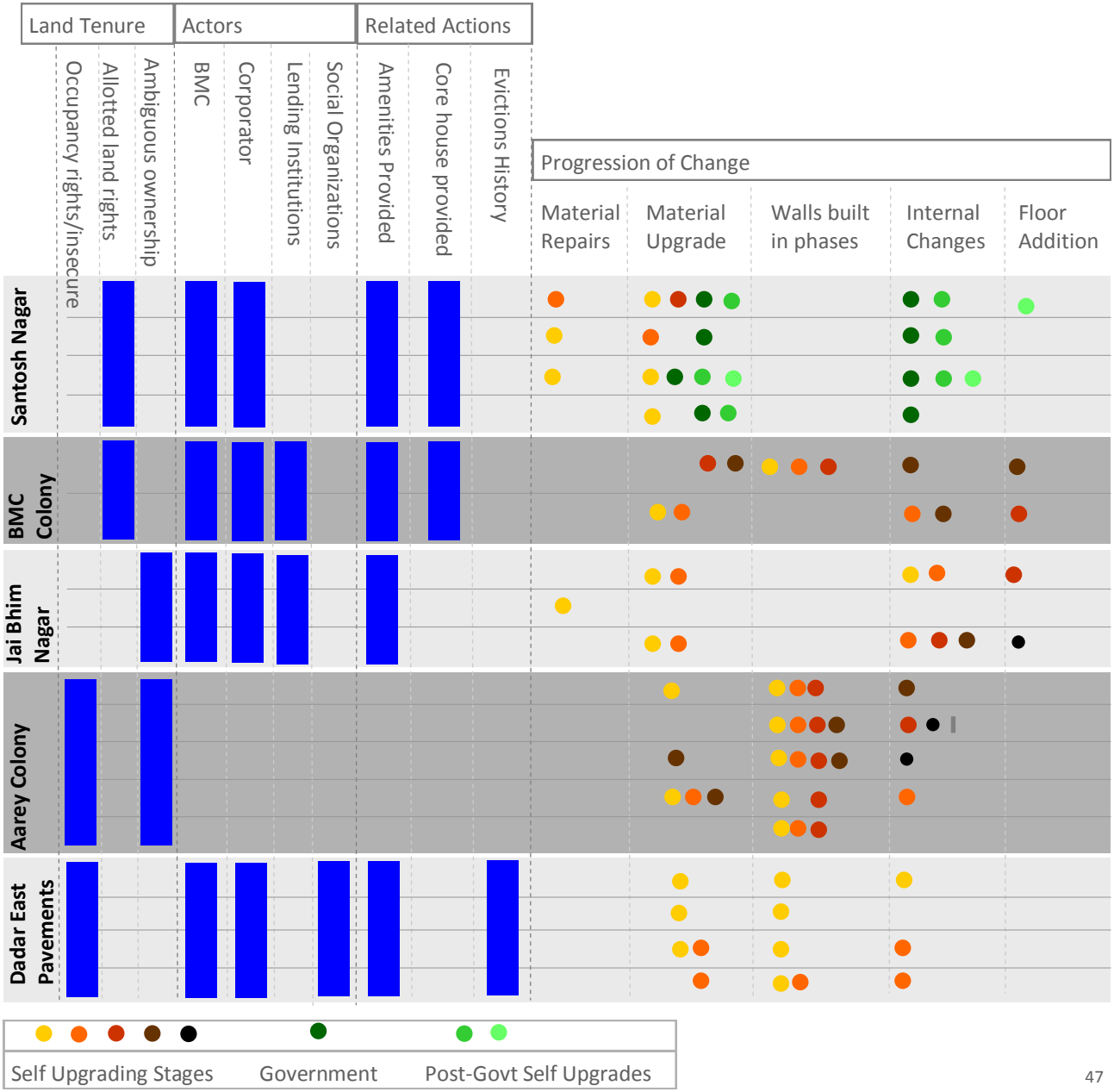
Customary rights to insecure tenure

Customary land ownership refers to the communal possession of rights to use and allocate agricultural and grazing land by a group sharing the same cultural identity. A single person usually administers on behalf of the group.[8]

The settlement near Aarey colony, Goregaon (East) comprises of inhabitants who were moved from their original location where they held customary (tribal) land rights. In their new location, however, the rights they hold are unclear and land has been encroached by other households as well. The Aarey colony dwellers have not faced evictions, and a community toilet and water taps

6. Payne, G. and Durand-Lasserve Alain (2012), "Holding On: Security of Tenure – Types, Policies, Practices and Challenges", Research paper prepared for an expert group meeting on Security of Tenure convened by the Special Rapporteur on 22-23 October
7. Ibid. p.9
8. Ibid. p.12

D. RELATING LEVELS OF TENURE SECURITY TO PROGRESSION OF CHANGE



have been provided over time.

Secure Tenure (Co-operative tenure)
Shared ownership including cooperative tenure and community land trusts is one where ownership is vested in the co-operative or group of which residents are co-owners.[10]

Santosh Nagar, H-Sector and BMC colony, Goregaon being government organized relocation allotments from the 80s, provide households with a legal title and an assured security of tenure. Consequently, the provision of amenities over a period of years by the local government and the implementation of a Government scheme (VAMBAY) by the local corporator in Santosh Nagar has led households to invest further in making material changes and vertical expansion.

De Facto Tenure Security, Non-formal Tenure
De Facto or Non-formal tenure is when tenure security is perceived rather than how it is legally conferred or legally recognized.[9]

In Jai Bhim Nagar, Goregaon,land was owned partly by the Municipal Corporation and partly by a private land owner. At some point in its history, the privately owned land was sold to a land dealer who parceled it and sold it to lower income households. Two of the households interviewed had bought land and one had bought the house but the ownership of land remains ambiguous. The differences in investment in their houses in apparent, with the two households that own the land making many more changes. Subsequent investments in the settlement by the BMC, Municipal Corporators and two micro-credit lending institutions (Cosplan and Swadhar) has however resulted in de-facto tenure security. Therefore, despite an ambiguous hold over the land, the improvements to the houses are apparent although not as extensive as other settlements with higher levels of secure tenure and access to financial resources.

Housing improvements were observed in all settlements despite the varying levels of tenure security. Yet, there were differences in the extent to which these changes took place (Refer Table D). The differences in the extent to which a household invested in their house could be explained by the varying levels of eviction history and support received by households in terms of active politicians, corporators, presence of social and micro-lending organizations. This is understood as the perception of secure tenure.

Another observation was that there was a time lag between the various changes (Refer Table G) and this was found directly linked to household access to finance (Refer Table E), explained in the following section.

3.2 Factor influencing time lag between changes: Access to Finance

Households were able to access only small amounts of money at any given time to invest in their houses. Generally, as observed from the case studies, households put in their own savings to make the initial changes and then began to join several sources of finance to their own savings as the changes increased in complexity and cost. This explains the longer gap between changes to the house as households looked for ways to consolidate their finances. Below, we elaborate on the sources of financing used by households in our case studies.

