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**Thesis**

**Title:** Assessing low-income housing redevelopment projects to derive a financially viable and sustainable model for Mumbai.

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UMD 7



## **Executive Summary**

The entry into the thesis is through development of a housing project for low income group that is currently being worked upon by the author. The project is an alternative approach to the conventional housing redevelopment mechanism in the city. It is community-driven where the community is currently struggling to find an equal space in the development processes in Mumbai. The thesis stems from being part of this struggle with an objective to bring about socio-economic improvement through redevelopment programme and reinforcing the idea of equity by helping the community in getting equal opportunity within the decision-making process of development in the city.

The thesis identifies the composition of the housing model applied in this alternative redevelopment project by learning through international literature on housing delivery systems, history of self-help housing and factors influencing current delivery of housing. It identifies that, housing delivery systems that dominate world housing for low income groups are: either market-driven, community-driven or a hybrid of the two, with extent of government involvement varying in all cases.

The thesis identifies factors that decide the financial viability of a housing project and the also sustainability of the housing model with focus on economic, socio-economic, institutional and physical factors. The project under study is assessed using the derived financial viability and sustainability indicators and compared with the typical redevelopment mechanisms in the city to note its strength and weaknesses. The process reveals that it is not only financially viable but the most sustainable model too.

It is further compared with other local and international case studies to explore other ideas which could be used to improve upon the alternative approach and which would suggest relevant options to reach the objectives of sustainability and equitable development processes.

The study reveals that the alternative approach has a very high potential to succeed in providing solutions to affordable housing to the low income communities but also has drawbacks in terms of lack of government assistance, long period to bring about development, very few examples of community initiated projects and politically unsuitable scenario for the private sector developer lobby. Before suggesting improvements, the research learns from the case studies, assesses the drawbacks of certain mechanisms which would affect sustainability and appropriates that learning in the suggestions.

It further suggests approaches which would bring about more involvement of the government bodies, NGOs, private sector and community at the localised level to make the development process more collaborative instead of making them dominantly single actor driven.

**Key Words:** Housing Delivery system, Low Income Group, Sustainability, Organisational Arrangement, Housing Finance, Self-Help housing, Redevelopment Scheme.

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## Abbreviations and Acronyms

<b>CHFS</b>	Co-operative Housing Finance Society
<b>CHS</b>	Co-Operative Housing society
<b>CIDCO</b>	City and Industrial development Corporation of Maharashtra Ltd.
<b>CRIT</b>	Trust for Collective Research Initiatives (NGO for urban development consultation)
<b>DCR</b>	Development Control Regulations
<b>FSI</b>	Floor Space Index
<b>FTA</b>	Federation of Tenants' Association
<b>GOI</b>	Government of India
<b>GOM</b>	Government of Maharashtra
<b>HDFC</b>	Housing Development Finance Corporation
<b>HIG</b>	High Income Group
<b>IHS</b>	Institute for Housing and Urban Development Studies, Rotterdam
<b>JLLM</b>	Jones Lang LaSalle, Mumbai
<b>HUDCO</b>	Housing and Urban Development Corporation (Financial Institution)
<b>KRVIA</b>	Kamla Raheja Vidyanidhi Institute for Architecture and Environmental Studies, Mumbai
<b>LIC</b>	Life Insurance Company
<b>LIG</b>	Low Income Group
<b>MCGM</b>	Municipal Corporation of Greater Mumbai
<b>MHADA</b>	Maharashtra Housing and area Development Authority
<b>MIG</b>	Middle Income group
<b>MMRDA</b>	Mumbai Metropolitan Region Development Authority
<b>NHB</b>	National Housing Bank
<b>RBI</b>	Reserve Bank of India
<b>Rs</b>	Rupees (Indian Currency) (exchange rate- table)
<b>SDI</b>	Slum/Shack Dwellers International (NGO)
<b>SPARC</b>	Society for Promotion of Area Resource Centres (NGO working with poverty issues)
<b>SRA</b>	Slum Redevelopment Authority
<b>SRS</b>	Slum Redevelopment Scheme
<b>TDR</b>	Transfer of Development Rights

### Currency Exchange Rates

Year (~Every 5 years)	Rupees per US Dollar Unified Rate
1985-86	
1991-92 (Post Liberalisation)	12.24
1995-96	24.52
1999-2000	33.50
2005-2006	44.23
2010-2011	45.00

Source: Board of Governors of the Federal Reserve System

<http://www.forecasts.org/data/data/EXINUS.htm>

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## **Glossary of Terms**

<b>Housing delivery system</b>	The production and supply of housing which includes the institutional arrangement, financial arrangement and maintenance set-up defines the housing delivery system of any country. (IHSd 2011)
<b>Low income group</b>	Low income earners are a segment of society earning below the average income, for which governments and international organizations make special policies for equity purposes. There is usually a range that is defined in each country by the national financial institutions. In India the low income group comprises of the households with monthly income ranging from INR 3,200-7,000 (USD 72 – 156) (UN-HABITAT 2008)
<b>Sustainability</b>	The housing model that would continue to stay, generate income after completion of project and improve economically, socio-economically, physically and institutionally such that it not only improves housing conditions but also contributes towards improvement in society. (Bongwa & Wasonga 2010) (Stein 1991) (Frank 2008)
<b>Organizational arrangement</b>	The composition of actors, institutions and organizations; and the nature of their tasks and relationships for the provision of housing. (Frank 2008)
<b>Housing finance</b>	The finance needed for housing activity, with the involvement of the actors of both demand and supply side of housing, and financial services for the same in the form of savings, mortgages, loans, development finance, subsidies, etc. (IHS.a 2011)
<b>Self-development/self-help housing</b>	Self-help housing is when an individual or a community builds for their own use, with their own resources which could include their own financial contributions, managing it, or even constructing it themselves or with help from market or government. (Coit 1994)
<b>Redevelopment schemes</b>	Housing schemes which include process of demolition of existing improvements and constructing new improvements on the same site.

## CHAPTER 1: INTRODUCTION

*This chapter covers the background for the study and identifies the housing redevelopment problems in Mumbai. It outlines the specific problems of a case of community-driven low-income housing project in the city and opens up a discussion on the shortage of demand-side intervention in the housing process. The chapter defines the research boundary by questioning whether an alternative community-driven approach towards housing in Mumbai is the most financial viable and sustainable option. The objective, significance and the limitations of the thesis are stated which further define the research.*

### Introduction

Delivering low-income redevelopment housing projects in the city of Mumbai has always been problematic as has been observed in the past. (Shetty, 2003) (Mukhija V. , 2001) To accommodate for housing demand and keep development process running in the city there have been various incentives given by the government for redevelopment. The redevelopment process involves a typical model where, developer provides housing to existing inhabitants (in the low-income bracket) by giving the private developer incentive of densification on the plot and cross-subsidising for the low income groups by free sale of extra property. This method of housing delivery has not been very successful (Mukhija 2001) for: developers who have not profited out of the projects on non-marketable property, or to the community who have not found the housing socio-economically sustainable and to the government who have not been able to unlock unmarketable lands. The thesis tries to investigate whether a self-development model by low-income groups for redevelopment of housing is a financially viable and sustainable model that could solve existing issues of redevelopment in Mumbai.

### 1.1 Background

Mumbai lies on the west-coast of India, in the State of Maharashtra and is the financial and industrial capital of the country. The city has a population of 20.5 million (CensusofIndia, 2010). Housing in Mumbai city is a part of the larger housing sector which exists at the national, state and the local level. Post-1990, following the policies of liberalisation, the Indian government involved the private sector participation in delivering public services, one of them being housing. The role of the state changed from the provider to enabler even for a social welfare sector like housing. (Sivam & Karuppanan, 2002)This pulled in various city actors with varied interests within the developmental process. (Yogita, 2005).

The housing demands keep increasing in the city of Mumbai with growth in population and urbanisation. The majority of the housing market caters to the middle income group, whereas the low income housing is in shortage in urban India. (Monitor 2009) The urban land accessible for any new development is negligible, 60% of the city lives in the slums (CRIT, 2007), which occupies 8 % of urban land (Shetty, 2003) of the city and more percentage of land lie locked in settlements, slums, colonies, old housing stock which have underutilised their development rights on that piece of land. High percentage of Low Income groups live in already existing settlements which either need upgrading, or are under pressure of redevelopment. The redevelopment schemes used in the city follow same model where the development right incentives are given to private construction sector for rehabilitating the current inhabitants by cross-subsidising through free sale of extra developable property. There have been almost negligible cases of success stories of redevelopment in the city, a city

which accommodates high density population and tenements, informal/semi-formal on of the highest commercial and residential property. (Nallathiga, 2005)

The author of the thesis is currently working on one such redevelopment project as a part of an NGO called CRIT in Mumbai where a different approach to the same model has been experimented where community empowerment drives the project. There are socio-economic and financial constraints that come across as major barriers in the project and they open up larger arguments of housing finance mechanisms in the country, shortcomings in policy for housing redevelopment schemes and exploration of housing microfinance mechanisms. The thesis gives the author an opportunity to look at the various housing delivery systems available in the city for redevelopment and cases from other countries to assess them from the perspective of financial viability and sustainability for low income group housing and provide for clues to support the experimental community driven pilot project.

## 1.2 Problem Statement

As mentioned in the background, for delivering housing for low income groups it is necessary to first understand who comprises of this group and where do they currently live. The low income group comprises of the households with monthly income ranging from INR 3,200-7,000 (USD 72 – 156) and the EWS or the economically weaker section comprises of households with monthly income lower than INR 3,200(USD 72). (UN-HABITAT, 2008) The LIG or EWS are inhabitants of the city who are either immigrant, living on rental in slums, close to work areas without a valid title deed. They could also consist of existing slum dwellers and project affected persons due to large infrastructure projects, tenants of the State living in slum improvement scheme provided houses, sites& services schemes, old labour housing, old rental accommodations, old village settlements within the city or old co-operative housing societies which need infrastructural improvement.

The housing delivery mechanisms in the city for the low income section of the society that live in substandard living conditions is provided through redevelopment which are incentivised housing schemes. If we consider a low income household wanting to get affordable house, he would usually consider being a part of the redevelopment process on the same plot and get new house apartment in exchange for his old one without any new expenditure. (Mukhija, 2003) This process though sounds pro-community; the consequences have been just the opposite.

- To incentivise the process, government relaxes the minimum areas of open spaces within the building complex to given incentive to developers to build more and gain profit., A minimum standard area is supposed to be provided to the community as per regulations without addressing spatial needs of the community. These factors lead to compromises on the quality of living spaces. (CRIT, 2007)
- The developers come in the project to make profit by cross subsidising the existing inhabitants in exchange of free-sale units. Since the developers are profit driven, they do not consider the socio-economic aspects of the community for making the project more sustainable. (Mukhija 2003)
- Most of the times, the maintenance of the building is not affordable by the community, the livelihoods of the community are affected, which finally forces them to move away. (Vertical city 2010)
- Knowing the fate of such projects, most of the times the community agrees for redevelopment of the property since they know that it would fetch better prices for the new asset. Therefore they succumb to the housing demand for newly built units in the market informally (Shetty, 2003) and this accelerates gentrification.

- The redevelopment process leads to forced gentrification due to lack of decision making opportunity by the community in the development process
- The quality of spaces in the redeveloped buildings is very poor, infrastructural services are limited and does not integrate the socio-economic conditions of the communities. (Vertical city 2010)

If we conclude the larger problem of the redevelopment project model, it is mainly the disregard for the demand-side preference of housing and focuses only on producing more and more unaffordable houses.

If we specifically look at the Bharatnagar project which the author is involved in, the same model would have been applicable, but this project tries to experiment with an alternative approach with a change in the stakeholder arrangement. The land on which the current low income group live and propose for housing project, was a resettlement site where the community was relocated in mid 70s, a state property of MHADA (Maharashtra housing and area development authority) where they are tenants of the state. The land being a high real estate property next to the Central Business District of Mumbai with underutilised FSI the capital gains that can be derived out of it are immense. Therefore there is a pressure from the developers and state whereby the dwellers are being approached for re-development. If the community becomes inactive, the land will be auctioned to a developer. The project if developed in a traditional way, where the developer takes the responsibility of redevelopment, community will have to compromise on size and nature of spaces allotted, deal with the disregard to their current livelihoods, take up onus of the high maintenance of the building and face threats so that they leave the property. In such a setting the community has willingly taken up the responsibility of self-developing and has proposed to turn the ratio of the allowable -up area where instead of the private developers getting 75% and 25% for rehabilitation, the community; now a self-developer; would occupy 75% for rehabilitation and sell off 25% to a private developer, thereby deriving returns to fund the project. Even though the possibility of funding the entire project through this model is high, there are various financial and institutional constraints that the community has to face. There is no institutional support in the housing policies to support such a project which is driven by low income community.

Therefore, the thesis proposes to investigate whether such a self-development model approach if introduced in the redevelopment market is financially viable and most sustainable so that it could be a good knowledge backing to support this approach and easier to resolve the financial accessibility as well as could be integrated institutionally.

### **1.3 Research Questions**

**Is the alternative model of the Bharatnagar project the most financially viable and sustainable redevelopment model for the LIG in Mumbai?**

1. What is the existing conventional housing delivery model for LIG adopted in Mumbai for redevelopment?
2. What is the housing delivery model adopted in Bharatnagar for redevelopment?
3. How is financial viability of a project defined?
4. How is sustainability of a redevelopment project defined?
5. What are the lessons that can be learnt from case studies to improve the redevelopment model?

## 1.4 Research Objective

- The research objective is to study ways in which the redevelopment process in the city becomes truly democratic and participative.
- Learn through examples of self-help housing of low income groups in other cities/countries to improve development process of housing and make it more sustainable in Mumbai.
- To build in mechanisms in the redevelopment process such that the quality of living spaces of the new project is improved.

## 1.5 Significance of the Study

Since the Bharatnagar project is a model that is rare in the city and the research brings it on to the stage for discussing its approach. The research will look at it objectively and will help in improving on it further. The research analyses the case of redevelopment by the community and also opens up discussion about how sustainable could this approach be. After testing the financial viability and sustainability of the Bharatnagar model, if it generates certain solutions to the redevelopment in the city, then it might set an example for other low-income community groups to follow suit and also bring about changes in the institutional framework to support the process.

## 1.6 Scope and Limitation of the Study

- Even if the study is able to prove that the Bharatnagar project is the most financially viable and sustainable, it might not necessarily be a pilot project that could be replicated in the city. This is because the site dynamics differ from one location to the other with varying levels of land values, willingness of the community, voluntary expert initiatives and political conditions.
- The thesis has studied only moderate size plots in the range of 4000- 6000 sq.mt. with varying FSI. In cases of larger area projects and low land price, the dynamics of the actor relationship and figures may change drastically.
- The process of the housing delivery with timeline and phases of tasks performed by all actors forms a part of the housing model. But this process has not been covered elaborately in the literature review.