9. Ibid. p.23
10. UN Habitat (2004), *Urban Land for All*, United Nations Human Settlements Programme, Nairobi

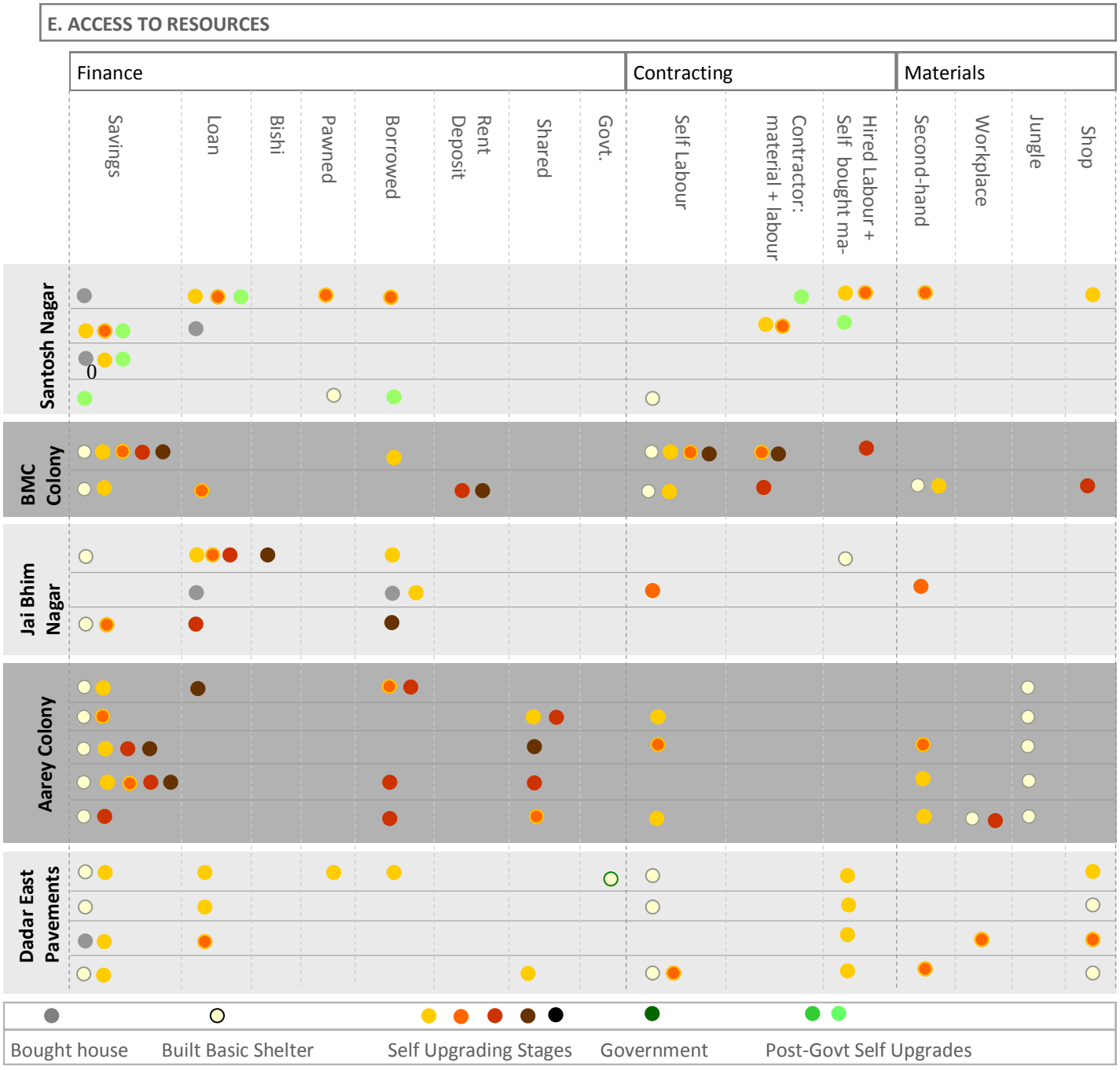
External sources of financing for housing improvements in informal settlements:

Main financial sources:
By and large, there was no access to formal finance, so the most common sources of loans are:
Relatives/Friends: House members borrowed from family or close friends, repayments were usually without interest.
Employer loans: Loans were provided by employers at very low or no interest rates which were repaid through monthly cuts from the salary. Although this mimics the manner in which Banks are lending to formally employed borrowers, with secure wages to cover installments, the amounts here are much smaller.
Micro-finance lenders: In our case studies, three organizations provided loans to the households: Cosplan, Swadhaar and *Mahila Milan*. While Cosplan and Swadhar are micro-credit organizations, *Mahila Milan* blends savings with loans secured for its members through SPARC. Each organization provided short term loans in the amounts of Rs.10,000-Rs.30,000 with lower interest rates than the market.[11]
Bhishi: Households formed groups of 10 to 20 members who pooled in a fixed amount of money each month from which a lottery was held at the end of a month enabling one person to receive the entire lump sum. This continued the following month with the person who had already won contributing to the fund but was not part of the lottery. In this way each member got a lumpsum amount once a year or cycle.
Pawned Jewelry or household effects: If no other possible access to loans were available, families pawned gold and silver jewelry or old traditional utensils, with interest charged as well.
Renters: Some households built an additional floor space in order to accommodate a renter as an additional source of income. The rent deposit (usually 10 months of rent taken in advance) was used to build the additional floor; regular rent then provided income for further changes to the house when and if needed.
Shared expenses: During construction of shared walls, neighbours split the expenses.

Construction and Material financing:

Scavenged Materials: Most materials at the initial stage of house building were obtained from surrounding forests, markets or the pavements, or from discarded materials from nearby construction sites.
Wholesale Material purchase: When several households decided to upgrade at one time, materials were bought wholesale and therefore at cheaper rates. This encouraged other families to make improvements at the same time as well.
Employer give materials: Materials were also provided by employers in rare cases, possibly attributed to a surplus in their own construction activities.
Shops: At later stages, hired contractors obtained materials from shops that stock second hand material, the largest supplier of materials to informal settlements.
Sweat equity: Most households used known local contractors (sometimes relatives) to build their houses and rates were therefore much lower. Sweat equity was used for smaller jobs and when the household member was available to contribute.
Table E refers to how households procure resources needed for construction (that is, materials and contractors).

11. The value of the US$ to Indian Rupees ranges presently from INR 58 = 1US$ to INR 63 = 1 US$.


E. ACCESS TO RESOURCES
Finance
Contracting
Materials
Savings
Loan
Bishi
Pawned
Borrowed
Rent Deposit
Shared
Govt.
Self Labour
Contractor: material + labour
Hired Labour + Self bought ma-
Second-hand
Workplace
Jungle
Shop
Santosh Nagar
BMC Colony
Jai Bhim Nagar
Aarey Colony
Dadar East Pavements
0
Bought house
Built Basic Shelter
Self Upgrading Stages
Government
Post-Govt Self Upgrades

3.3 Factors impacting the type of change and material choices

While tenure (defacto or secure) impacts the progression of change and the confidence of the household to invest in their homes and available finances impact the time gap between changes, the articulation of the house in terms of materials, design and construction was found to depend on several other factors discussed below. Households work within the choices available in terms of materials and construction to lead to the evolution of a house 'type'.

Table E lists out the environmental, social and financial factors that impact the sequence and/or priority with which the choices occur (for example, the choice between upgrading a flooring material or a roof first).

Table F provides the range of options from which households make their choices regarding materials

3.3.1 Contextual factors

Site context
Initial occupation and consequent growth of a house is restricted within pre-existing conditions related to the site. For instance, on the pavements, the width of the sidewalk restricted hutment widths to about 4-5 metres and height restrictions did not allow vertical growth beyond 14 feet. At the initial stage, structures restricted themselves to the height of compound walls which usually form one side of the structure.
In allotted plots, the size of the built form is predecided. For instance, in Goregaon, the municipality provided 4 by 5 feet sized plots onto which households were relocated. Households built edge to edge on the plots to maximize the use of space and then consequent growth was manifested as vertical additions.

Evictions
Federation observation is that maximum sub-divisions occur after evictions – where ever possible they create new negotiations for subdivisions. And often the size of the house is an indication of internally managed subdivisions to create separate space for expanded family or space "sold" to others or rented for additional income.

Local resources
Households worked within local contexts and practices, using commonly available materials and known contractors. Our case studies show that materials for the basic shelter were procured largely from the surrounding environment and local shops. In the initial stage of building, these materials ranged from recycled plastic, mud, bamboo, wood and tin or asbestos sheets. At a later stage, households used tin sheets, bricks, plastic and tiles. Materials were largely procured from second hand markets. Often, households also invested when other households in the settlement were upgrading, thus allowing the purchase of materials at wholesale rates.

Most households have had some experience in construction as unskilled load bearing jobs on construction sites are easily available for short periods to most migrants. The basic shelter, being of simpler materials and construction technique, was usually entirely built by the household themselves. However, during later stages of upgrading, households relied on contractors to procure material and provide labour. This was also attributed by several households to the fact that members in the family had to attend to their regular jobs and preferred handing over the construction to a local contractor.

Given the quality of material and contracting choices available, households replaced and repaired the same material several times. For example, *koba* was used in the initial stages as a cheaper option but was not well done by contractors and cracked easily resulting in a

redoing of the same many times. Tiles therefore, are a preferred option by households as they do not depend on the skill of a contractor to be laid and are easier to maintain. Households often re-did the brickwork as well, as poor quality and laying of bricks resulted in faster wear and tear.

Amenities

One of the findings of the study is that housing improvements take place regardless of amenities. For several households, particularly, those with insecure tenure, water and electricity is informally purchased. Households may obtain amenities through theft and end up paying a lot more than if they were included in the formal sector.[12]

The legal provision of water connections, common toilets and electricity or sewage connections impacts specific types of investment in the house such as adding a kitchen sink or a *mori*. Additionally, household investments in these kind of improvements come with the assurance that legal provision of amenities by the city to an 'informal' settlement is a form of regularization.

In Santosh Nagar, Goregaon, the provision of amenities came in subsequent years after the relocation of households to plots in 1984. By that time, households had already begun making incremental improvements to their homes. The municipal corporation provided a common toilet (1985) and water taps (1989) and the corporator provided roads (1990).

In Jai Bhim Nagar, the land tenure situation is ambiguous as parts of land are owned or leased by households who were distributed land in piecemeal by the earlier landowner and part of the land is owned by the BMC. Yet, amenities have been provided to all households regardless of tenure by the BMC, (toilets, water taps and electricity in 1992) and main roads paved by the corporator.

As settlements were gradually connected to city infrastructure, households responded by making an amenity upgrade within their homes. For instance, when the corporator provided common water taps on the pavements, several households built *moris* within their homes. Settlement amenities also impacted investments at the larger settlement level. The provision of certain amenities in Jai Bhim Nagar for example resulted in households putting in their own money to obtain individual water connections and pave the internal roads.

3.3.2 Financial capacity

Financial access also impacts the choices households make in terms of materials and the type of change. Despite a range of available resources, households progressed gradually to better quality materials as their financial capacity increased. For instance, households prefer the use of tiles but they first began by using *koba*, followed by *laadi* in the next stage of upgrading and finally used tiles. The progression was the same with walls as access to finance determined how these were built. Walls usually began as temporary material partitions and then moved to brick. The amount of finance available decided if the walls went up all together, one wall at a time or as half walls followed by full walls at a later stage. This also appeared to be dependent on perceived tenure security and negotiations with neighbors, should the walls be shared.

12.Graham, S., McFarlane, C. & Desai, R. (2013), "Water wars in Mumbai", *Public Culture*, Vol. 25 No. 1 69, p.115-141

3.3.3 Need based factors

Protection from the Environment

Informal dwellers built initially out of their need for survival against the environment. "From a household's point of view, the primary function of a home is to provide protection against the cold, rain, sun and wind and reaching these standards is the first priority after accessing land"[13] Yet, insecure tenure and lack of finances, proved to be prohibitive factors. The only investment that was made under these circumstances is in setting up a basic shelter of simple, easily accessible materials to protect from elements of the weather and an annual expense in replacing materials damaged by wear and tear.

Once security of tenure was established (through formal allotment or de facto tenure), households sought a more permanent response to environmental factors and thus begins the upgrading of material and physical articulation of the house.

Initially, existing land (pavement or mud) provided the base for the house and subsequent upgrades saw the addition of a plinth and a flooring material to protect from rodent or water infestation. Roofing is another major barrier to the environment that households invested in stages as was financially feasible, thus progressing from plastic to tin sheets to cement slabs. Walls were built gradually, beginning as mud or plastic or gunny sheets and finally ending up as brick walls.

Social factors: privacy, safety, family growth

One of the most essential characteristics of small spaces with many residents is privacy. Households often comprise three generations with parents, grandparents and children, or two siblings with their families. So, the addition of walls or building a *mori* within the house was related to the presence of an adult daughter or a new daughter-in-law. The accommodation of a growing family also led to additions of a partition wall, mezzanine, another floor, or use of balcony areas as sleeping or kitchen spaces. Sub-division of a house, where possible also took place over time to provide a house for each of the grown sons or older mother/parents. The position of a window in these houses is always higher than eye level, to allow for privacy and safety from the prying eyes of neighbors and street youths.

Flexibility and Dual use: Storage and Growth

Almost all changes subconsciously worked within the understanding that an element or space in the house had to serve two or more purposes. This was usually to serve its primary purpose and then to serve the essential purpose of storage and eventually to be able to adapt to incremental changes. Thus, partitions serve as barriers and as storage spaces. Windows with thick sills were also used for storage. Large windows were avoided as they took away essential storage space from the walls. The mezzanine was used for sleeping, studying or storage at different points in the day. Balconies added space as well as provided an additional space for privacy or separate habitation. Balconies are used in multiple ways, as semi-open sleeping areas or retrofitted with a bath and kitchen in order to free the internal space of the house.

With dense footprints in slums, the possibility of expanding horizontally is limited so the only expansion and elasticity is vertical. Roofs were seen to be tin or asbestos sheets that can be removed to add a mezzanine or an additional floor. Sloping tin roofs allow ease of vertical expansion, and in the heavy monsoon, also ensure that water drains off the roof easily. In many settlements roofing is also used as a storage space.

In incremental expansions, staircases play a vital role.

13. Greene, M., & Rojas, E. (2008), "Incremental construction: a strategy to facilitate access to housing", *Environment and Urbanization,* Vol. 20 (1),pp. 97

This is another highly standardized and adaptable element that any household can buy or order. It comes with a hand bar or without it, and its angle and steepness is a function of the space available. In many instances, initially stairs are made with metal, and later when spaces around the stairs can be "encroached" it is bricked up and spaces around it also used.

Income generation

Houses are often upgraded to add a floor in order to accommodate renters. Rent money was taken in advance to pay for this expansion of space. For instance, households in Jai Bhim Nagar and BMC colony built additional floors with the help of rent deposits and eventually placed renters in these extensions which generated additional income for other upgrades.

3.3.4 Aspirations and the urban poor

Just as the initial act of occupation and shelter building reflects the need to survive in a hostile environment for the poor, the subsequent acts of housing investments made periodically (incremental upgrading), begin to transcend need and reflect the aspirations of families. Households, neighbourhoods and cities change and exposure to what others do changes aspirations and the possibilities of exploring other choices expand. As the composition of the house changes, employment possibilities move and with that options and possibilities also change. As a house changes over time, investments in certain features begin to reveal a difference between those made by necessity and those made to serve the growing aspirations of a family.