*This chapter concludes that the specific case selection opens up explorations in the field of housing sector, related literature and composition of housing models for the low income groups and definitions of terms such as community self-development, financial viability and sustainability. This chapter is an overview to guide the operations and methods that will be adopted to carry out the thesis in the forthcoming chapters.*

*The next chapter will start to sharpen the research subject through a rigorous literature review related to the mentioned fields of interest.*

## CHAPTER 2: LITERATURE REVIEW

*This chapter has a collection of international literature on housing delivery systems and housing finance. It looks at the main components needed for working of a housing sector in any country. It further looks at the various housing delivery options with dominant or minimal government intervention. It elaborates on the market-oriented housing approach, self-help housing approach, stakeholder arrangements, housing finance mechanisms that are seen within each housing delivery systems. Deriving from suitable references, the financial viability and housing finance sustainability is theorised and developed in this chapter.*

### 2.1 Introduction

The literature collected will make an argument towards the conceptual framework for the research thesis. It is presented in five parts: The first part consists of housing delivery system concepts and approaches with a special chapter on housing system in India with special emphasis on housing for low income groups. The second part describes the participating actors and their organisational arrangement in housing delivery. The third part reviews the housing finance system literature. The fourth and the fifth part define the concepts of financial viability and sustainability for housing.

### 2.2 Housing delivery system

When we look at housing as an infrastructure that needs to be produced and supplied, it not only consists of the individual units that the households receive but also other factors that make the housing facilities complete, which includes the other utility infrastructure like roads, drainage, water supply, sewerage, waste management, the public facilities like schools, hospitals, parks etc. There are other aspects to housing that form a part of the production process, which includes the authorisation, planning, design, construction, land rights and financing for both demand and supply of housing.

If we summarise these components that go into looking at housing as a comprehensive infrastructure, it forms a part of the Housing delivery system. Even though these components are organised and delivered in different ways in different countries, they primarily remain the same. Housing delivery system is theorised as comprising of seven components:

- *Labour*
- *Infrastructure*
- *Financing*
- *Land*
- *Building material*
- *Authorisations*
- *Public facilities*



In every country, the institutional environment and agencies for housing make policies based on these components. (IHS.a 2011)The table 2.1 gives the detailed account of the content of each of these components.

**Table 2.1 Housing delivery system**

AUTHORITIES	LAND	INFRASTRUCTURE MUNICIPAL SERVICES	PUBLIC FACILITIES COMMUNITY SERVICES	LABOUR FORCE	BUILDING MATERIALS	FINANCING
Land subdivision permit Residency/occupancy permit Building permit Planning/Zoning permission Concession, etc..	PUBLIC PRIVATE  Freehold Leasehold Waqf* Cooperation Customary Etc..	Roads Water Supply Sewerage Electricity Drainage Gas Garbage collection, etc.	Schools Clinics Mosque/ church Police Post Office Playgrounds Open Spaces Civic Centre Cultural centre etc.	Intellectual (Architects)  Manual (builders)	Wood Concrete Cement Sand Steel Corrugated iron Adobe Etc..	DEBT EQUITY  Land acquisition loan Construction loan Enterprise loan Mortgage loan Public Subsidy Etc.

Source: (IHS.a 2011)<sup>1</sup>

## 2.3 Housing Delivery Approaches

The delivery options existent internationally vary due to their historical, political and economic past as well as their present macroeconomic condition.

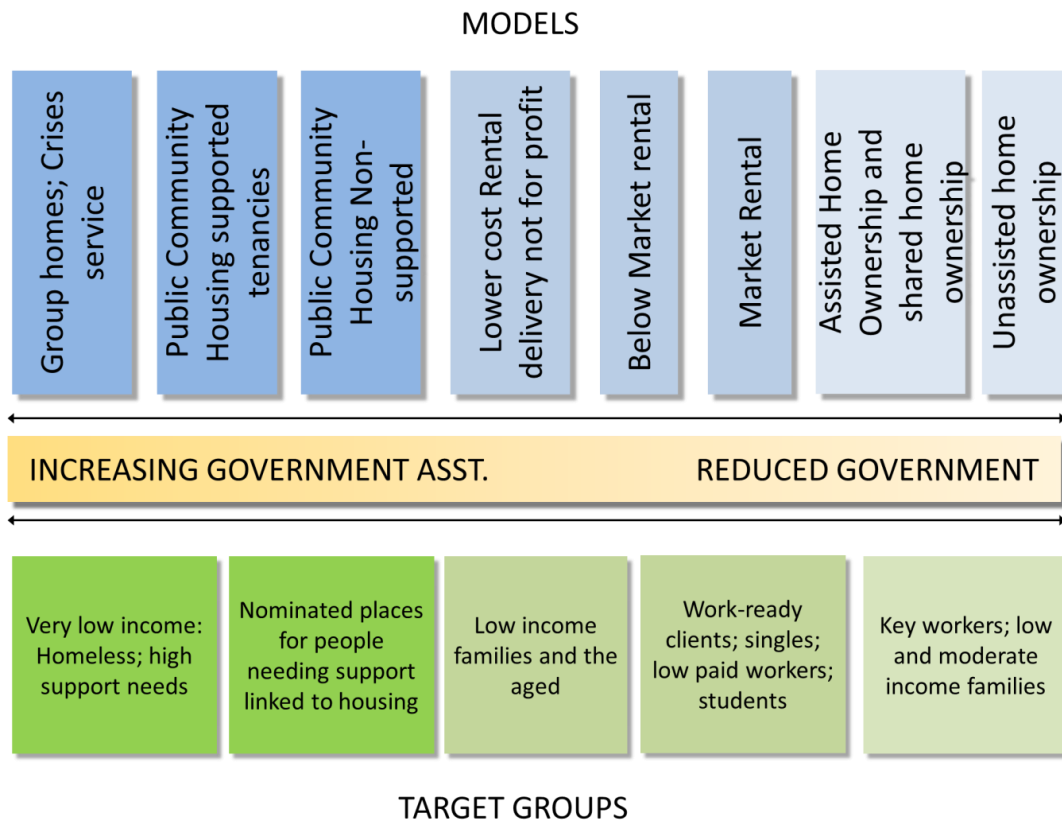
### 2.3.1. Government Intervention

There are various housing delivery options which governments all over the world follow to respond to the varying community needs for their financial assistance and other support linked to housing. The figure 2.1 illustrates the level of involvement of governments in housing models and the corresponding target group receiving it.

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\*Waqf: Land owned by religious authorities or trusts, which is used for social welfare purposes.

**Figure 2.1 Models of government housing interventions**



Source: (IHSe 2010)

The table shows that as the assistance of the government in the housing programs decreases, it implies that there are other mechanisms in place which provide for housing. These mechanisms are in the form of self-help housing, market driven processes and hybrid of both. When government assists in housing program, they could be in the form of incentives to private sector to build, get market involved, subsidies to make the housing affordable for the community and all other mechanisms to enable the housing process without direct production.

### **2.3.2. Self- Help Housing Approach**

Self-help housing is defined as housing built by individual or community with the support of the government. The community could include their own financial contributions, manage the project, or even construct it themselves. (Coit 1994)

During the Welfare state that existed during the 1940s till 1980s, where the government provided for housing for the low income groups and considered their responsibility in providing all the supported infrastructure along with it. (Stein 1991). But it was soon discovered that this role of the government as providers was unsuccessful and experts like John turner were strong critics of the government policy where they argued that instead of the public institutions providing housing, end-users could manage their own housing more efficiently. (Mukhija 2001) There has been a lot of argument over the self-help approach for housing and various self-help programmes have been implemented by governments, NGOs and international agencies to deal with problems such as improvement of housing for low-income families, equal distribution of resources in society and initiation of social transformation. (Stein 1991)

Self-help housing is theoretically divided into 4 approaches as per a paper *Critical Review of the Main approaches to Self-Help Housing Programmes* by Alfred Stein. First being the **Supportive approach**, which is basically John Turner's approach of devolution of authority and giving building responsibilities to the urban poor. He believed that if housing decisions were collectively controlled by the community they would be empowered. (Mukhija 2003) But this approach failed to strengthen the poor due to lack of definitions of economic and political structures needed to make the self-help housing feasible.

The second being the **Market-oriented approach**, this uses the argument that due to lack of government efficiency in provision of goods and services there is a need for the market to be strengthened to unblock bottlenecks. The World Bank integrated Turner's theories of community participation in the housing process as a means to provide access rather than the actual community empowerment or building capacity. From 1970-79 there were various projects introduced by the World Bank like sites and services and slum upgrading projects where the bank provided the funding. Both intended to increase replicability, recover costs and assure maintenance of the projects after completion of building rather than building on community empowerment and their benefits. (Stein 1991)

Thirdly, there is the **Structural approach**, which critically looks at Turner's approach and pin-points the lack of political definition in it, giving impetus for the capitalist system to dominate and exploit the poor in the whole process. (Stein 1991). They critique that without state intervention it was difficult to have freedom to build because of the constraints in choices for the poor. Also there was very little knowledge about how to implement these ideas into housing policies institutionally. (Mukhija 2001) Hence, this approach suggested for a structural change in the economic and political structures of the society. But the self-help critique fails to answer whether the government can play a positive role in making housing affordable to higher numbers of urban poor. Also, the state interventions in the form of housing policies supporting self-help mechanism are actually dependant on political circumstances. The politicisation creates a space for negotiations by the social organisations with the government and can put pressure towards redistribution of resources, hence evolving the self-help model. (Stein 1991)

The fourth approach is the **Organisation approach**, which is a synthesis of the other approaches and through cases looks at the potential of self-help programmes and the capacity of NGOs to replicate them on a large scale and empower project participants, make rooms for negotiations in even the most repressive societies, thereby aiming at solving larger political, institutional and financial issues. (Stein 1991)

### **Community Empowered Housing projects**

The literature on self-help gives a clear picture of the approach of how community participation can form a part of the development process. Turner proposes that self-help may not necessarily mean self-construction only but also delegation and devolution of responsibility to the people and the power of participation in development process with legal rights. (Turner 1986) The *Ladder of Citizens' Participation* by Arnstein reveals that citizen participation is an equivalent of citizen power. It is the redistribution of power enabling the have-not citizens to be a part of the political, economic processes and share in the benefit of the affluent society. When a development program proposes for community participation there could be various extents of power actually given to the have-nots within it. He works out this gradation and shows how the degree of power is the highest when it reaches citizens taking control, are delegated power or undergoing partnerships rather than just being merely

consulted or informed. When the participation is of the highest degree, it also brings about accountability of the citizens towards their decisions within the program. (Arnstein 1967)

There are cases where community self-development have been initiated by the state, NGOs or other agencies and in such cases it is observed that the community has not truly participated in the process. If we analyse the project on the basis of participation in the planning, implementation and maintenance stages, it is observed that when the community is involved in the maintenance or implementation stages, it not necessarily feels the ownership of the project and tends to be half-hearted towards their effort. However, when the community is involved in the planning process there is not only willingness towards implementation but also a psychological commitment towards its maintenance. (Skinner November 1984) But there are possibilities of failure even if the community is involved in the planning process where there is lack of experience for such projects, insufficient co-ordination amongst the community itself, being used to top-down approach, existing organisational structures for a two-way communication between the state and the community, etc. Communities need to be institutionally strengthened to achieve objectives of participatory approach: economic growth, sustainability, democratic governance, equity and protection of the poor. Grassroots need to be sufficiently empowered with training programmes in making them aware of their rights. (Platteau & Gaspart 2003).

When we talk about community empowerment, it also means that they have a right to own common resources to be able to get strengthened in development process. These common resources could be in the form of saving contributions, right to common land or property. 'Common pool' resource is considered to be an effective method of generating economic and social wealth. *'The commons fills a theoretical void by explaining how significant value can be created and sustained outside of the market. The common paradigm does not look primarily to a system of property, contracts and markets, but to social norms and rules, and to legal mechanisms that people to share ownership and control of resources.'* (Ostrom & Hess 2007)

### **2.3.3. Market- Oriented Housing Approach**

After economic and social crises in underdeveloped countries during the 1980s and 90s, and with failure of the government in matching the provision of housing to the demand,. The World Bank proposed for 'enabling the market' as a solution to housing problems for governments, the idea being that all the policies that restrict or are bottle necks in the smooth functioning of markets in provisions of housing should be removed. (WorldBank 1991) World Bank suggested that supply cost of housing should be cut down. This meant that creating a market by pricing sufficiently for the low income to afford the housing facility. The strategy reduced the role of the state as a producer, reduced size of public sector expenditure and substituted social subsidies to subsidies for housing finance system. (Stein 1991)

The key elements in the enabling of market strategy were decentralisation, demand-driven development, privatisation of housing delivery and deregulation within policy advices to governments across the world. (Mukhija 2003)

But since it dependant a lot on pricing and sufficient standards policy, it was critical for replicability. These non-interventionist policies did not solve the political and social issues that were at the core of housing problems. (Stein 1991) Critiques of Market enabling strategy question the various components of it. Decentralisation has the dangers of undemocratic

control of power by local elite and that government needed to play more active role in it. Also, privatisation could impact the poor and make housing more unaffordable. It questioned how the government could play a role in making the markets responsive to the low income groups and efficient in the delivery of housing.

## **2.4. Roles of different Stakeholders and Actors**

In each of the housing approaches, there are some very crucial actors which represent larger bodies and other actors involved in any housing project. A stakeholder is an actor which had direct benefits from the project whereas an actor could be understood as an entity that is needed within the process of development. A stakeholder could be directly involved in the inception, management or financing the project, whereas an actor means that an entity the stakeholders need in terms of technical assistance, accessing finance from or for legalising the process. Stakeholders could include landowners, inhabitants, developers, investors, buyers and end-users, whereas the actors helping in the development activity would include contractors, designers, managers, regulators, the state, bank, market brokers and labourers. But at times some enlisted actors in some cases could also become stakeholders in the development. For example a state could extend its role from being more than a regulator and have direct stakes in the project. The stake of the stakeholder is decided through a legal agreement, employment or informal relationship.