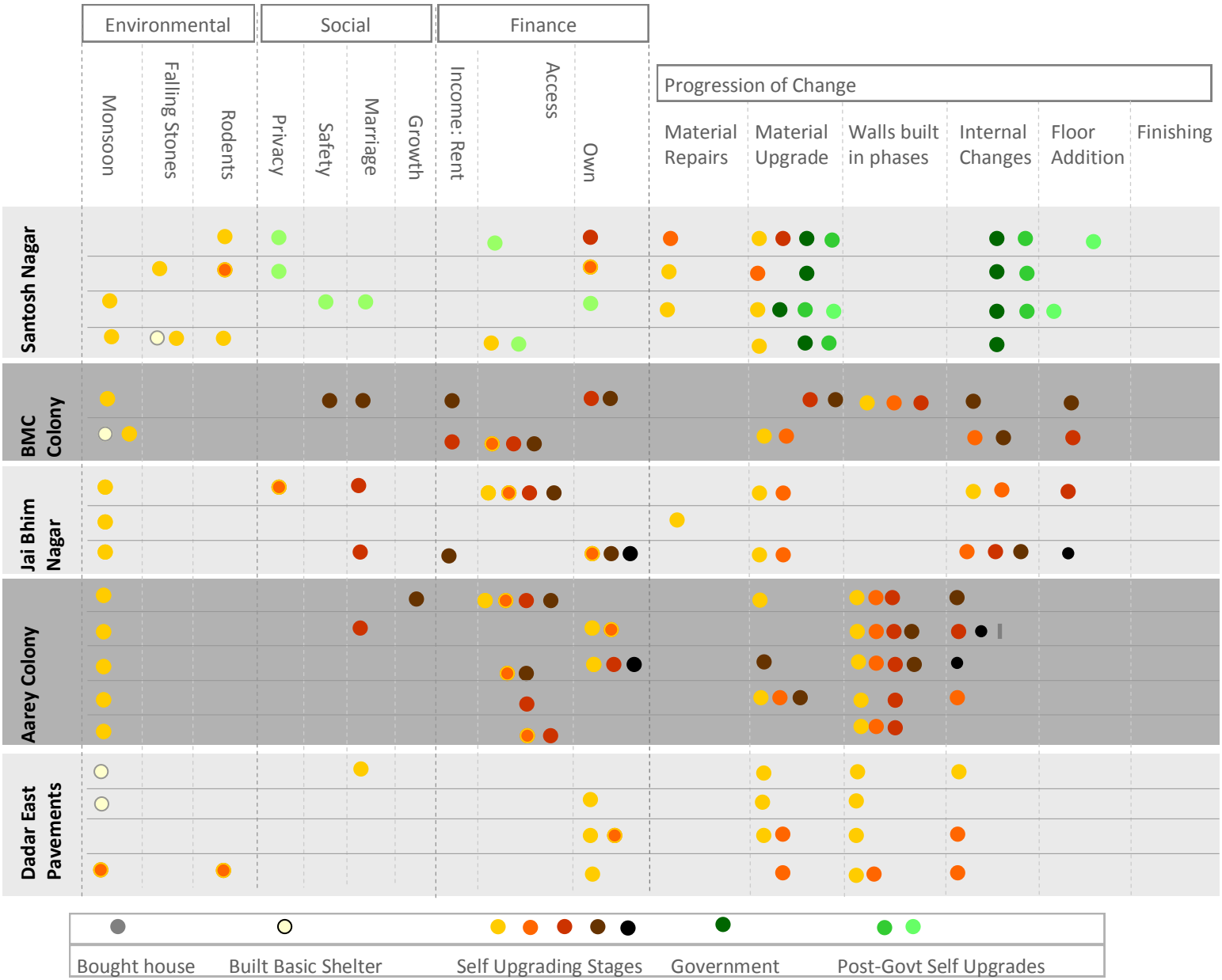
The initial shelter is made with temporary material, easily accessible and replaceable, when the risk of eviction or monsoons persists. As the household's sense of security increases, investments are made to make the house permanent, to withstand the environment and to respond to other pertinent needs. These needs range from social desires for privacy or safety to the accommodation of a growing family and its multiple spatial requirements. Needs are translated into a house that has inherent characteristics typical of an informal settlement. The articulation is largely controlled and made visible by locally available resources. It is difficult, however, to distinguish at what point aspiration overtakes need.

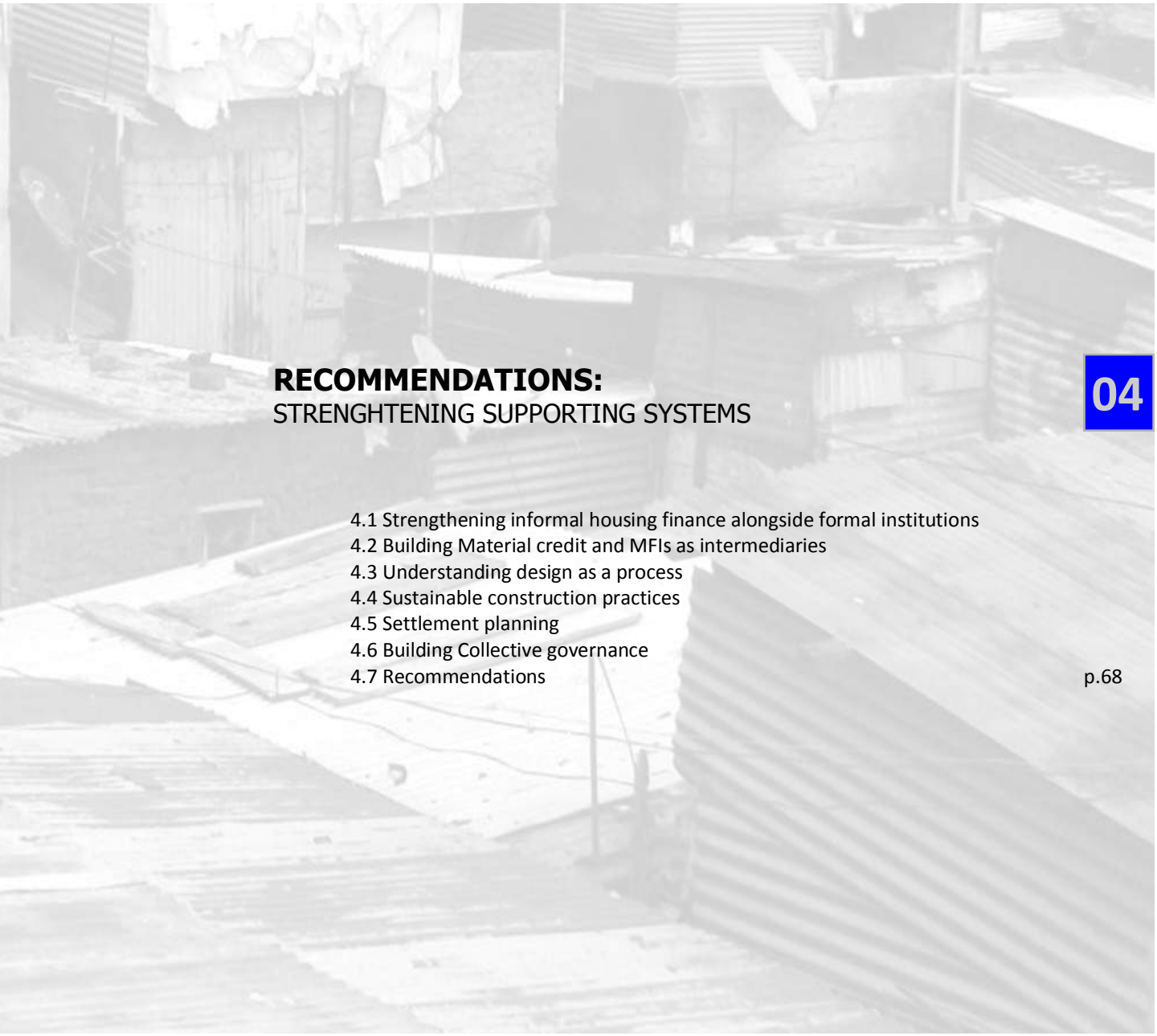
Replacing a cheaper material such as mud with a costlier material such as cement *koba* or *koba* with tiles fulfills the need to seek a permanent and qualitatively better flooring choice that protects from the environment and is easy to maintain. However, the choice between patterned tile flooring or a plain tile is no longer satisfying a need or meeting affordability levels, but an aspiration and a desire to perhaps replicate the middle class home.

Another item that is increasingly used is the plastic container used to store water. These are placed near the ceiling of the room on a ledge and water filled in buckets from the municipal connection is pushed up by using a small pump to provide "flowing water". The use of these items by others in the neighborhood, or in the homes of the upper income groups where women work as household help, often accompanied by affordability, will lead to a household using them.

As the poor become more upwardly mobile, so do their preferences in materials, construction, space utilization and lifestyle. The imagery of a shelf of shining vessels is a sign of upward mobility as is the transition from a *chullah* to a kerosene stove to a gas stove. The items in the house – from television sets to the detailed articulation of the kitchen space or the overall house itself – all use materials recycled from middle class homes and cheaply available in second hand markets from where the poor source their materials.

F. ENVIRONMENTAL + SOCIAL FACTORS IMPACTING THE TYPE OF HOUSING IMPROVEMENT





RECOMMENDATIONS:
STRENGHTENING SUPPORTING SYSTEMS

04

In the cities of tomorrow, it is important to accept that what cities plan and what people do defines its habitat, demonstrating coherence or distortions. To date, cities have tried to ignore, demolish or penalize incremental housing. This exploration in understanding incremental housing is to facilitate acceptance that it is a habitat form that will not vanish because it does not fit into formality, yet it needs to develop many elements to produce safety, public and private accountability and address the many issues that separate formal from the informal.

The study found that one of the factors that encouraged and sustained household investments in upgrading was the provision of de-facto tenure. De-facto tenure relates to the provision of amenities, access to finance, and the active involvement of corporators, municipalities, state provision, lending institutions and social organizations. Thus, the perception of tenure security seemed more critical than the actual provision of secure tenure. Several existing literature on the subject reiterates this finding: "The continuum of tenure rights is linked to the process of housing mobility among low-income households"[14], "Slum dwellers gradually invest in their home improvement even without possessing any legal title of land" (Payne 1989, Razzaz 1993, Varley 1987), "Perceived security of tenure through provision of public utilities by the local government is enough to release investments by households in housing" (Payne 1989, p. 44).

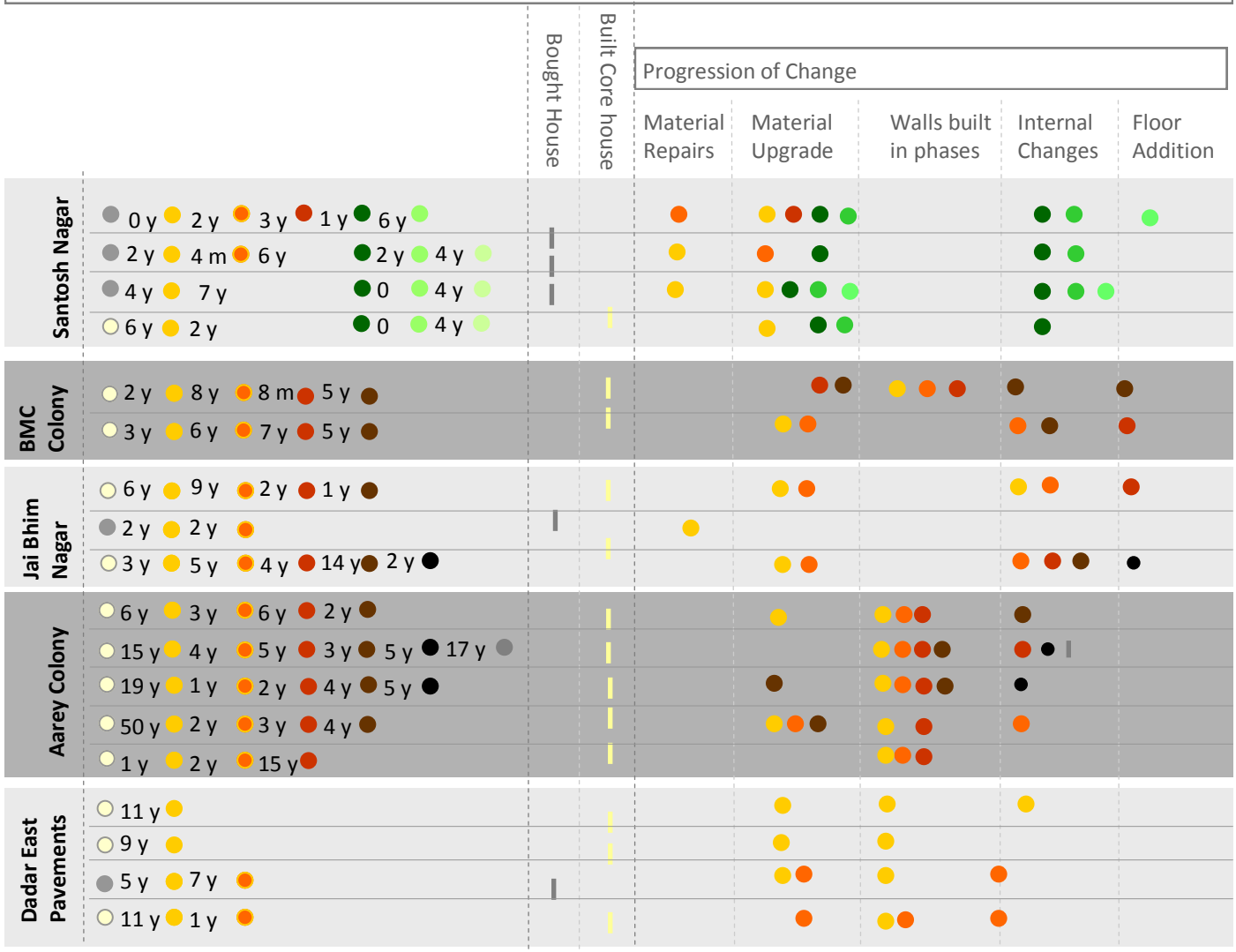
Despite these investments, however, the time lag between changes ranged between 3 to 15 years, with each year adding to the vulnerability of that household. This differential was found across households that sometimes belonged to the same settlement. Often this reality is ignored as all people living in one settlement are assumed to belong to one economic and social cohort which is not true. Household access to finance was found to be largely responsible for this differential time lag, with only about 5% of households being able to invest in the upgrading of their homes. Most others remained at the stage of material replacement and repair.

Consequently, the study identified that there are two distinct categories of change amongst households: recurring and progressive. Recurring changes are annual repairs made to materials and replacement of the same materials over time. Here, there is little value addition to the house and even, one can say, an asset depletion. These households have no resources to invest, a reflection of urban poverty where livelihoods and income make an impact on housing. Progressive change is one where households are able to make that leap to upgradation over time. Even here, the choices are dependent on supports that lie outside the formal systems of financing, construction and material procurement. These informal systems provide the support needed for households to upgrade but sometimes also create barriers and impediments that compromise on the quality of housing and settlement improvements.

Material and construction choices are restricted by availability and affordability often resulting in recurring investments made by households in replacing the same material several times due to poor quality or inadequate knowledge of construction practice. Thus, even for those who can afford to invest in housing upgrading, the knowledge base to support housing choices is lacking. Without strengthening existing informal systems and providing additional support of formal institutional mechanisms and policy recognition, upgrading improvements cannot be effectively scaled up.

14. Mahadevia, D. (2011), "Tenure security and urban social protection in India", *CSP Research Report 05*

G. DIFFERENTIAL HOUSEHOLD INVESTMENTS



Having suggested that incremental upgrading is not a self-sufficient system, but one dependent on several supporting factors that need to be strengthened, it is vital to list some of the mechanisms and/or institutions that need to be engaged more effectively so as to scale up incremental housing.

In our case studies, the pavement dwellers did not see a progression beyond the first two stages of upgrading whereas the Goregaon slums showed a steady upgrading process through all stages. In Aarey colony, all five stages of improvement fell within the same category. For example, plastic or tin or mud flooring was replaced or repaired at every stage of upgrading but no progression was made to get/procure a better material, nor was space expanded either vertically or horizontally. Thus, houses were made of poorer quality materials and households made recurring expenses each year to replace or repair these.