Following are the main actors which are identified as the main entities of a housing projects internationally. (Based on a study) (Frank 2008)

1. Beneficiaries (individuals/families/communities)
2. Public Sector
3. Private Construction Sector
4. Financial Institutions
5. NGO

### **2.4.1. Organisational arrangement**

The organisational arrangement can be understood as the combination of different kind of actors in the participation of the project. Some actors could play a pivotal role in the project whereas others could be secondary actors. They portray a different kind of relationship right from the international level to local level and the tasks that each actor follows. The organisational diagrams in Annex I- Part 1 illustrate the different actors right from the national level, state, regional(where applicable) to local level. It defines through secondary data collection, the responsibilities of each of these actors in terms of processes of management, finance, property transfers, service towards the project and regulations. The connecting arrows between the actors describe the nature of relationship as shown in the legend. The varying levels of tasks show the level of influence of that actor in performing the task and overall influence within the project. (Frank 2008)

Along with the financial arrangement the power arrangement forms a very important part in the project. There are certain dynamics of power that set in when there is a collaborative approach towards a project. It is hence important to identify these power forces which can make or break the project. Policy failures during the era of New Public Management introduced the need for the concept of New City Management where the government understands societal processes, multi-actor participation, interdependence and idea of the policy being acceptable. The concept introduces relocation of politics where the power moves from centre to societal political actors as well as combining it with the management of

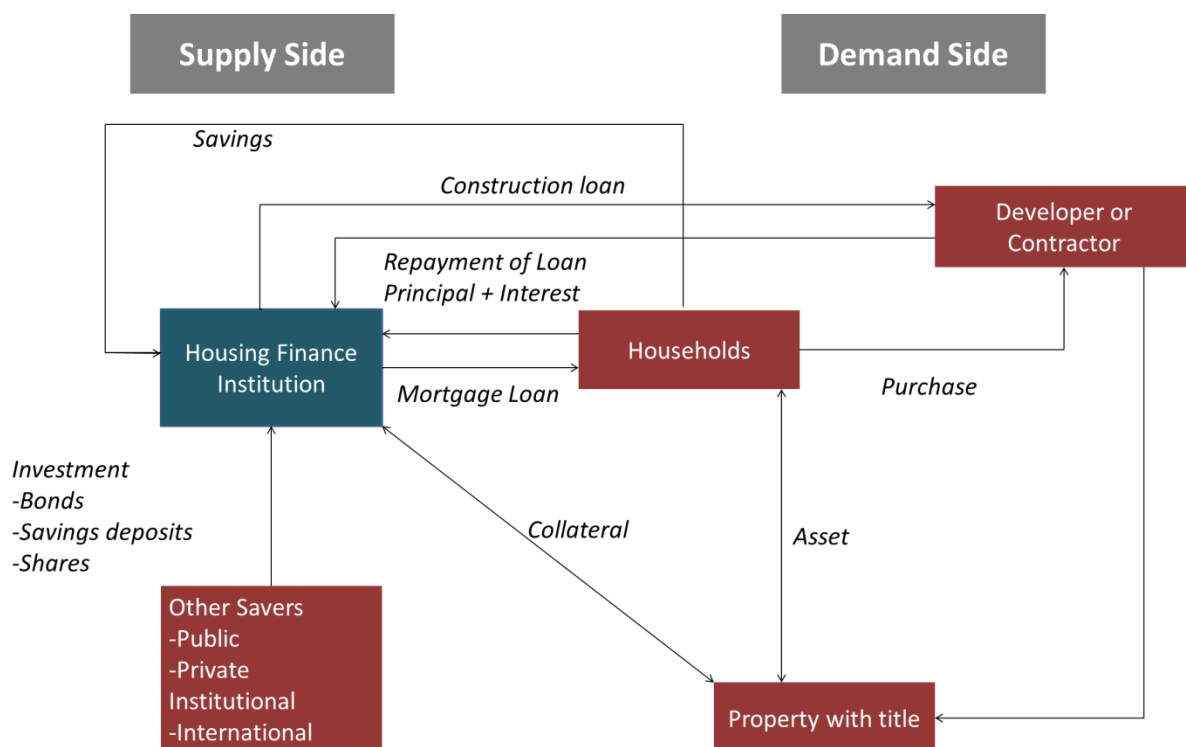
market. (Daemen 2011) Even though financially a project is viable, it would either not take off or would be unsustainable due to unsatisfied or unwilling actors in the project.

## 2.5 Housing finance system

“Housing finance is both the servant and the master of the housing process” (UN Habitat, 2005:19). Housing finance is a sub-sector of the housing delivery system and is a large industry which supports the housing activities at all levels. Finance is needed right from the inception of a housing project till a regular maintenance of the housing. Developing countries have well-articulated finance strategies which are integrated with the financial market sector, where they focus on efficient mortgage markets and totally vary from the government housing programmes of the past. (Renaud 1998)

Housing finance system involves actors from individual household level, community groups, NGOs, government housing departments, formal and informal banks, construction companies and international agencies. The system comprises of agents who offer financial instruments to savers to mobilise resources and offer loans to housing borrows and developers. (IHS,2011)

Figure 2. 2 Demand and Supply side of Housing delivery



Source: (IHS.a 2011)

The most basic mechanism in this system involves the households, the financial institution and the developer/construction company. The financial institutions receive funds from the savings of households, government agencies, construction companies, international agencies as investments in the bank which would bring them higher returns in the future. These collected funds are borrowed by the households in need of houses in the form of mortgages, whereas the construction companies borrow development finance for construction activity. The financial institution has certain conditions laid out while lending these funds, like

demanding sufficient collateral of asset to support the loan. The borrowers are then expected to service their loans by repayment of the borrowed finance in a stipulated time including the principal and interest amount as pre-agreed by both the borrower and lender. The other component of access to housing finance for middle or low income groups is through subsidy which the government offers through financial institutions or construction materials to the construction companies or mortgage borrowers.

Significant trends in shelter finance include the state's programmes being less concerned about direct provision and tend towards working with finance to enable more beneficiaries, housing microfinance has become institutionalised and financial deregulation has observed many participating agencies in lending mortgage finance. (Mitlin 2007)

### **2.5.1. Housing Market and housing finance market**

There is housing market and housing finance market both cater to the demand and the supply side of the housing delivery. The demand and supply in both cases differ due to the market perspective in each case. The housing market looks at delivery of the housing units, the demand for it and supply of it. The demand side in this case would be the number of units that households/consumers are willing and able to buy at the current prices. (Welsh & Bongwa 2005)Whereas, housing supply can be defined as, the current housing stock available for purchase, including the owned houses by occupants. (Mugambe 2009)The supply side consists of all the players involved in production and delivery of housing which includes the contractors, developers, construction material dealers, government agencies and all the producers willing and able to produce and sell. So when the government subsidises the demand side, it offers for incentives for households to buy more housing stock. Whereas when it subsidises the supply side, it gives incentives to the producers to produce more housing stock.

When we look at the housing finance market, we can see a slight shift in these definitions. Though it forms a part of the larger housing market, if we look at it from the perspective of a financial institution, the demand for housing would consist of both the consumers and producers of housing whereas the supply would be from the financial institutions, savings of government bodies, households, corporations, insurance companies, provident fund and other investors. (IHS.a 2011)The financial institutions lend the demand side of the market with development finance and mortgages to producers and consumers respectively. Before a product of loan is designed and launched in the market, there is market assessment done to check the demand of the product by the financial institution. (Daphnis & Ferguson, 2004)This is a mechanism takes at both the macro and micro-finance levels.

### **2.5.2. Subsidies**

“A subsidy is an incentive provided by Government to enable and persuade a certain class of producers or consumers to do something they would not otherwise do, by lowering their opportunity cost or otherwise increase the potential benefit of doing so” -Adapted from US Congress, 1969. (IHS.a 2011) There are reasons for the state to provide subsidies for shelters which include ensuring public health, equity, legal responsibilities to integrate with other sectors like market, disallowing markets to take over, reducing housing costs and stimulating economic growth. (UN-Habitat 2005)

Subsidies are provided by the state to the private recipients in the form of object-oriented or subject oriented subsidies. Object-oriented are the ones where the interest rates are subsidised whereas subject- oriented subsidies are where beneficiaries are selected and awarded grants. (Frank 2008) Subsidies could be given for housing demand or supply . On demand side they

are provided to households as subsidised mortgages, subsidised utilities, housing allowances, rent control and subsidy on operating expenses of public housing. On the supply side the producers are subsidised by real estate tax deductions, developmental finance for construction costs, labour, infrastructure or income tax reduction.

Subsidies are popular with the politicians and poor households, but provide low per-unit coverage compared to the demand. (IFMR 2007) Subsidies can equalise distortions in housing market but they can themselves distort market competition. Subsidies are necessary for LIG but the need can be reduced if effective shelter finance systems are adopted.

### **2.5.3. Housing Microfinance**

Only small share of population has an access to traditional mortgage finance to afford the least expensive commercial unit. Due to drawbacks in addressing the housing requirements of poor people around the world through traditional housing finance, an alternative way of approaching these needs started to surface. Through observation that poor households need loans to improve their individual houses and home-based enterprises, microfinance institutions emerged as a result. Microenterprise loans offered better repayment terms than the informal lenders, where the poor households could afford to repay and improve their houses incrementally. Therefore, housing micro-finance give financial services to the clients, that allows poor and low-income households to finance their needs of habitat using methodologies adopted by the various microfinance mechanisms. These methodologies include giving loans of relatively smaller amounts, such that the poor households could afford repayments, collateral substitutes can be used, they have short repayment periods, if the finance provider is a Micro-finance institution, credit-services are linked to prior participation in saving groups. Housing micro-finance is being practiced in Latin America, Asia, Middle-East and Eastern Europe in a large extent. (Daphnis & Ferguson 2004)

### **2.5.4. Market oriented innovative housing microfinance mechanisms**

The literature on housing finance opens up a debate of whether the market should enter the field of social housing finance or not. When the state, through its policies allows for the private developers to rehabilitate the poor in return for an incentive, it is indirectly allowing the market to enter the field of housing the poor. The results are seen in most of the countries where the slum dwellers or the poor are forced to rehabilitate in undesired spaces where their livelihoods are affected as well as their affordability to maintain the new buildings are not checked. But on the other hand, there are arguments like the one De Soto proposes in the *Mystery of Capital* which emphasize the importance of the integration of the poor into markets and particularly the role of capital markets for economic development and poverty reduction. (Muller & Mitlin, 2007). Poverty reduction can result from co-creating a market around the needs of the poor. If we refine the solutions of the past- development aid, subsidies, governmental support, localised NGO based solutions, exclusive reliance on deregulation and privatisation of public assets – is important but has not redressed the problem of poverty. Why can't we mobilise the investment capacity of large firms with the knowledge and commitment of NGOs and communities that need help? The problem of poverty must force us to innovate, not claim 'rights to impose our solutions'. (Prahalad 2010) So we can deduce that maybe getting in the market for social housing is not bad but the way in which the market is brought into the project needs to be checked.



## 2.6. Financial Viability

For a project to be financially viable, the costs in inflow should be at least equal to the benefits as outflows. The extent of viability depends on the surplus generated. Some projects make the project work but the financial viability analysis reveals that the overall costs that have gone in the process have been much higher than the financial outflow from the project. In housing, financial viability can be calculated using cash-flow analysis where the costs incurred in the projects can be compared to the property rate generated after the construction of the units. From the perspective of every actor viability would differ. There are possibilities where the project is viable for one actor and does not benefit another actor financially. But in the financial viability of the entire project, the broader project analysis will reveal the financial viability of the project only when it is viable for all actors involved. The inputs that go into a project including the construction costs, land costs, operating costs, transaction costs, corpus, taxes, premium to the state etc, could be looked at from the developers side of input and can be then evaluated from how much inflow is generated after the property produced is sold. In such a manner, the financial viability of the project for each actor can be evaluated.

The *figure 2.3* shows the participation of different actors and their cash flows individually and as a collective for the project to analyse the financial viability. (In the chart the possibility of the community as an active developer is shown) If we consider the time value of money, the financial analysis would reveal that the Net Present Value\* (\* NPV is a technical indicator to decide if the project is viable or not. It is calculated by simulating the future values of the inflows and outflows in a discounted cash-flow analysis) of the project would be greater than zero if the costs incurred are lesser than the benefits, which conveys that the project is viable but if the NPV is negative the project is not viable. (IHS.b 2010)

Figure 2. 3 Finance viability analysis (Showing Bhratnagar project assessment)

	COMMUNITY		PUBLIC SECTOR		PRIVATE CONSTRUCTION SECTOR		FINANCIAL INSTITUTION		NGO, ARCHITECTS		INTERNATIONAL AGENCY	
	OUTFLOW	INFLOW	OUTFLOW	INFLOW	OUTFLOW	INFLOW	OUTFLOW	INFLOW	OUTFLOW	INFLOW	OUTFLOW	INFLOW
CASH FLOW												
Land Procurement costs	✓			✓								
Construction costs	✓				✓							
Operational funds	✓				✓							
Temporary rehabilitation	✓											
Corpus for maintenance	✓											
Premium to state	✓			✓								
Municipal taxes	✓			✓								
Rents to state	✓			✓								
Subsidy												
Grants/Funds										✓		
Household/Community Savings	✓											
Loan amount borrowed												
Rent from new units		✓										
Repayment of Loan												
Consultancy fees	✓				✓							
Technical service	✓				✓							
Sale Amount		✓										
Surplus		✓										

Source: Author, 2011

## 2.7 Sustainability of Housing models for Low-income groups.

The sustainability of housing finance models in the context of the thesis means that the low-income groups and the system surrounded by them in the specified finance model should be able to pay for the costs of the housing even after the completion of the construction of the building. In other words, the housing project could be called sustainable when the external source of help has ended and when it has stimulated self-sufficient, independent and lasting processes. (Frank 2008)

A project is sustainable when the organisations develop a strategy for development and growth of the project such that it can continue to function indefinitely by maintaining the outcomes, goals and the products as well as institutionalising the process eventually. The more the collaboration between actors, diversity of funding in the project, forms of project continuation after funding ends, extent of participation of the community in the project; the higher is the sustainability of the project. (Bongwa & Wasonga 2010) One more critical aspect of the project is the willingness of the community to continue to live in the new housing units after securing such a high value asset.

In the context of the whole premise of improving on the alternative project- pilot project is so that it could be replicated at other places in Mumbai. All the variables of sustainability will also be checked to determine if the model is sustainable enough to be replicated.

The thesis uses the criteria for analysis of Sustainability using the framework designed by Daphne Frank in the book *Sustainable Housing Finance for Low Income Groups: A Comparative Study*, 2008 because the book has a framework developed for weighing sustainability in housing for low income groups internationally which corresponds to the exact requirements of the thesis. The framework for the thesis is further developed based on workshop on Project Sustainability conducted by ESPIG/IGS/HIS, authored by Aloysius Bongwa and George Wasonga in Nairobi in December, 2010 since the workshop highlights the some very important factors that need to exist for a sustainable project. Both these studies in combination reveal the most vital variables; for housing of low income groups; which are also reflected in the literature review in the previous sections of this chapter. A program is considered to be sustainable when it contributes economically, socio-economically, institutionally and physically towards the growth of the city/nation. Following are the criteria that would measure the sustainability levels of a housing program.

### 2.7.1 Economic sustainability

This deals with the economic aspects which include relationships between supply and demand side partners that finance, offer loans, subsidise and support financial activities. The criteria will also measure the diversity in funding sources and financial activities that continue running in the project even after the funding ends. The Funding should be ensured for long-term for similar projects. Community should get initial help from other bodies. There should be a balance between community contributions, finance from other bodies and access to loans.

- **Macroeconomic Situation:** Macroeconomic situation is a very big factor in deciding if the housing program would work or not. Factors like economic growth, inflation rate, and political instability greatly affect the overall economic condition of a country and would affect the government funded/subsidised housing programs.