4.2 Strengthening informal housing finance and formal lending institutions

Even settlements with high perceived security of tenure may not necessarily produce investments in housing, depending thus on each individual households' financial capacity. Of the households that did invest, money was required in small amounts for 'incremental' changes to the house. Financing in the formal sector is not available in the quantity needed by households to upgrade incrementally. Conversely, incomes cannot accommodate repayment of even an informal loan. When repayment was possible, financing was inevitably secured through informal means, (Table showing sources of money) which includes loans from employers, money borrowed from relatives/friends, *bhishi* group funds, community collectives, lending institutions, pawnbrokers and so on. Most of these sources were combined with household savings when a family decided to invest in house repairs or upgrades. Some of these forms of financing allow borrowing of small amounts at little or no interest. Others, add risk to an already tenuous situation.

With community access to short-term loans, as in the case of micro credit, households only have control over possible income streams in the short term. Much of the micro credit practices emerge from this realization, and often when micro credit for income generation is accessible households seek an incremental housing loan by the third or fourth loan request. It is the negativity of perception against incremental loans that the same terms of loans are not available for incremental housing loans.

Paradoxically, even secure tenure does not ensure getting a loan from formal financial institutions. A combination of strict regulations about the Non-performing Assets Register at banks, and the banks' inability due to political and management reasons to evict a household who cannot repay the loan means that the people who live and work in informal sectors do not get a bank loan. Also, experiences of those who have taken large medium and long term loans, have found that they keep facing cycles of crisis that demand that they divert money that should have been allocated to repayment towards other needs created by health or other emergencies.

Literature on the subject highlights the potential for small home upgrading loans: "50-80% of the population in most developing countries build their homes progressively. Market studies typically show that one-quarter of these families want and can afford a small home improvement credit at any one time"[15], "A series of small

short-term loans can fund the steps in this progressive housing process with payments affordable to households. Small, serial loans can greatly increase the speed and lower the high cost of the incremental housing process"[16], "Lending to the low/moderate-income majority need not harm the stability of financial markets, and can contribute in helping to strengthen economies through encouraging savings and developing good lending practices"[17].

Case 4.1 A:The alliance and community based housing finance loans

Since the last two years, the alliance has begun to explore developing loans for incremental housing to study what households do when they get such access to reasonable loans. It is important to note that these loans are given to households that already have a history of savings and loans with the alliance and thus have established a relationship of trust over atleast a decade. The Karnataka and Tamil Nadu federations have devised a loan scheme where groups of households can access loans from their collectives that get refinanced by SPARC or SSNS. The loans range from Rs. 10,000 to Rs. 1,50,000 to be returned at 12% interest per year between 1 to 2 years. So far, by the end of 2013-14, about 1000 such loans have been given to residents of slums in medium and small towns and these will be the focus of the second stage of this study.

Despite the potential of small upgrading loans, in most countries, microfinance institutions lack the capacity and the interest to expand low-income housing credit to massive scale. Studies show that microfinance typically targets enterprises and not housing, citing several reasons including a lack of appropriate funding, institutional know how and operational problems.[18]

Traditionally, housing in earlier centuries by and large, had an incremental option, particularly in small and medium towns as there was never any large capital to build for most of the households. Now, there is a new architecture of finance where you borrow ahead of construction to build a complete house and repayments are made over a long period. The capital finance approach for housing has several challenges:

- This strategy requires assets that can be mortgaged.
- It assumes that a person has financial security to be able to repay.
- If people did not pay, the financial institution would reclaim their assets.
- It assumes the availability of reasonably priced tenements. There is a clear supply and financial crisis – the second sale is tied to a young, middle class that cannot afford housing in the market. For every 10% increase in the constructed area, there is a multifold increase in profitability.

15. Ferguson, B., & Smets, P. (2009), "Finance for incremental housing; current status and prospects for expansion", *Habitat International*, p.3, doi:10.1016/j.habitatint.2009.11.008
16. Ibid. referenced as Ferguson and Navarette (2003)
17. Ibid. referenced as UN-Habitat. (2005). Financing urban shelter. Global report on human settlements, 2005. London: Earthscan.
18. Ibid.

4.2 Building material credit and MFIs as intermediaries

Once financing is accessible and given a certain perception of tenure security, households begin the upgradation process. The choice of materials is based on several factors discussed in section 3.3. Materials are accessed from second hand markets, provided by employers or scavenged from construction sites. Household choices vary with local context but mass production across the country makes available certain materials much more easily than others. The selection of materials is often based on ease of availability and all available materials are linked to those inevitably 'recycled downwards' from middle class homes.

Thus, a large portion of sales for building material manufacturers and retailers come from the bottom of the pyramid and they can be incentivized to provide housing loans to this segment.

Case 4.2, A :Cemex and Patrimonio Hoy[19]

Patrimonio Hoy (PH) offers micro-credit for purchasing building materials based on solidarity of a group with no collateral. This supply lending program is 100% privately funded by CEMEX, the third largest multinational cement manufacturing company in the world, operating out of Mexico. Launched in 1998 to reach the informal or self-construction segment, PH targets low-income workers, whose households earn approximately 50-150 pesos ($5-$15) per day.

In 2005, PH had 48 offices in 23 Mexican cities, with more than 75,000 participating families, who have built the equivalent of 33,000 additional 110 sq. ft. rooms. The repayment rate was 99.2%.

Program features:

- Provides $4 of materials for each $1 saved.
- Membership: 15 pesos/per member ("socio")/per week.
- Fixed raw material prices for 70 week periods.
- CEMEX sells construction materials to participants at market prices.
- Technical advice for customized house growth project for each family provided on fee basis (one room at a time).
- Warehousing services to store materials according to their needs.

The first phase of the program lasts 10 weeks. Each member starts by paying PH 105 pesos (after deducting 15 from a total of 120 pesos) for the first 5 weeks, totaling 525 pesos. At the end of the 5th week, PH delivers raw materials for construction worth 1,050 pesos, effectively providing the members with a credit worth 5 weeks payment. This phase helps to establish the credibility of PH in the community by delivering on the promises it made and also tests the commitments of the members.

The second phase of the program is 11 to 70 weeks, during which members receive raw materials worth ten weeks at the end of week two of the second phase, i.e, materials advance of eight weeks if they remain committed beyond the first phase. Deliveries are made during weeks 12, 22, 32, 42, 52 and 62 if the members keep up their weekly payments and stay in the program.

19. Sole, Regina Campa; Moser, Laura; Painter, David (2006), "Scaling Up Housing Microfinance for Slum Upgrading", *Housing Finance International,* December, Vol. 21 Issue 2

4.3 Understanding design as a process

Most imageries of state interventions swing between demolition and building houses. It is as though the reality of how the poor house themselves never finds any inquiry or response when state schemes are designed. Government schemes and most technical professionals have a predisposed idea of a prototype. Our observations indicate that perceptions of "incremental housing" by technical professionals and architects assume from the beginning what the overall design is, and then break it into stages to be built over time. On the other hand, the poor evolve and develop the house gradually and elements and solutions are generated as they go along. Households work within the limitations of geography, plot sizes, available materials and finance to produce housing decisions that respond to several factors such as climate, rodents, privacy, expansion needs, storage needs or income generation. The result is the 'accidental' production of design and use of elements that have now become standardized in informal dwellings.

Today incremental housing expansions occur despite normative impediments. Households have many anecdotes of municipality demolition units coming and pulling down roofing that was above 9 feet in the 70s and 80s. Subsequently, in a guarded sort of way 14 feet was "allowed" after which the second floors have begun to appear.

Clearly the production of housing to accommodate the household, to plan future expansion of family through renting and stretching the possibilities of what is permissible are features that demonstrate natural tendencies of all households, rich and poor to do planning for themselves. Space needs to fulfill several demands of privacy, safety, storage and to allow for the flexible use of space and accommodation of multiple uses at different times of the day. Any change is not seen as complete but part of a larger incremental growth. The challenge in case of those living informally in slums is that it is all deemed invisible, unacceptable and yet it continues to occur.

Households facing the threat of evictions deliberately use temporary materials to allow the structure to be easily dismantled and reassembled. This flexibility of materials and spaces was seen across settlements and households with more secure tenure as well, supporting households to meet the multiple demands of a growing family.

Policy must therefore reflect how the poor build rather than suggesting house types that have no connection to the daily life of those who live in slums. Design should be understood as a continuous process and a framework created to enable the production of an incrementally growing house form as opposed to a static form.

Case 4.3 a, The case of Elemental, Chile

The project makes use of a US$ 7,500 subsidy (given from the government to the families) which pays for the costs of land, construction, and infrastructure – in the best of cases, this allows for around 30 sqm of built space. Elemental builds 'half' the house – the half that poor households are unlikely to build on their own. This allows the housing unit to increase in value over time. Families and communities were included in the process from the start. Elemental chose the wealthiest family or one that was most likely to expand first, and gave them technical support in building the second half of the house with the condition that they showed their house to others as a prototype.[20]

4.4 Sustainable construction practices

Informal dwellers depend on local contractors and lab our to construct their houses at the stages of progressive change where material up-gradation, internal changes, or vertical expansion demand a more skilled approach. On the one hand, labour is affordable and there are ample contractors available but on the other, the quality of construction comes into question.

Interviews revealed that need and affordability often superseded quality in the selection of materials and construction. Consequently, poor material choices impacted financial capacities of the poor who found themselves paying for recurring expenses and perhaps delaying their ability to save for an upgrade. For instance, plastic sheeting serves the purpose of protecting against the rains in the monsoons, but gets damaged in the summer heat and has to be replaced every year thus becoming a recurring expense for households. Another instance is the choice of flooring material. *Koba* is used as a flooring material because it is cheap but is either not well laid by contractors or the foundation is so uneven, that it cracks easily. These become a recurring expense for households who would rather upgrade to tiles when finances are available. Tiles do not depend on the skill of a contractor to be laid well but are relatively more expensive so only get used in the house at a later stage of upgrading. Similarly, brickwork is often redone by households as bricks will vary in quality and laying by labourers. Load bearing construction details can also cause challenges when adding a floor above.

One solution to this is to engage with local contractors. There are many practices of contractors working in the informal construction business. Many are skilled but most of them get jobs in the formal construction business. Others who are skilled and want to work in this sector, select households who can give them larger contracts to upgrade the whole house rather than a piecemeal approach. This leaves more and more novices to work with the informal habitat upgrading.

To what extent can the practices of the informal contractors be improved? In the last few years, some organizations in the city have begun to engage with local construction practices in informal settlements to enable a sounder and safer technical approach. Some experimental and action research by organizations working with these issues have documented practices, while others have explored training contractors. But the exploration is still very tentative and the scale it needs to reach does not exist.

There is also no input regarding serious depth and scale from professionals either in design or improved sequencing that can demonstrate real value for money investment in the self-upgrading incremental process. Unless this becomes a seriously researched and documented subject, the alignment of financing, material development and design strategies needed to produce transformations incrementally will not occur at household level. Discussions on incremental housing document what people do, however the next critical step of engaging the process to produce solutions that work for the city and community never seem to take place.

20. Iacobelli, A. and Aravena, A. (2008), "Housing as an investment not a social expense", in Ilka Ruby and Andreas Ruby, Holcim Foundation (editors), *Urban Transformation,* Ruby Press: Berlin

Case 4.4, A:Homegrown cities project, URBZ, Mumbai

The Homegrown cities project brings together local contractors and urban practitioners in Utkarsh Nagar slum, Bhandup, Mumbai, to start a chain of locally induced and controlled development projects, house by house, with the eventual aim of developing a collectively owned, neighbourhood level housing society that is controlled by the residents themselves.
By relying on the expertise of local contractors and their close ties to community members, the URBZ team can co-create with the community to meet genuine needs and ensure good design. But most importantly, the team hopes to change mainstream prejudices about homegrown neighbourhoods and while they're at it, convince civic authorities to legitimise alternative housing models arising from the communities themselves.[21]

Case 4.4, B: Design Home Solutions, MHS, Delhi

mHS conceptualized Design Home Solutions as a service for urban households engaging in self-construction. Through DHS, these families can access construction finance and technical design assistance. A significant proportion of housing supply in India (even as much as 70% in some cities) is being built by homeowners with the help of a local mason or builder. While this meets the need of housing, the self-construction practice is often unsafe, with weak structure and poor light and ventilation. In addition, due to informality of income sources and weak property titles, households borrow from informal sources at interest rates usually higher than 60% per year. In this context, the goal of DHS was to catalyse this informal supply of housing while improving quality of construction.[22]

4.5 Settlement planning

In most instances, apart from those settlements that emerge through relocations, where some semblance of grid maps lead to demarcation of pathways with footprints for a house and other amenities, most informal settlements develop incrementally. Some of these settlements begin as urban villages that are gradually surrounded by the city, or as low lying spaces unsuitable for formal construction or on land reserved for future development. As households begin to make changes at the individual house level and without any guiding principles for growth, the impacts are felt at the settlement level, bringing with them a new set of challenges.

In Mumbai, older houses with larger footprints have been sub-divided between brothers, parents and children or sold off, leading to smaller units. As the household expands, the need for more space leads to encroachments on public space, leading to narrow pathways with less light, ventilation and privacy. Cantilevers are often nose to nose in many settlements and when there are agreements to leave the pathways open, it can lead to vertical encroachments. In many settlements that originated in areas prior to roads being laid, houses now lie below the road level resulting in flooding problems.

Observations from informal settlements are that the earlier the city brings amenities to them, the greater the balance between public and private space gets established. As pathways, drains, sewers and lights are placed within settlements, they become boundaries for the expansion of houses. If collective settlement deci-

21. http://masteremergencyarchitecture.com/2013/a-pilot-project-in-mumbai-aims-to-improve-slums-from-within/
22. http://www.microhomesolutions.org/project/design-home-solutions

sions are taken early on (such as those related to layouts, infrastructure provision, minimum path widths and plinth heights) then individual housing upgrading begins to find some structure as well that does not in turn compromise on the quality of habitats at the settlement level.

Ideally, within the norms of planning, the settlement level and house level transformations should be simultaneously guided by a set of regulations so as to ensure cohesion between the two scales. However, frameworks for planning for settlements and for households as they exist in formal municipal regulatory frameworks don't seem to function and are by and large ignored by the residents and their informal governance structures.

The differences between how communities manage settlement layouts through incremental "encroachment" and the concerns that architects and planners have about how its impact is 'bad on many fronts' leads to divided positions that seem unable to be bridged. In the meantime incremental upgrading and encroachment as a means to get a space in the city continue in the absence of any mechanism that recognizes this need. With deep belief in the need for safety, light and ventilation, professionals show angst and despair at the gross "violation of public spaces" and the inability of self-governance within informal settlements to ensure that public spaces 'that are good for them' are respected. In turn households in informal settlements are desperate to gain even an inch of extra space, so the battle lines get drawn between them and professionals, resulting in a stand off from which solutions rarely emerge.

In view of the strong influence of professional planners on norms and standards, it is crucial to develop some engagement that can address settlement challenges. It is unclear how to create this engagement but within the alliance there is an exploration to develop linkages between communities and professionals. The linkages will attempt to create some starting points to address real situations pragmatically and to demonstrate value in working together so as to develop viable alternatives that address challenges at both household and settlement levels.

4.6 Building collective governance

Most collective decision making in settlements invariably has some connection to the external environment. Signs of whether any assistance will emerge against evictions, if consolidation will be permitted, or managing individual appropriation, indicate the intricate link between internal governance and external influences. Much of the recognition of internal leadership in settlements is linked to those who have these external linkages. In the absence of formal linkages with the city officials and municipality, these linkages seem more informally linked to political leadership and informal power centers.

Constructing incrementally also means having to manage resources and plan collectively, both for the settlement and the individual upgrades. Although even in this instance there will be individual or groups of households in the settlement who will initiate this process and others will follow.