- **Government finance:** When the government finances the program it is strength for the housing program because then the program can operate more independently from international agendas. But the funding is a sustainable solution only if it can recover its costs from the program, through administration or market.
- **International Funding:** The lower the international funding the better because their intervention may be for a limited time in support of the program and could lead to lack of guarantee for the program to continue for a long-term.
- **Families' contribution:** The program is sustainable when the families contribute by saving, labour or managing project tasks. This is financially sustainable because it makes the community responsible towards their own project and when interest is localised it is a sure method of making that housing project sustainable.
- **Access to Loans:** If loans are provided, it makes the program more sustainable because then the financial institutions share the risk with the borrower would help the program in strengthening their financial discipline without depending on government finance.
- **Percentage of Loan Repayment:** If the loan can be repaid through the program, then the program is sustainable, otherwise, if the loan does not get repaid, the lending institution would foreclose the property of the borrower and would not continue taking further risks on such a program. This affects the sustainability of the program and hence the capacity to repay a loan needs to be checked before opening up loan facilities.
- **Subsidies:** To start up a program and incentivise the development process, it is sometimes better to provide low subsidies either through the government or international institution. But if the program provides high subsidies for a long period through the program, there is possibility of system breakdown as well as dependency of the receiving bodies (beneficiaries/construction sector) on those institutions forces restriction on their capacity to grow and become strong entities.
- **Direct delivery of subsidies to Beneficiaries:** Direct subsidies reach the beneficiaries and help them directly than the subsidies given through private construction sector or other institutions because there could be manipulations at the intermediate level restricting its reach to the target group. The downside of direct delivery of subsidies is that it could bring in corruption or dependency on such a subsidy could impede growth of the program.
- **Land and construction costs:** If these costs are low, the program is much more sustainable, but if they are high, it could lead to building in the outskirts of the city which would impact in social segregation and community dissatisfaction. The other problem being that the high prices of the new accommodations would force or tempt the occupant to sell and leave the property, hence tending to make the program unsustainable.

## 2.7.2 Institutional sustainability

The institutional arrangement could be strong or weak depending upon the partnerships and co-operation between the main actors which include government bodies, NGOs, CBOs, Construction companies, financial institutions at the national, state, local and international

scale. It will also include the diversity in collaborations and non-financial contribution towards the project after its completion. Following are the criteria which would decide the sustainability of the program.

- **Political support:** The program is likely to be sustainable if there is a strong political support, which means that there is backing from either the local leaders, government officials or other decision makers at the community level which accelerates the processes of the program and all actors convinced about its possibility to work.
- **Links with the Parliament:** A program that is locally articulated by the state bodies has a strong chance of support and survival if the parliament provides for political and financial support to it.
- **Participation of Private construction sector:** The participation of private construction sector assures efficiency in delivery and hence sustainability. It also helps build the market and indirectly bring about economic growth of the city if this sector involved in the program.
- **Participation of Financial Institutions:** Financial institutions are part of the larger economy. If there is participation of these institutions in development process, there is generation of income within the economy besides just provision of credit to the borrowers for the program.
- **International Cooperation:** The program is more sustainable if the international participation is low. Though in some cases, to initiate a process, it could be needed; but co-operation from international institutions could bring about dependence of the program on them financially and in decision making, which would weaken the economic and political system at the receiving end.
- **Participation of NGOs:** NGOs are bodies which support the community at the local level and work for social-economic causes to bring about improvement in the city/nation. The participation from NGOs assures growth and hence makes the program sustainable.
- **Localised implementation:** If the program is carried out at the local level, it is more sensitive towards the local context, where the decisions and procedures are taken as per local needs, hence it is more sustainable than a centrally managed implementation.
- **Provision of Technical Assistance:** The program is more sustainable if technical assistance is provided to the community which could be either through government officials, NGOs, academicians or private sector professionals.
- **Amount of Paperwork:** The higher the paperwork the more chances of bribes and more costs involved besides the time and money spent on getting them correctly completed. It reduces incentive and is a deterrent for the community or developer to undergo high paper work process; hence the program is more sustainable if the amount of paperwork involved is less.
- **Process speed:** Faster process speed influences the entire process of development, because not only does the community get its needs fulfilled quickly, but also the effect of

growth in inflation rates and rise in construction costs for the developing bodies, is avoided.

- **Diversity of institutional actors:** If the actors involved are varied, it shows that the strength of the project would be higher due to contributions of varied skills and capacity from each actor making the program much more sustainable. What becomes critical here is the management of all the actors in the process and caution for negative participation which could ruin the program.

### 2.7.3 Socio-Economic sustainability

These deal with the social networks that exist, the extent of participation of the community in the housing activity, the economic levels of the community and the capacity to maintain good living conditions based on their income levels, affordability to maintain good housing condition, contribute non-financially towards the project and strong reasons to assure their inhabitancy after the project ends.

- **Decision power of the community:** The most important decisions if taken by the community, the program would be more sustainable because the willingness to maintain their housing, improve it and level of satisfaction would be much higher.
- **Support of Self-Help Activities:** The project is bound to be more sustainable if the activities are self-help in terms of funding, managing, liaisons, technical expertise, etc since it brings about responsibility and more improvement towards the project.
- **Improvement of Socio-Economic situation:** If the program contributes towards improving living standards, creating jobs, contributing towards community development or boosting local commercial enterprises, then it contributes towards sustainability as well.
- **Fixed costs after construction:** If taxes payable to the public institutes or the costs incurred for maintenance after the completion of the construction of the project, are low and can be easily afforded by the occupants, then the program is bound to be sustainable.
- **Creation of local jobs:** The creation of jobs through a program is an added feature which would contribute towards the local economy and improve the local economy hence making the program more desirable and sustainable.
- **Location close to jobs:** Any housing program that manages to avoid displacement of the community and retains the proximity to their jobs, is likely to be more suitable. This maintains low travel costs from home to work.
- **Extent of participation of community groups:** The program is more sustainable if the community groups participate, social-networks are maintained and low-income groups get involved in maintaining their neighbourhood.

### 2.7.4 Physical sustainability

This part assesses whether the physical aspects of the housing makes it sustainable for the users. This includes the location of the building, infrastructural facilities available, the quality of construction and the quality of living spaces.

- **Quality of construction:** At times there are possibilities that the quality of construction for low-income groups is compromised to make the project financially viable or profitable. But if the quality of construction is not satisfactory and demands higher maintenance costs, the construction would not last for long; hence it forms a very important factor in sustainability.

- **Non-Peripheral Locations:** If the re-settlement is located in the peripheries of a city, the community would have to spend on travel costs apart from disruption of their social ties within the city. Hence non-peripheral locations are preferable to make the program sustainable.
- **Provision of Infrastructure and facilities:** The program would be sustainable if infrastructure and facilities are provided to maintain good health conditions and good hygiene standards in the settlements. However, the provision should not be unaffordable costs for the community.
- **Quality of living spaces:** The quality of living spaces forms a very important factor in determining sustainability of a project. If the community is forced to live in congested unit sizes, badly ventilated housing, with narrow passages and lack of open areas(parks), it is likely that the program would not sustain for long.

## 2.8 Conclusion

The literature collection has shown what the various components of housing delivery system are important in understanding the composition of the housing system internationally. A historic overview of different housing delivery options, ranging from market-oriented to self-help approaches with varying government involvement puts across a knowledge structure to understand any housing model. The learning from the approaches also indicates the roles of actors and their relationships which become relevant in understanding the change in the housing delivery with every change in those linkages. The existence of a huge housing finance market opens up the various policies and mechanisms that support housing finance for low income groups. Subsidies through policies, incentives through development rights and micro-finance mechanisms through savings of the community form a part in understanding the suitable possibilities of interventions in any housing program. The program is evaluated in terms of the financial viability and hence defining financial viability for a housing project is necessary and has shown variables which are the costs that go into the project and IRR(internal rate of return) that forms the indicator for the extent of viability of a project. Sustainability of a housing program is decided by various variables, the core being economic, socio-economic, institutional and physical. Each variable has several other criteria for evaluating the sustainability of that program in terms of that variable, for example the economic variable could include the families' contribution as one of the criteria in deciding if the program is economically sustainable.

*The chapter has explored literature on the composition of housing delivery systems and the various approaches that exist internationally. It is polarised between the roles of actors, varied nature of their arrangements and the housing finance mechanisms that exist in every system. It further elaborates on factors that would indicate the financial viability and economic, socio-economic, institutional and physical sustainability of any housing project. The chapter sums up its main findings and links the theories to form the conceptual framework for the research at the end of the consecutive chapter.*

*The next chapter is an extension of the literature and looks at the housing sector in India, specifically Mumbai city, to find the parallels between the international literatures.*

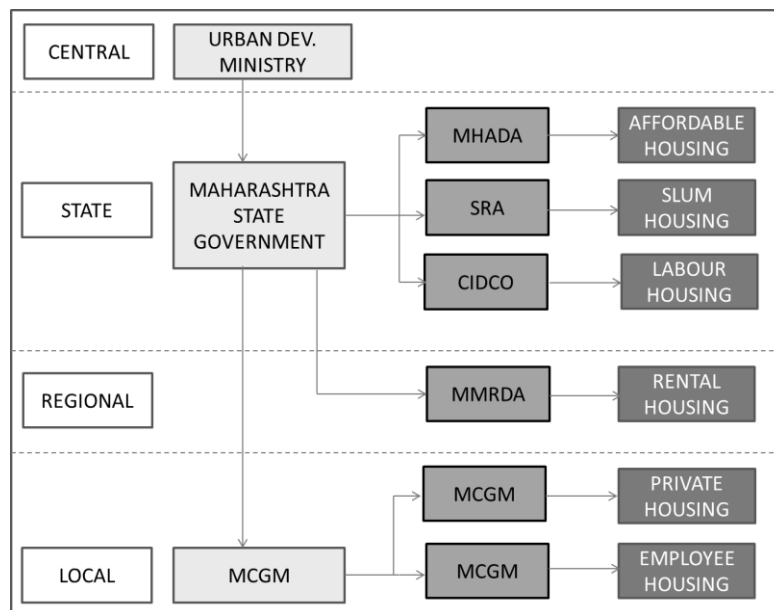
## CHAPTER 3. HOUSING SECTOR INDIA

*This chapter focuses on the housing sector in India to find how the international housing facts correspond with the housing delivery in India. The chapter will start with introducing the housing sector, the institutional arrangements from the national, state to local level and the housing finance industry prevalent in the country. It will look at the role of the actors, their arrangement and responsibilities through existing housing schemes for low income groups in India.*

### 3.1 Introduction

Housing and Urban Development matters, as per the Constitution of India, have been assigned to the State governments which lie in the sub-national level. Many of these functions are further delegated to related state bodies for housing, regional bodies and local governments within cities. (See figure 3.1) The Ministry of Urban development and the Ministry of Urban employment and Poverty alleviation, at the national level play an important role in shaping the policies; which get formulated every 5 years; of the entire nation. They co-ordinate activities of other ministries, state governments and authorities, which include tasks such as allocating resources to the state government through external assisting sources and national financial institutions for housing. (Ministry of Urban development 2011).

**Figure 3. 1 Institutional arrangement of housing delivery in city-Mumbai, state-Maharashtra**



Source: Author, 2011

At the state level, there is primarily the state housing department, which in Maharashtra, is the MHADA (Maharashtra housing and area development authority) which is an apex body that undertakes construction of residential buildings under various housing schemes for different sections of the society, it also takes care of repairs and reconstruction of dilapidated buildings and participates in slum improvement activities of the state.

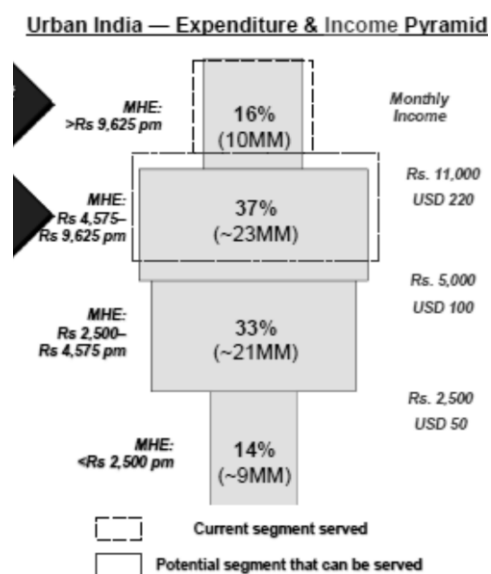
The Slum rehabilitation is a planning authority appointed by the state government, to deal with slum rehabilitation and improvement schemes. (SRA 2011) CIDCO (City and Industrial



Development Corporation of Maharashtra Ltd.) is a designated new town development authority which focuses on planning and development of New Mumbai region a satellite town to Greater Mumbai region. (CIDCO 2011) The MMRDA (Mumbai metropolitan region development authority) is the regional development and planning authority body of Mumbai, which amongst other projects dealing with large infrastructure also deals with rental housing. (MMRDA 2011) The local government MCGM(Municipal corporation of greater Mumbai) provides for the public services and basic infrastructure to the city but also has authority over urban property and house tax and issue permit before starting any building activity. (MCGM 2011). Each of these bodies has several housing schemes under which a housing project takes place. Urban housing schemes are based on two most important components: income groups of households and the floor space index concept (a development control regulation which calculates the ratio of the built-up area permissible to the area of plot).

In India, 70% of housing units constructed comprise of the unorganised sector whereas the remaining 30% is organised sector. There are various stakeholder arrangements for production and delivery of housing in each of these sectors. In cities, the unorganised sector comprises of the local small builders and contractors who build for majority of middle income groups whereas the organised sector usually has an arrangement in which very big private developers get involved in building preferably for higher income groups whereas, government or parastatal organisations cater to the middle income and low income groups. (Nenova 2010) 8 million urban households live in slums, which form 14% of the urban population of India. Urban housing deficit is estimated at 24.7 million units. (Monitor 2009), out of which maximum shortage of housing lies in the economically weaker sections and the low income groups. (Nenova 2010) (See figure 3.2)

Figure 3. 2 The expenditures and income pyramid in Urban India



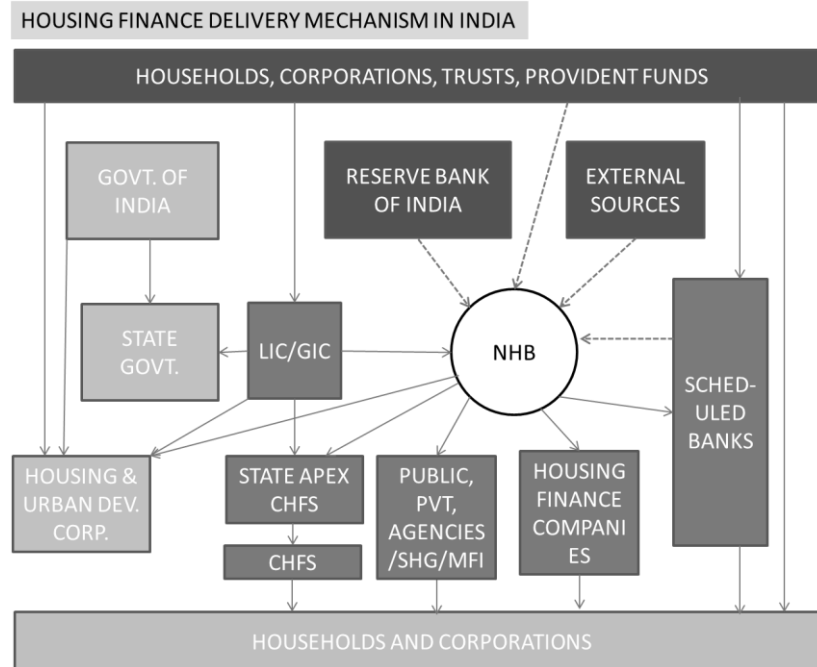
Source: (Nenova 2010)

### 3.2 Housing finance mechanism in India

The figure 3.3 shows the various financial institutions, government bodies, households, insurance companies and corporations involved in the housing finance system in India. The national housing bank which is regulated by the Reserve bank of India is the umbrella financial institution which regulates the housing finance mechanisms in the country. It is directly connected to the insurance companies like GIC and LIC which are semi-private and are the largest insurance companies at the national level regulating the other insurance companies at state and local level. Since the housing responsibilities are delegated to the state government, the housing and urban development ministry at the state level regulate the housing subsidies through public state banks and housing finance institutions. There are commercial banks and private housing finance companies which are also recognised by the national housing bank. The figure shows the flow of funds, guarantees by the insurance

companies, direct and indirect relationship between various bodies and the cash flow between them.