Buying building materials:
Building materials especially steel, cement, sand and bricks are constantly difficult to purchase at fixed prices for slum dwellers. When all are purchased together the cost is reduced as material is procured at wholesale rates. Also, this allows the house to be completed altogether. However, most households in informal settlements have limited available money and purchase the

materials in installments. Households thus run the risk of escalating material prices resulting in delays and perhaps the choice of lower quality materials. Both produce challenges to incremental housing. The incremental approach also poses a risk to families who have to live in transition for long periods of time. They either continue to live in slum like conditions or may manage to construct a decent house provided they have affordable financing.

Amenities:
A household or groups of households upgrading incrementally have easier milestones to identify than the collective upgrading of amenities. Often a section of households from one settlement upgrade their own locality in the form of paths and drainage or move to another location together and manage the public spaces together. By and large most of the community spaces take longer to upgrade, especially when the expectations of the residents are raised (by politicians and other sources) that the city should do this for them.

Households that get relocated from incrementally upgraded slum locations have a very difficult time adjusting to formal tenements. In the informal settlements whatever framework of public or community engagement was present always emerged incrementally itself. Managing most re-development/resettlement is always a challenge and can become very alienating and disempowering for the affected families, especially, if the community is not involved in the initial stages of the process and not included in the design and implementation of the process. In the absence of this involvement, the process becomes very supply driven and the community does not build any stakes in the process. The better off among the urban poor either keep or sell their homes for better options, while most others unable to cope with the changes just sell and move to another slum, rent out a place or start from the very beginning.

4.7 Recommendations

1 Develop an exploration to make incremental upgrading a housing strategy.

What are the implications for embracing incremental housing approach?
Identify the critical impediments that stop this process and address them strategically.
Work with NGOs CBO and other CSOs to develop scalable pilots to demonstrate possible options.

2 Look for land security policy framework and provisions of amenities.

If a citywide survey of slums was done, how to establish criteria for provision of tenure incentivized by incremental stages of improvements.
Develop action research type process to identify conditions under which people move from dangerous areas and what additional benefits they get.
Produce the architecture and framework of negotiations necessary to encourage state and non-state actors to give up land that has been encroached.

3 Design standardized building materials and create a business model for it.

Improve on what the poor do.
Research new possibilities.
Create financing and legitimacy for these options.

4 Develop a financing mechanism and its delivery system.

Initiate modest funds through existing organizations to finance incrementally and produce some standardization for scale.
Research the process as it builds to explore refinement and inputs into the policy issues of land amenities.
Compare rupee to rupee outputs and outcomes of money allocated to incremental loans and core housing subsidy.

5 Create a campaign to provide insights to ensure good choices for incremental housing investments and construction

Produce advocacy systems that help policy makers and politicians understand the value of incremental options as one of the several housing options.
Create engagements with planning, architecture and engineering academic institutions to deliberate issues of design safety and facilitate emerging Incremental norms that can in turn facilitate this process to be adopted by cities.

APPENDICES

05

5.1 Abbreviations

SPARC:	Society for the Promotion of Area Resource Centres
SSNS:	SPARC Samudaya Nirman Sahayak
NSDF:	National Slum Dwellers Federation
MM:	Mahila Milan
SDI:	Slum/Shack Dwellers International
JnNURM:	Jawaharlal Nehru National Urban Renewal Mission
BSUP:	Basic Services to the Urban Poor
VAMBAY:	Valmiki Ambedkar Awas Yojana
BMC:	Brihanmumbai Municipal Corporation
IHSDP:	Integrated Housing and Slum Development Program

5.2 Colloquial Terms

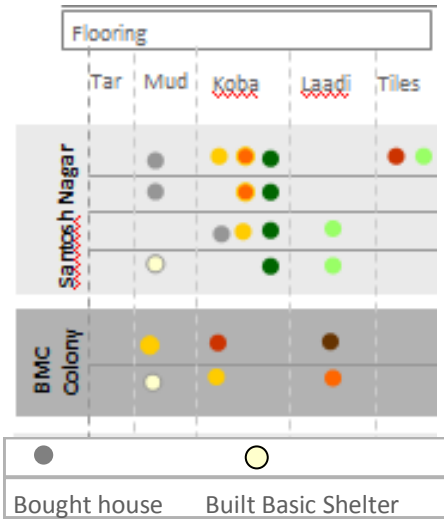
Note: All colloquial terms are denoted in italics in the text

JhopadSangh:	Collective of hutments
Jhopadpatti:	Hutment (used here in reference to pavement hutments)
Vasahat:	Settlement
Adivasi:	Tribal
Chawl:	Type of 4-5 storey building with rooms (each occupied by a household) on each floor accessed by a common balcony. Rooms generally surround a common courtyard and households share common toilets on each floor.
Mori:	Half-walled bathing/washing space within the room
Bhishi:	Chit funds where each member contributes a recurring sum to a common pool which picks a win ner every month. There are typically 20 members in a bhishi.
Koba:	Type of cement flooring
Laadi:	Type of tiling
Patra:	Tin/Galvanised/Cement corrugated sheets
Taadpatri:	Tarpaulin sheets
Jaali:	Grill

5.3 List of Maps

5.4 List of Tables

5.4 a How to Read the Tables



The legend below accompanies each table and indicates the representation of each coloured dot. Within the self-upgrading stages there are four stages ranging from the first change (yellow) to the last (black).
Each of the table rows represent a household interviewed within the four settlements. The dots indicates the stage of upgrading and its position within the column indicates the type of change made.
In several instances, many dots belonging to various stages of upgrading of a household may lie within one column. This means that the household has invested in the same change across different periods of upgrading.

5.5 Survey Questions

Settlement Profile Questions

With the Mahila Milan/Community leader to ask the following:

- Name of Settlement
- Age of Settlement
- Land Ownership
- History of how it came to be (first settlers/history of evictions)
- Current status (slated for relocation/upgrading)

Individual Household Questions

With 5 individual households in each settlement to ask the following;

- Name of Householder
- Name of Owner/Renter
- Proofs or Documentation if any
- How many family members stay in this house?
- How many earning members? Where do they work? What is their daily, weekly or monthly income?
- How much is your general expenditure? Do you manage to save in a month? On what do you spend most?

- When and Why did you move here and from where? And Why in this location?
- What basic amenities existed when you moved here (water, electricity, drainage, toilets)
- What changes in amenities have happened since then?
- Did you settle on empty land or buy this house from someone else, or are you a renter?

- If moved onto empty land,
- Determining space requirements:
  - How did you determine size of the structure?
  - How and Who designed your structure?
  - What part of the structure did you build first? Why?
  - How did you decide where to put the toilet, how to use the space for cooking, sleeping etc.?
- Material & Labour:
  - What materials & labour did you use?
  - If you used self-labour, then where did you learn these skills?

Cost:

How much did it cost- breakdown costs into labour, material, construction?

How did you pay for the improvements- loans, subsidy, borrowed money, or own?

If bought the house,

What material was the house made of then? What was the size of the house?

What other major changes to the house have you made since then? (if yes, which year and what were the changes)

When making the decision of what to change, what are the determining factors that shape construction: cost, materials availability, time, construction skills, community concerns, personal need etc.?

If you used self-labour, then where did you learn these skills?

How much did the improvements cost: break down costs into labour, materials, construction.

How did you pay for the improvements- loans, subsidy, borrowed money, or own?

Did you get any help from the government, NGO's or community organizations to build your house?

If renter or landlord,

How much rent do you pay/get?

Do you upgrade the house yourself or do the owners do it? If upgrade the house themselves, use questions from before.

Common Questions for all households:

What are your monthly/yearly maintenance costs? Are there specific causes for yearly repairs-rain, floods etc.?

Do you have other issues with your house? (heat, leakage etc.)

What influence does the community have on your individual house?

What do you think you are going to build/upgrade next

What are your limiting factors to upgrading?

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We would like to recognize that in the last several years, many universities, organizations and students have carried out or are in the process of researching incremental housing as an alternate approach is sought to the upgrading of informal settlements. For all purposes, we have acknowledged below, those resources from whom we have borrowed and verified our own study findings.

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