**Figure 3. 3 Housing finance delivery mechanism in India**



Source: (Balaji & Rajmanohar 2008)

### 3.3 Housing schemes for LIG in Mumbai

From the perspective of stakeholder arrangement and management, low income group projects fall under 3 main categories as shown below:

a. **Redevelopment schemes** (by MHADA and SRA)

The schemes used in Mumbai for slum rehabilitation of persons with title deeds, redevelopment of cessed buildings, rehabilitating low income groups and village settlements are similar (As shown in Annex I- Part I). These schemes are formulated under the Development Control Regulations for the city, framed by the state government and the responsibility for approval and procedures are allotted to either type of the state housing bodies like MHADA, SRA and CIDCO depending upon the type and ownership. Under these schemes the model used are very typical where the existing community form a co-operative, unanimously decide for the redevelopment, or are mobilised by NGOs, approach a developer and the developer takes care of the entire process, right from vacating the land to cross-subsidising the housing units. Usually, the developer approaches the community to ask for permission to build, but if there is resistance, there are other forces used to either convince them or evict them. The policies that are followed in each case differ only in terms of the size of tenement provided, development rights (FSI), income group and involvement of separate government agencies. The financial viability of the projects from the developers' perspective will differ based on the marketability of the location, the resistance from the community and the cost recovery for capital and operational costs. Most of the redevelopment projects also have been unsuccessful for the developer due to lack of favourability of these conditions.

Where projects have worked, they have fared badly for the community because they have not been sustainable for the community socio-economically. (Mukhija 2003)

**b. Affordable housing by MHADA and CIDCO**

This scheme is in-house worked by the institutions MHADA and CIDCO, where they build the tenements using tendering process for construction. The houses are sold on lottery based system and are subsidised for low income and middle income groups, which is little below the market rates. They have to pay cost of application and earnest money deposit to the authority if selected and have to take a loan from the housing finance market. The maintenance is taken care by the co-operative after the society is formed, till then it is maintained by MHADA/CIDCO.

**c. Employee/staff housing (MCGM, service institution/private organisation)**

Some of the public sector and private sector employers are given housing facility by their organisations. Since it is very expensive for the employees to afford houses or the high rents in the open market, the organisations provides for housing at subsidised loans which is recovered from their monthly salary. There are various alterations in the model where at times the employees have to form a co-operative and have to be responsible for the housing project whereby the costs of land, maintenance, construction are subsidised by the organisation. The percentage of this model of housing delivery is very low and if exists then its towards the higher officials of the organisation. (CRIT 2007)

**d. Rental housing (by MMRDA)**

This type of housing is relatively new to the city (2008) and wishes to accommodate for 5 lakh self-contained rental housing units of minimum 160sq.ft carpet area in the next 5 years. Low income groups being households earning INR 5,000 per month and above. The project is taken up as a project for the regional scale of provision of rental housing by MMRDA. (MMRDA 2011)

### **3.4. Housing finance for LIG in Mumbai**

The conventional redevelopment schemes transfer the title of the existing tenant from tenancy to ownership under several conditions. Hence the only expenditure for the households is of tax payment to municipality and maintenance as and when organised by the co-operative society formed by inhabitants of the society. For the other categories, the low income groups have to avail of loans from the housing finance market. The only public sector body, HUDCO provides loans to salaried household borrower, for lower flexible interest rates, longer-term maturity of loan and repayment schedules but is restricted due to dependence on State for guarantees. The majority of the LIG segment of society cannot afford access to housing finance from the formal sector, due to lack of formal documents and/or informal mode of income. They have to depend on informal lending from financial agents who charge high interest rates, short to medium-term maturity period and flexible repayment schedule. (UN-HABITAT 2008) There are no private formal housing institutions catering to this segment due to lack of mortgage insurance.

### **3.5 Maintenance of the building:**

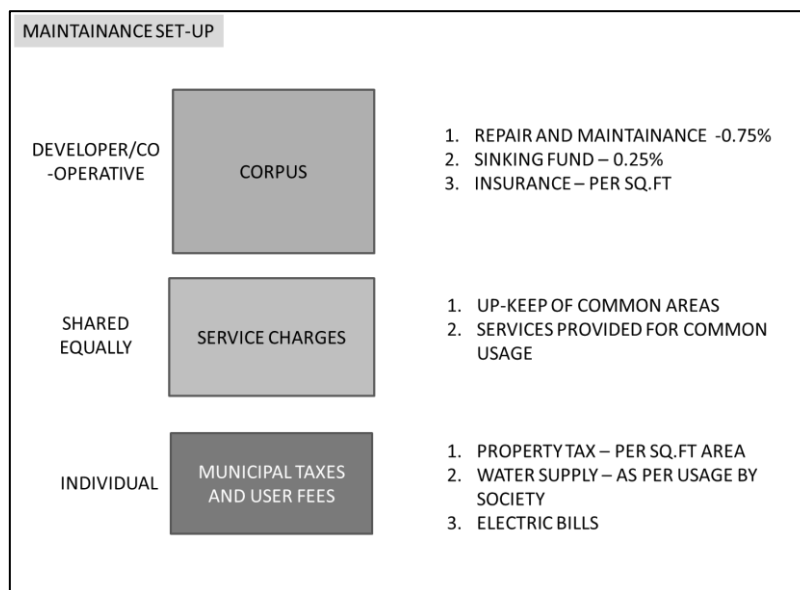
There are various maintenance and repair costs that are to be borne by the users when a co-operative housing society is formed. The main maintenance works in the building include cleanliness of common areas, repair of building structure, up-keep of water system, drainage system, sewerage system, landscape, electric supply, security and administrative services.

The Municipal by-laws for all registered co-operative societies are framed. They are made to help the society abide to certain just rules in collection of contributions for maintenance costs of the building. The norms and costs followed are as under: (Edifice 2006)

1. Service charges need to be equally divided.
2. Repair and maintenance of building, 0.75% of the cost of construction should be assigned.
3. Sinking fund, 0.25% of cost of construction should be deposited in a special bank.
4. Water charges taken by municipality are based on consumption by individual.
5. Insurance fund calculated on square feet area.
6. Property tax, as per Municipality decision on per flat.

The developer usually sets aside the corpus for the society based on these rules. He is responsible for maintenance of the building till all the flats are sold off. He is also responsible for registering the inhabitants of the building as a co-operative housing society with the municipality, and except for the property tax and service charges, the developer has to pay for the rest of the maintenance till all the units are sold and during this period continue paying non-occupancy tax for units which have still not been purchased. Hence the contribution per month for maintenance would be based on program, where the commercial units would pay more for using the more services of the society, a system that even the municipality follows for more taxation of commercial property.

**Figure 3. 4 Maintenance set-up adopted in Mumbai**



Source: Author, 2011

*The chapter has given the basic structural framework of housing delivery in India for low income groups. This will help in placing the case under study within that framework to get a better understanding of the composition of the alternative housing model in terms of its institutional arrangement, financial arrangement and the maintenance set-up.*

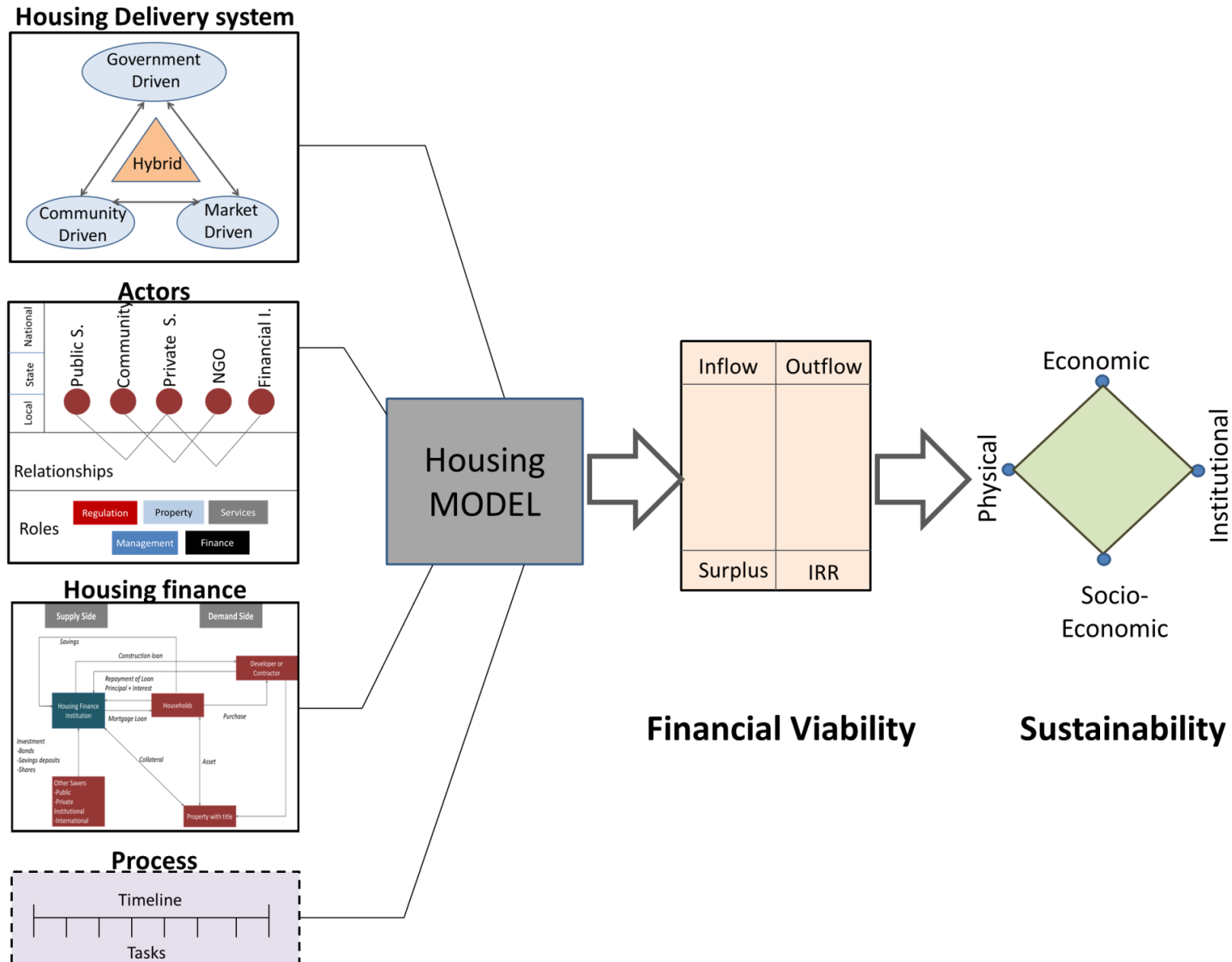
*The chapter and the previous chapter have been summed up and the theories have been linked to form the conceptual framework so as to grasp an overall picture of the research subject.(illustrated on the next page)*

*The next chapter will base its arguments over this literature, carry forward the knowledge gained in refining the research and build up an operationalization framework to carry out the research.*

### 3.6 Conceptual Framework

The figure explains the different components that create a Housing model and the research defines financial viability and sustainability to assess this model. (\* Process has not been covered within the research literature, this includes different timeline and phases that go into different housing models.)

Figure 3. 5  
Conceptual Framework



## CHAPTER 4: RESEARCH DESIGN AND METHODS

*The chapter designs the steps to carry out the operationalization of the main research question asked in the first chapter. It is a quantitative and qualitative exploratory type of research. It introduces the methodology of using case studies to obtain rich comparative data on housing models based nationally and internationally. The common factors to compare the housing case studies are the financial viability and sustainability variables defined in chapter 2. The method of collection of data and method of analysis will be elaborated in this chapter.*

### 4.1. Research Question

**Is the alternative model of the Bharatnagar project the most financially viable and sustainable redevelopment model for the LIG in Mumbai?**

1. What is the existing conventional housing delivery model for LIG adopted in Mumbai for redevelopment?
2. What is the housing delivery model adopted in Bharatnagar for redevelopment?
3. Are the chosen cases financially viable? (\*Cases 1,2 and 3)
4. Are the chosen housing cases sustainable?(\*Cases 1,2,3,4, and 5)
5. What are the lessons that can be learnt from case studies to improve the redevelopment model?

### 4.2 Case Study Methodology

The methodology for carrying out the research is based on collecting case studies pertaining to low income group housing carried out in the nation and internationally. Case studies present history of contemporary events and how they are linked with the context. It tries to highlight why and how particular decisions were taken to implement or reach results. (Yin 2003) Case studies help in understanding complex issues, systems and add strength to the subject from what is previously researched. The case studies would help in bringing about common factors together and due to real-life cases, be able to clarify the boundary between ideologies and realities. A multiple case study helps researcher to explore differences between cases. Comparisons are drawn so as to replicate findings as similarities or differences between those cases and hence selective cases relevant to the research topic have to be chosen. (Yin 2003) In the case of this thesis, case studies are used merely as exploratory tools to generate ideas and apply them to strengthen the protagonist case under scrutiny. In all, there are 5 cases studied in the thesis, 3 are based in Mumbai and are chosen to compare the market-driven, community-driven (more of a hybrid) model and identify which model is the most financially viable and sustainable in the city; the other 2 are international case studies based in Chile and Thailand which are examples of housing delivery through a completely different organisational arrangement giving alternative ideas towards community-approaches, market-approaches and government assistance.

\*The five cases are as follows:

1. Typical redevelopment for LIG in Mumbai

2. The Chawl self-development in Mumbai
3. The alternative approach community self-development, Bharatnagar, Mumbai
4. Community Organisations Development Institute (CODI), Thailand
5. Progressive Housing Program(PH), Chile

### 4.3 Operationalization: Variable and indicators

#### Research sub- question 3: *Is the project financially viable?*

To answer this question the costs incurred and financial contributions by each actor will be analysed in the Cash-flow analysis.

**Table 4.1 Operationalization Chart**

Variables	Indicators	Source	Analysis
<b>Community Contribution</b>			
Construction cost	Construction materials, labour, initiation costs.	Primary data	Cash flow analysis
Transaction cost	Legal fees, title insurance, legal registration, monitoring costs, opportunity costs.	Primary data	Cash flow analysis
Operational funds	Administrative costs, billing and collection	Primary data	Cash flow analysis
Temporary Rehabilitation	Costs of Rehabilitation	Primary data	Cash flow analysis
Premium to state	Total cost of space, money	Primary data	Cash flow analysis
Corpus	Maintenance	Primary data	Cash flow analysis
Municipal taxes	Property tax, service tax, sales tax, land lease.	Primary data	Cash flow analysis
<b>Public Sector</b>			
Subsidy	Subsidy on materials, mortgage, development finance for LIG, etc	Primary data	Cash flow analysis
Land cost	Incentives on land and contribution	Primary data	Cash flow analysis
<b>Financial Institution</b>			
Loan amount	Limit of loan provided to individual/group depending upon collateral/ reliability.	Primary data	Cash flow analysis
Interest rate	Depending upon kind of loan, formal/informal financial institution including risk factor.	Primary data	Cash flow analysis
<b>NGO, Professionals</b>			
Fees	Technical assistance & services	Primary data	Cash flow analysis

Variables	Indicators	Source	Analysis
Private sector			
Construction cost	Construction materials, labour, initiation costs.	Primary data	Discounted cash flow analysis
Transaction cost	Legal fees, title insurance, legal registration, monitoring costs, opportunity costs.	Primary data	Discounted cash flow analysis
Operational funds	Administrative costs, billing and collection	Primary data	Discounted cash flow analysis
Temporary Rehabilitation	Costs of Rehabilitation	Primary data	Discounted cash flow analysis
Premium to state	Total cost of space, money	Primary data	Discounted cash flow analysis
Corpus	Maintenance	Primary data	Discounted cash flow analysis
Municipal taxes	Property tax, service tax, sales tax, land lease.	Primary data	Discounted cash flow analysis

#### **Research sub- question 4: *Is the project sustainable?***

Variables	Indicators	Source	Analysis
Economic Sustainability			
Macroeconomic situation	Economic growth, political situation, market.	Secondary data: Reports, journals, economic updates of the city/state	Qualitative analysis
Mainly Financing by Government	Contribution of govt. through incentives, direct funding, land costs, reduced taxation.	Primary data: Interview with manager, Secondary data: Policy document	Quantitative analysis
International Funding	Contribution of international donors towards specific costs , loans	Primary data: Interview with community manager	Quantitative analysis
Families' contribution	Families' saving capacity, Community saving performance	Primary data: Interview with community manager, community record book	Quantitative analysis
Access to Loans	Informal/formal loans for LIG	Primary data, Secondary data: Interview Banker of co-operative bank, commercial bank, housing finance bank, some informal lenders	Quantitative analysis
Loan Repayment	Capacity to repay by the community, discipline maintaining instrument	Primary data: Record of finances by the co-operative/community group	Quantitative analysis



Variables	Indicators	Source	Analysis
<b>Institutional Sustainability</b>			
Political support	Strong or weak based on involvement in the project.	Primary data: Interview manager, professional group, NGO, political leader of the area.	Qualitative analysis
Links with Parliament	Relationship between public institution and parliament	Primary data : Interview chief executive officer MHADA, Secondary data: Legal documents	Qualitative analysis
Participation of Private construction sector	Extent of participation in the project, for which functions	Primary data: Interview with private sector representative	Qualitative analysis, Quantitative analysis
Participation of Financial Institutions	Formal/informal financial institution, kind of participation, loan, mortgage, development finance, guarantee fund.	Primary data: Interview with institution representative	Quantitative analysis
International Co-operation	Contribution of the international agencies in the project in form of policy, funds.	Primary Data: Interview manager, professional group, NGO.	Qualitative analysis, Quantitative analysis

Variables	Indicators	Source	Analysis
<b>Socio-Economic Sustainability</b>			
Decision power of the community	Decision about type of house, selection of actors, price of house, other decisions of project.	Primary data : Interview community manager, professional group, NGO	Qualitative analysis
Support of Self-help Activities	Legal transactions, construction activities, self-management, skilled/unskilled labour	Primary data : Observation. Interview community manager, professional group, NGO	Qualitative analysis
Improvement of Socio-Economic Situation	Additional functions added in the project like community hall, balwadis, other amenities provided by the project.	Primary data : Interview community manager, professional group, NGO. Secondary data: Development control regulations	Qualitative analysis

Variables	Indicators	Source	Analysis
<b>Socio-Economic Sustainability</b>			
Fixed Costs after construction	Municipal taxes and maintenance costs afforded by relevant actor-community	Primary data : Interview community manager, professional group, NGO.	Qualitative analysis
Self-generating finance component of the project	Investment of surplus from project, renting units, contributions from jobs created by the project.	Primary data Interview community manager, professional group, NGO, private sector.	Qualitative analysis
Creation of Local Jobs	Number of and kind of local jobs created by the project.	Primary data : Interview community manager, professional group, NGO,	Qualitative analysis
Location close to Jobs	Existing location or change in location affecting jobs of the community.	Primary data Interviews to community co-operative secretary	Qualitative analysis
Extent of participation of community group	Initiation of idea of project, key roles taken up while setting-up project, skilled help, identification of issues, overall contribution.	Primary data In-depth interview, Observation, Meetings.	Qualitative analysis
Assurance of continuing to stay there	Plans or strategies for assuring the community members' continuation to live there	Primary data In-depth interview, Observation, Meetings.	Qualitative analysis

Variables	Indicators	Source	Analysis
<b>Physical Sustainability</b>			
Quality of Construction	Structural stability, materials used, construction company involved.	Primary data Observation,Architect	Qualitative analysis
Non-Peripheral Location	In-situ building, displacement of community	Primary data Observation	Qualitative analysis
Provision of Infrastructure and facilities	Municipality provided infrastructure, private sector provision.	Primary data : Interviewcommunity manager,professional group, NGO, Secondary data: Regulations.	Qualitative analysis
Quality of living spaces	Space between adjoining buildings, circulation areas, size of units, work-live conditions, community spaces, park, light and ventilation in building.	Primary data Observation,Architect	Qualitative analysis

## 4.4 Data Collection

The data will be collected from a selected sample size of actors from each stakeholder group as shown in Table 3 Sample chart. The target personnel, important for the cases have been chosen and an in-depth interview has been taken separately for each stakeholder group (refer to Annexes), based on the operationalization chart above. Data collection is both secondary and primary with data collection method, validity and reliability of the data and the method of data analysis will be elaborated in this section.

### 4.4.1. Sample size and selection

Semi-structured interviews will be taken of only key informants of the project which will include at least one actor from each participating actors mentioned in the organisational arrangement for the research.

**Table 4. 2 Sample size chart**

Stakeholders	Specific individuals		Sample Size
Community group	CHS leaders, volunteer, participants, inactive members, political supporters.	CHS representatives Ex-Member of legislative assembly	3
Public Sector	State level housing officials from MHADA, Officials from Municipality.	State Housing Secretary Chief Executive officer- MHADA Chief Planner- MMRDA	3
Private construction sector	Corporate architects, construction manager from corporations, developer involved.	Independent Architect Regional Director of JLLM Chief Architect of Unitech	3
Financial Institutions	Commercial bank manager, HUDCO official, informal lenders, Housing Mortgage bank manager, City Co-operative bank manager.	Union Bank Of India Manager Bombay District Co-operative bank Manager.	3
NGO and Professionals	SDI saving group volunteer, CRIT members, NGO, architects, SPARC chairman.	Director of SPARC Founder and member of CRIT Founder of FTA	4
Total size			16

### 4.4.2. Data Collection method

#### **Typical redevelopment model and Alternative community self-development approach:**

The data is collected from each actor involved. The questionnaires are divided into 2 main categories, 1. Financial viability and 2. Sustainability. The first part only consists of collecting numbers which are asked directly. For example the values to be collected from the state will include the land resource and subsidy, for community and private developers

variables like revenue to the state, construction costs, operational costs, premium to state, etc and for financial institutions loan amounts, risk factors will form the values.

The second part is framed into questions on sustainability corresponding to the indicators mentioned in Operationalisation table 2. To measure the sustainability of the project, both quantitative and qualitative data will be needed. There will be in-depth interviews conducted with each key stakeholder/informants connected directly with the project, whereas policy review and secondary source data will be collected for other stakeholders and technical details about the project. There will also be data collection based on observations on site. The data collected will be narrowed down to accurate answers by triangulating collected data from all interviewees, secondary sources and observations.

#### **Case studies:**

In case of the other case studies, to understand the system of their housing delivery and identifying their stakeholders as well as to assess them based on the sustainability framework, only secondary data is used from journals, reports, websites and books.

#### **4.4.3. Validity and Reliability:**

The information collected is through direct interaction with the stakeholders actively involved in the project. Each stakeholder representative is interviewed to cross-check information which is further triangulated with secondary data like journals, newspaper articles, development regulations, interviews with personnel from similar projects and policy documents. The reliability of the data collected is supported by indicator scales measuring the quality and quantity of the output. This is further represented in the measured radar-diagram. The data collected is genuine but there are possibilities of some assumptions to answer some questions which are based on the data collected from other questions.

#### **4.4.4. Data analysis method**

The variables for financial viability are direct figures, hence they will be calculated with simple cash flow calculations to derive figures of Surplus and internal rate of return. Since the projects chosen are moderate scale projects the construction period is not more than 18 months, hence cash flow analysis will **not** be shown over a long period with discounted cash flows and time value of money. The 3 case studies will be compared to indicate the model which portrays highest viability and the reason behind it.

The other 2 case studies based in Thailand and Chile do not have numerical secondary data available, hence they will not be analysed using the financial viability test.

The sustainability test will be taken first by dividing the 4 main criteria of sustainability into a scoring of 20 points each. In each criterion, the variables which carry high priority are grouped together and marked out of 10, moderate priority marked out of 6 and less priority marked out of 4. The chart below gives the graphical illustration of how this will be organised. The priorities are based on the literature and a detailed account is presented in the *Annex III*.

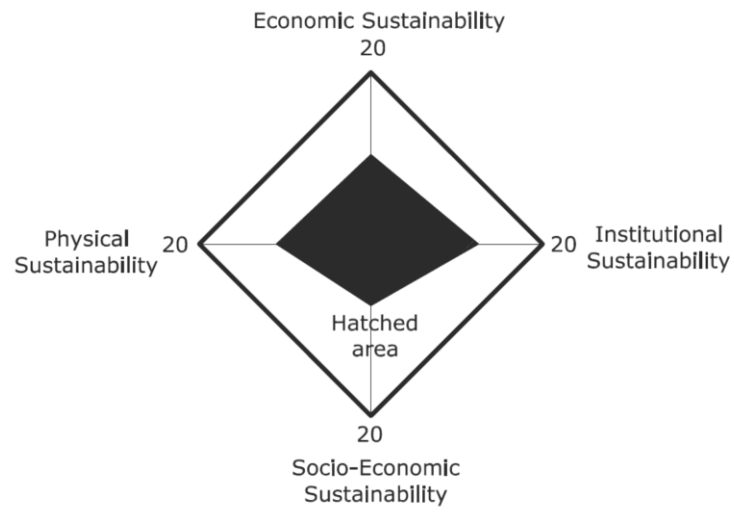
For example:

Economic Sustainability				
Variables	Score (For Example)	Out of	Out of	Score for each priority
Variable 1	2	2.5	10	5
Variable 2	2.5	2.5		
Variable 3	0.5	2.5		
Variable 4	0	2.5		
Variable 5	2	2	6	3.5
Variable 6	1	2		
Variable 7	0.5	2		
Variable 8	0.5	1	4	2
Variable 9	1	1		
Variable 10	0	1		
Variable 11	0.5	1		
<b>Total</b>			<b>20</b>	<b>10.5</b>

The other 3 Sustainability criteria will be evaluated in the same manner as shown in the table and each criterion will have 3 orders of priority in variable indicated by the 3 shades of blue. Each shade has been given a value as per their weight in making that criterion more sustainable. Each variable is evaluated in terms of whether the result is strength or a weakness for the sustainability of housing for low income groups using that program. Further on, the cases that have been studied in Mumbai and international examples will be analysed using the same housing sustainability framework to derive outputs which measure the variables in each case.

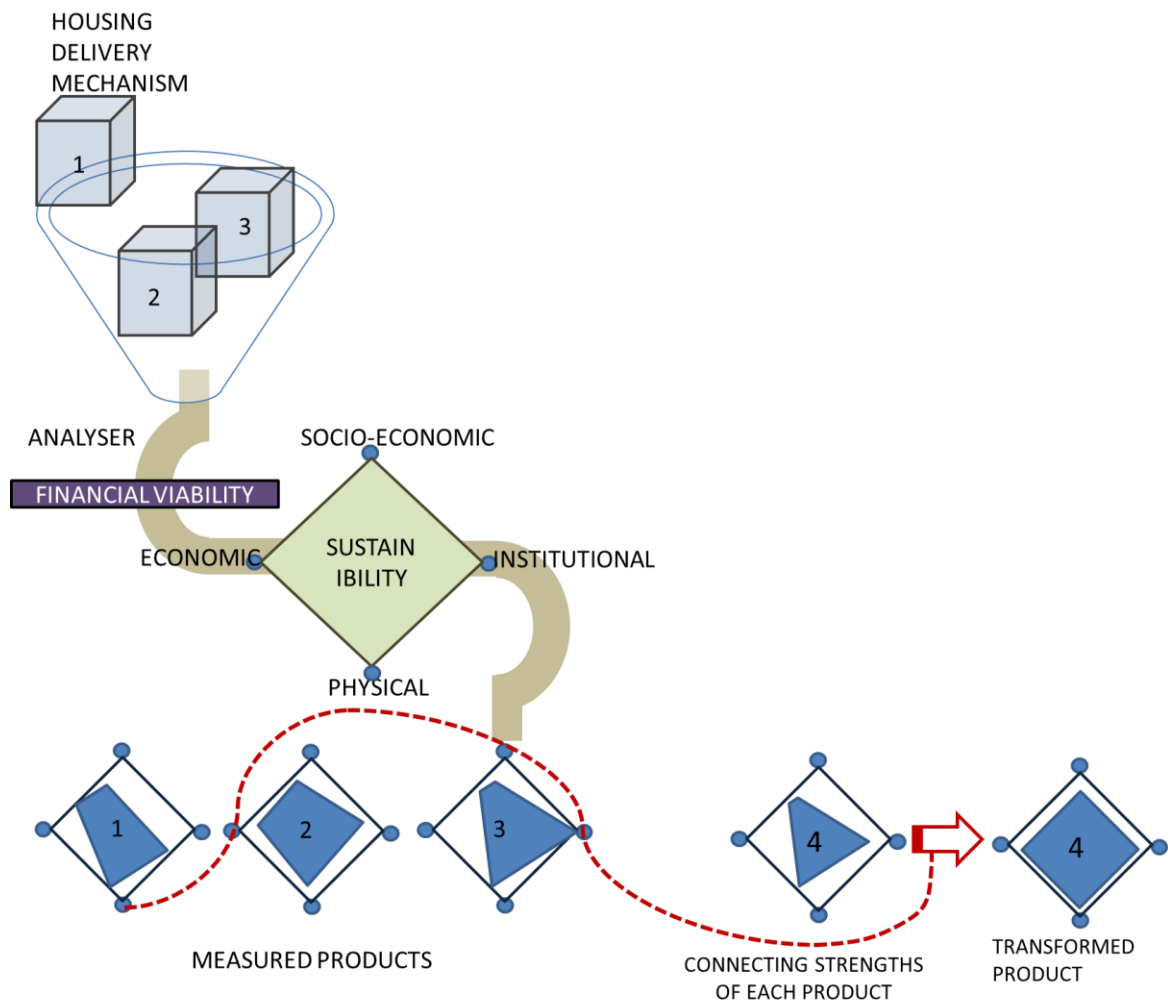
Based on the scores of each of the sustainability criteria, a radar diagram will be made which would graphically indicate the strengths and weaknesses of the model against each criteria, which will look as shown in figure 4.1. The 4 vertices of the square measure the extent of economic, institutional, socio-economic and physical sustainability. The hatched region shows the graphical area indicating the overall sustainability of the model. The measuring and drawing exercise has been done using the software AutoCAD.

**Figure 4. 1 Radar Diagram**



Then a comparative study is done of the radar diagrams in each of the 5 cases deriving their strengths and weaknesses. The pilot project model is assessed similarly and its weak elements will be strengthened by assimilating in it ideas with high scoring variables in other cases. These ideas form the basis of some suggestions to the current model for improvement. This process has been illustrated in the figure 4.2

**Figure 4. 2 Method of Analysis of the case studies**



*This chapter gives the direction which will be followed by the thesis in terms of the structure for collecting and analysing the data that is collected. Case studies have been used in the method to learn from and make complex housing systems much simpler when compared with other models. This chapter also acts as guideline to conduct the research, assort the data and analyse it, score it and to reach to findings in the next chapter.*

## CHAPTER 5: RESEARCH FINDINGS AND ANALYSIS

*The data that has been collected from site and secondary data, has been assorted and arranged to answer the research question in each of the case studies using methods defined in the previous chapter. Each case study is presented with a brief explanation of the housing model, the organisational diagram showing relationship and tasks of each actor, the financial cash flow analysis of the sample project (only in cases of cases based in Mumbai) and the sustainability analysis for every case to determine its strengths and weaknesses in terms of its economic, socio-economic, institutional and physical sustainability scored on a radar diagram. A comparative analysis of these cases is then followed to look at the different types of housing models for low income groups and generate ideas for the improvement of LIG redevelopment schemes in Mumbai.*

### 5.1 Introduction

This chapter will illustrate the findings from the in-depth interviews that were conducted on site in Mumbai. It will also cover the analysis of the collected data to draw conclusions. There are 2 site case studies with primary data and 3 case studies based on secondary data.

### 5.2 Case Study 1: Typical Housing Redevelopment Model, Mumbai.

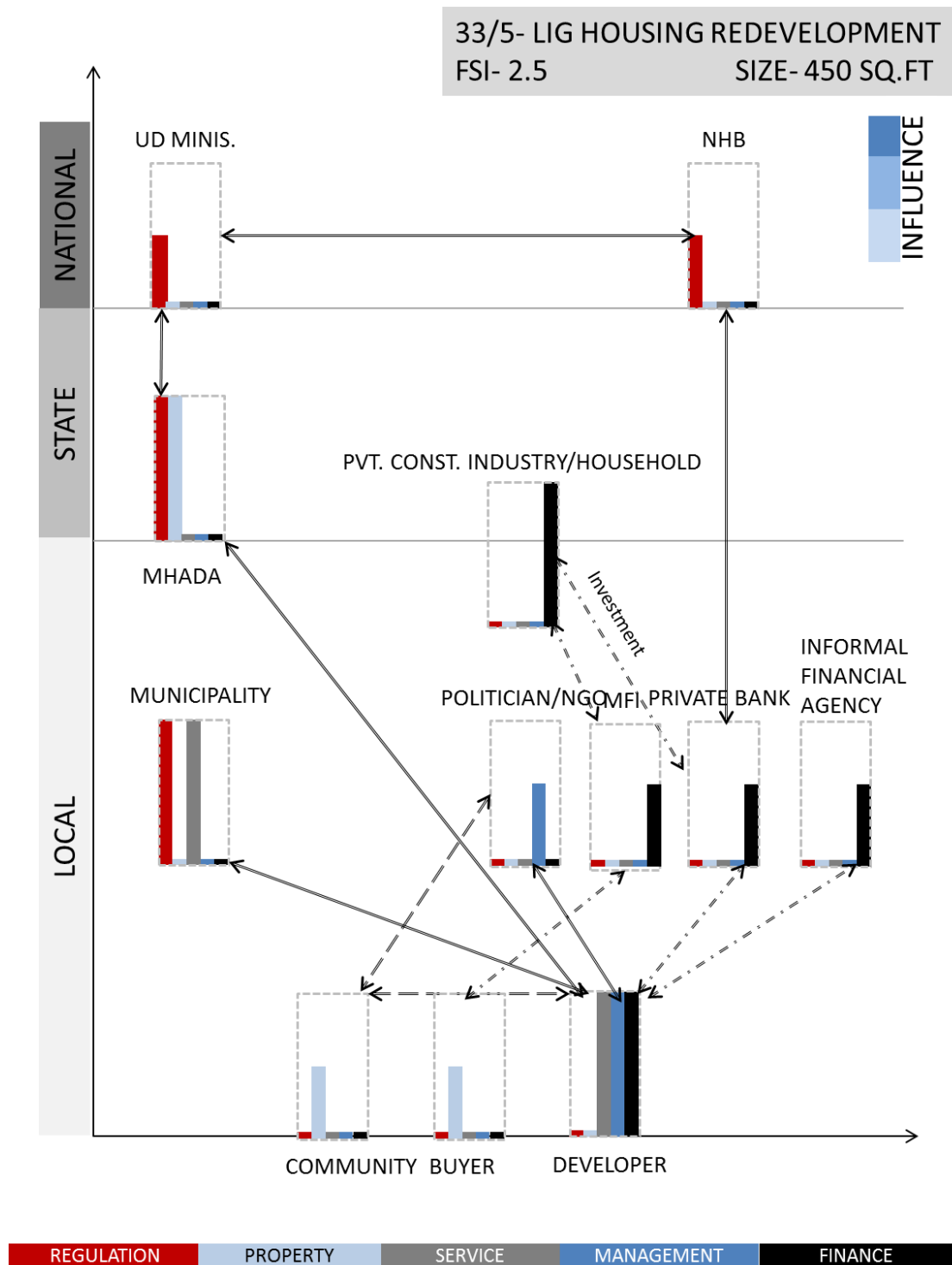
The case is based at a very prime location in Mumbai where the property rates are high. To procure land the developer had to go into various illegal practices which involved transactions through black money and the figures include the inflated amount. To protect the developer and community from any penalties, I will be keeping the identity of the project unrevealed in this thesis as promised by me to them.

The typical housing redevelopment model as explained in the literature of Chapter 3, is a market-driven housing process prevailing in Mumbai, where the basic process is that the government gives an extra development right to the private developing sector in the form of FSI, generate commercial benefit from it and cross-subsidise to rehabilitate the current community on the site for free. Though legally it is allowed for a co-operative housing society to develop their project using this scheme, the process is much more difficult, lacks support and can take a longer time to process. (Mukhija 2001)

The figure 5.1 explains the organisational arrangement that the model follows. At the national level the Urban Development ministry recognises this housing scheme and supports the model in terms of regulations. Also the National Housing Bank (NHB) plays a regulatory role for all financial institutions in the nation, not specific to this scheme but towards housing in general. The state body MHADA has played an important role in formulating the scheme on its land property for low income groups and economically weaker section. As per the scheme the developer has to take 70% consent from the existing community and propose for development under the scheme which allows certain amount of development rights, in this case FSI is 2.5, which amounts to allowable building area being 2.5 times the plot area. The community and the developer sign an agreement as acceptance of this proposal where they receive 450sq.ft of units and eventually get it approval from the MHADA. The developer arranges funds through formal or informal financial institutions. The developer usually needs the help of local politician to get the community to agree for the project. Developer is the sole manager, service provider and financier and makes profit by selling incentive area for commercial/residential purposes.



Figure 5. 1 Low Income group re-development model



- ← → Co-operation
- ← - - - - - → Co-operation(Dependence)
- ← . . . . . → Agreement

Source: Author, 2011

The findings of the variables have been illustrated below:

## 5.2.1 Financial Viability

OUTFLOW		Area(sq.ft)	Cost (Rs./sq.ft)	Total (in Rupees)	Remarks
Capital investment					
Construction costs		73720.1	1500	110580150	Area given to the community is as demanded by them, and 64% more than eligible standard
Transaction costs for Land Procurement				22500000	Primary data
Operational funds			10% of cost of construction	11058015	
Temporary rehabilitation for 130 tenemants		187.5	800	19500000	This is a calculation if the community is to be given compensation to rent a flat temporarily somewhere else in the city. But in this case the rehabilitation is done on site.
Premium to state					Service areas' ready reckoner value* 25% on per floor
Municipal taxes		73720.1	350	25802035	Calculated by Rs.350/sq.ft
Architectural fees		110580150	0.6	66348090	It is 6% of the construction cost, includes liasoning.
R.C.C. Consultant		55290075	0.2	11058015	It is taken as 2% of cost of R.C.C. construction. Considering that RCC construction takes up 50% of cost of total construction.
Lawyer		110580150	0.1	11058015	It is taken as 1% of cost of construction.
Firefighting and lift		110580150	0.5	55290075	
<b>TOTAL</b>				333194395	
<b>INFLOW</b>					
Sale of Sale area		21176.21	20000	423524200	
Provision of Pay and park for 2 floors					This componenet will bring in regular cash flow
Restaurant area for 1 floor					This componenet will bring in regular cash flow
<b>SURPLUS</b>				<b>90329805</b>	
IRR				<b>27.11</b>	

## 5.2.2 Sustainability

Is the housing finance of the project sustainable?

### Economic Sustainability

Macroeconomic situation	The GDP of India has been 1.537 trillion dollars for the year 2010 and would grow by 8.5% next year, with inflation rate of 8.62% which is moderate and hence the good macroeconomic condition. The involvement of housing/land market in the project makes it a full-proof alternative for viability. Since land prices in Mumbai have been growing due to high demand for residential and commercial property.	2
-------------------------	--	---

Financing by Government	None. The government does not finance any housing redevelopment program directly only incentivises by development rights in the form of FSI.	0
International Funding	None	0.5
Families' contribution	There is no financial contribution by the community for the project.	0
Access to Loans	A small or medium sized developer prefers taking loan usually from informal lenders at very high interest rates. In this case the official documents which the banks otherwise ask for do not have to be shown. Big developers access loan from the banks at high interest rates.	2.5
Loan Repayment	There is high loan repayment capacity of the developer due to profits from multiple ventures and high returns from sale.	2
Subsidies	There are no subsidies given for housing by the state, which is in a way good in the long term but to initiate affordability for the buyers it would have been good.	0.5
Direct Delivery of Subsidies to community	None	0
Construction and Land Costs	High displacement informally due to ill-maintained living spaces for rehabilitation.	0.5
Diversity of funding sources	Singular funding.	0
Non-financial contribution after funding ends	No responsible contribution since the beginning of the project by the CHS.	0
		8/20

### **Institutional Sustainability**

Political support	High political support due to tie-up with local politicians.	2
Links with Parliament	Existing policy.	1.5

Participation of Private construction sector	Dominant.	2
Participation of Financial Institutions	If loan is taken, interest rate is very high for developers.	0.5
International Co-operation	None.	2
Participation of NGOs and professionals	None, due to lack of support from the community.	0
Mainly localised implementation	Localised because the status of land and related issues with each area differs.	1.5
Provision of Technical Assistance	Developer-driven.	1.5
Amount of Paperwork	High amount of paperwork, at all departments, MHADA and BMC.	0
Process speed	Slow speed due to heterogeneous community decisions.	0.5
Diversity of institutional actors and other stakeholders	Financially looks like a win-win situation for all, but impact studied is negative.	1
		12.5/20

### Socio-Economic Sustainability

Decision power of the community	Low, name-sake.	0
Support of Self-help Activities	None.	0
Improvement of Socio-Economic Situation	Functions embedded in the building but not maintained due to lack of community participation since the initiation of the program.	0
Fixed Costs after construction	High tax and maintenance costs which the community refuses to pay for reasons of affordability.	0.5
Self-generating finance	Sale component ment for selling only for developers' gain.	1

component of the project		
Creation of Local Jobs	Maybe possible.	0.5
Location close to Jobs	Current location suitable for the community	2
Extent of participation of community group	Very low.	0.5
Assurance of continuing to stay there	No plans. Usually spaces provided are ill-maintained, spaces not livable and high compromise on size of spaces.	0.5
		5/20

### Physical Sustainability

Quality of Construction	To cut costs and gain maximum profit, construction quality is usually compromised on.	1.5
Non-Peripheral Location	At times the builder arranges for rehabilitation on the outskirts of the city detaching the community from their livelihoods,	1.5
Provision of Infrastructure and facilities	The infrastructure provision is done as per regulations but the strategy for maintenance is not organised.	1.5
Quality of living spaces	As observed in maximum redevelopment projects, the quality of spaces is compromised on for high profit gains through selling larger areas for sale.	1
		5.5— 11/20

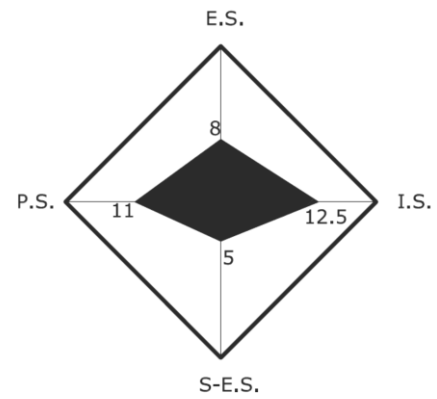
### 5.2.3 Analysis Conclusion

**Economic Sustainability:** This criteria scores 8/20 which means it's a weak system for overall economic sustainability of the project. The main reason for this being, high dependance on the private sector for all the responsibilities of redevelopment ranging from finance, management, land procurement, maintenance cost the building and service provision with no diversity in funding sources at all. There is no contribution of any form from the community during and after the project, no supply-side subsidies and no international funding. This not only burdens the developer but also brings the developer at a high position of domination in the project leading to compromises on many aspects including better quality spaces. Also if due to market turbulence the developer fails invest in redevelopment projects, the low income group would not have any subsidised housing.

**Institutional sustainability:** This criteria scores 12.5/20 which is fairly good. The model of this scheme was developed to satisfy all the actors directly involved in development. The government has institutionalised this model, developer is willing to develop it for high profits, community agrees for the model as they do not have to contribute at all and the financial institutions, though minimal, get involved in lending to the developer as well as the potential buyers of the salable units. The diversity of the actors in the model is fair too.

**Socio-Economic Sustainability:** This criteria scores 5/20 which is a very poor rating. The contribution of this model towards improving the socio-economic conditions of the community is at its least because that is not one of the conscious aims of the policy. There whatsoever is no participation of the community in the development process, and hence no decision making power for fulfilling their wants toward improvement of their social knits and economic growth. There are no guarantees of the community to continue living in the arranged units, which emerges from the problem of the community being fragmented and not taking responsibility for the maintainance apart from the costs for it being unaffordable.

**Physical sustainability:** It scores 11/20 which is fair. The profit making mechanism leads to compromise on quality of living spaces for the communities and since their own participation is not involved in the designing and planning process, they are obliged to accept lack of sufficient community spaces.



Typical redevelopment model in Mumbai

### 5.3. Case Study 2: Chawl Case study, Mumbai

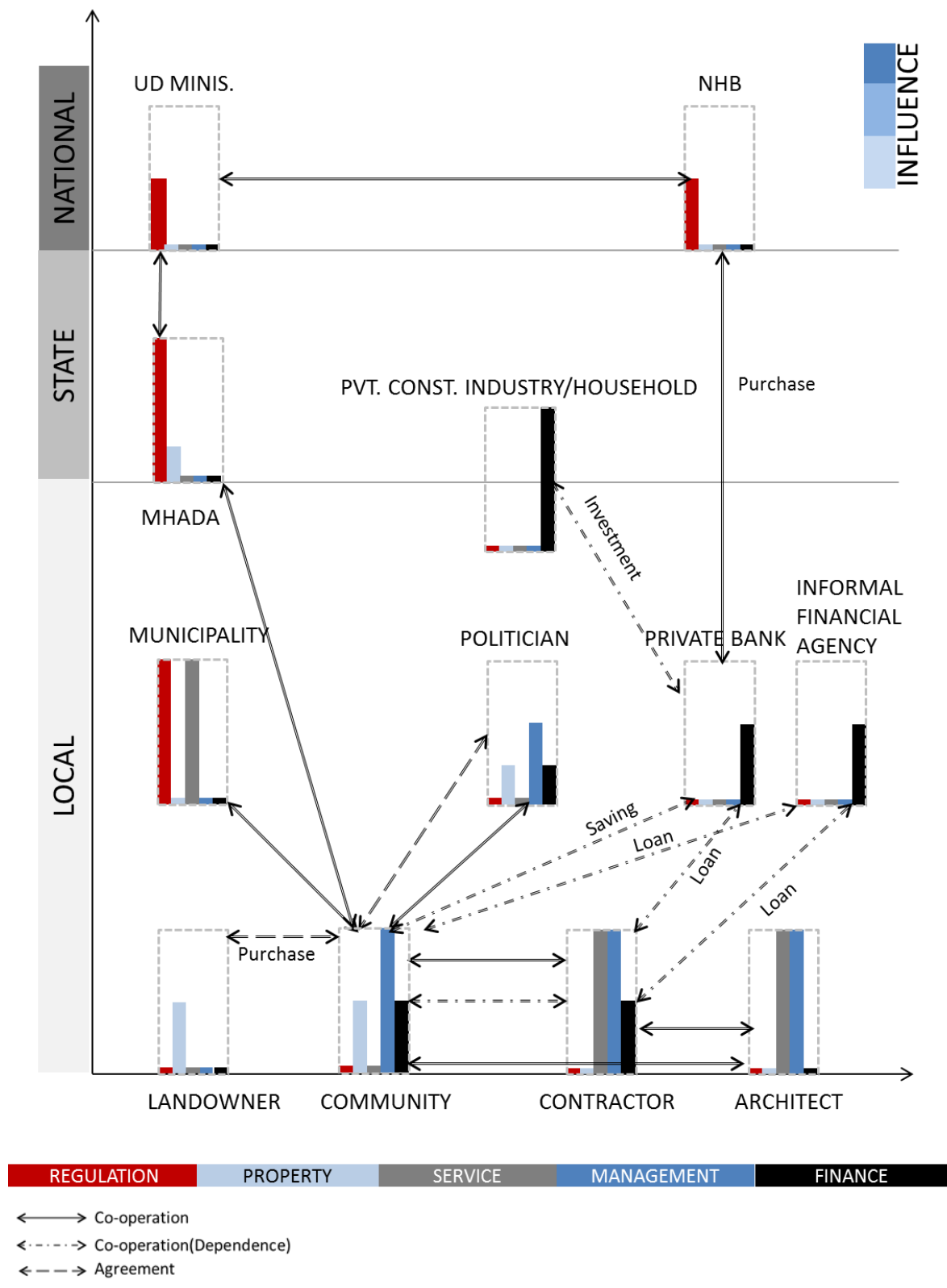
Majority of the old housing stock, formal/informal in the city is either awaiting developer interest on their plot, access to affordable housing finance or demanding a housing scheme which would satisfy their socio-economic wants. As noticed earlier, the redevelopment projects are usually not very successful because of the developers' main interest in gaining profit and ignoring the socio-economic conditions for the community to sustain in the building. In such conditions, it becomes interesting to see innovations using the prevailing systems of legality, informal networks, financing systems to the advantage of the service user. This case captures one such low income tenants group living in the heart of the city in an old housing typology called a *chawl* (\*labour groups housing for labourers working in the mills of the city in the past), where they used the formal and informal systems to get access to housing without succumbing to conventional system of redevelopment. This case study is based on the paper '*How if housing financed? The case of a group of tenements who became property developer in Mumbai, India*' by the author Vinit Mukhija.

The building that was redeveloped was tenement-complex owned by an old private land owner and with low income tenants. The Rent Control Act, had frozen the rates of the rents to be paid by the tenants to the landowner. The landowner hence did not maintain the building willingly with the growing maintenance rates; which made the existing building dilapidated and the tenants feared that it would collapse. The MHADA repaired building which were caught up due to this law, in times of emergency and collected tax from the owner. There was a law which allowed for the MHADA to auction the property to the new owner in case the existing owner did not pay his pending tax dues. This brought the tenants together to form a body, which cleared the dues of the owner with the MHADA and paid 50 months' rent extra to acquire property rights to the complex.

The redevelopment regulations were similar to the **Typical redevelopment policy in Mumbai**, where higher density of development is allowed and additional units are sold in the free market. The organisational diagram 5.2 shows the unique association that composed this model. The key actor in this model is the local politician who initiated the process of getting tenants together to formulate the project and take risks. The tenants formed a co-operative and arranged for a contractor and an architect to give them technical assistance. There were a lot of funding sources. They were from the savings, borrowing from informal lenders (since formal loans were not accessible to a society with incomplete financial security papers from each tenant in such a heterogeneous group), investment from the contractor, pre-sale agreements with buyers, credit from construction dealers and resale of old building materials. The policy at the state level-MHADA is supported by the national level Urban Development Ministry. At the local level the co-operative had to pay taxes to the municipality for infrastructure services.

Figure 5.2 Cess self-redevelopment model

33/7- CESS-SELF-DEVELOPMENT



Source: Author, 2011



### 5.3.1 Financial Viability

OUTFLOW		Area(sq.ft)	Cost (Rs./sq.ft)	Total (in Rupees)	Remarks
Capital investment					
Construction costs				50,000,000	Including upgrades with interest payments
Transaction costs for Land Procurement				185000	In this case the community paid the land owner 50 months rent and the debt that the owner had to pay the MHADA.
Operational funds					
Temporary rehabilitation					The community members lived with their relatives or as tenants in other places.Data of which is not available
Premium to state					It was a private development and no negotiation for premium was done in exchange for land or development rights.
Architects' fees, bribes and development fees including municipal taxes				10,000,000	
<b>TOTAL</b>				<b>60,185,000</b>	
<b>INFLOW</b>					
Sale of Sale area		21528.52	3252.78	70027539.29	
<b>SURPLUS</b>				<b>9842539.286</b>	
IRR				<b>16.35</b>	

### 5.3.2 Sustainability:

Is the housing finance of the project sustainable?

#### Economic Sustainability

Macroeconomic situation	In 1991, government of India revised the development regulations to allow for higher Floor space index(FSI), where the builder could sell the additional area to cross-subsidise for the rehabilitation for the community. The real estate prices went historically high in Mumbai, making this market- oriented model more lucrative.	1.5
Mainly Financing by Government	The project was treated like any other developer-driven project where the involvement of the government is only as a facilitator.	0.5
International Funding	None	0.5

Families' contribution	The community contributed financially and towards management of the project, right from the initiation, construction and selling of apartments.	2
Access to Loans	Loans were accessed from informal and formal sources. But the community took an informal loan for which they paid 24-26% interest. The formal access to loans is very minimal and also rests on high personal collateral which cannot be the collective land asset.	0
Loan Repayment	The repayment capacity in this case of moderate, and also depended on sales of the units.	1
Subsidies	None	0
Direct Delivery of Subsidies to community	None	0
Construction and Land Costs	There is no recorded data whether the community continued to live there or some sold their units and left.	0.5
Diversity of funding sources	Co-operatives' saving, income from selling teak beams from old structure, Pre-sale agreements with buyers, informal loans, contractor's investment, overdraft borrowing and credit from construction dealers. These were the multiple funding sources.	1
Non-financial contribution after funding ends	No responsible contribution since the beginning of the project by the CHS.	1.5
		8.5/20

### **Institutional Sustainability**

Political support	The area corporator was a part of the tenants community hence there was strong support and initiation from him.	2
Links with Parliament	No links with parliament	0
Participation of Private construction	The private construction contractor was hired for the project and he invested 8% towards it.	2

sector		
Participation of Financial Institutions	A local commercial bank was used by the contractor for attaining overdraft loan for the construction.	1.5
International Co-operation	None.	1
Participation of NGOs and professionals	None.	0
Mainly localised implementation	Localised because the status of land and related issues with each area differs.	1.5
Provision of Technical Assistance	The politician employed his architect friend to work for the designing and planning of the project. Liaison was done by the community itself.	1.5
Amount of Paperwork	High amount of paperwork, at all departments, MHADA and BMC.	0
Process speed	After acquiring ownership it took 12 years more to plan, finance and redevelop the property.	0
Diversity of institutional actors and other stakeholders	Professional Architect, Contractor, Community, Politician, Informal lenders and bank were directly or indirectly part of the project.	1.5
		11/20

### Socio-Economic Sustainability

Decision power of the community	The community took all the decisions of redevelopment.	2
Support of Self-help Activities	Liaison, participating in developing design plans and managing the project was community driven.	2
Improvement of Socio-Economic Situation	Yes there were better living standards attained, better community facilities provided.	2

Fixed Costs after construction	The property taxes were increased for redeveloped cess buildings. The maintenance became more than the previous property.	0.5
Self-generating finance component of the project	No rental service was provided but the investment of sale property would give regular inflow.	2.5
Creation of Local Jobs	Not recorded.	0
Location close to Jobs	Current location suitable for the community	2
Extent of participation of community group	Very high.	2
Assurance of continuing to stay there	The community was responsible for the entire project and selected their own accommodations in the design, with additions in their flat area. Families with schools and work places in the same area would definitely continue to live there.	2.5
		15.5/20

### Physical Sustainability

Quality of Construction	The quality of construction was personally checked by the community.	2.5
Non-Peripheral Location	The community continued to live on the same site.	2.5
Provision of Infrastructure and facilities	The infrastructure provision is done as per regulations. The surplus was used for all additional maintenance expenses.	2
Quality of living spaces	Though the community took all the decisions in the planning, size of accommodation and quality of spaces, there was also the component of wanting to make enough profit out of the project. Yet, the size of units was kept more than minimal unit size.	2.5
		9.5— 19/20

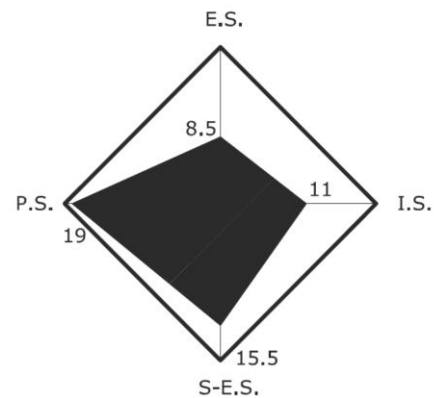
### 5.3.3 Analysis Conclusion

**Economic Sustainability:** This criterion scored 8.5/20 which is relatively weak. The model was completely dependent on the market mechanism for sale of the free sale units. In conditions of fluctuating markets the model would not work, and hence it's not sustainable to depend purely on it. The development finance that was needed for the project, was not accessible from the formal banks because it rested on high personal collateral from each member of the community which was not possible. Due to lack of accessibility to finance, they had to hunt for different sources, which as a model cannot be replicated. They depended on informal loans, with high interest rates, which amounted to twice the amount of a formal loan.

**Institutional Sustainability:** This criteria scores 11/20 which is fair. There was a strong political support to the project since one of the tenants was a local politician. The architect and the contractor were equally involved as individuals and acquaintances in the project. The contractor(forming a part of the private construction sector), helped in accessing overdraft loan for the community on the basis of his financial security, besides investing 8% within the project. The project was built within the redevelopment policy of the city; hence the government had no objections while approving the project. The project is institutionally sustainable because there has been enough diversity of actors in the project and the informal nature of the participation allows for flexibility and better understanding of the communities' needs. The politician played a very crucial role in actively involving himself in the project at a localised level, a role that would also be suitable for an NGO or government official.

**Socio-Economic Sustainability:** This criterion scored 15.5/20 which is very good. The decision making power and self-help tasks of management, planning, designing and execution were taken up by the community group, hence there is more responsibility towards the project and satisfaction too. Better living conditions of the community were met with the redevelopment. The construction was on the same site, hence there were no displacements and no lack of convenience to travel to work places. The community made profit out of this venture the deposit of which would be used for future maintenance.

**Physical sustainability:** It scores very high 19/20 which means excellent. The quality of construction was personally checked by the community and was of a good quality. The size of the units was more than the standard size and the community's personal interaction with the architect helped in fulfilling their needs of community office and common areas too.



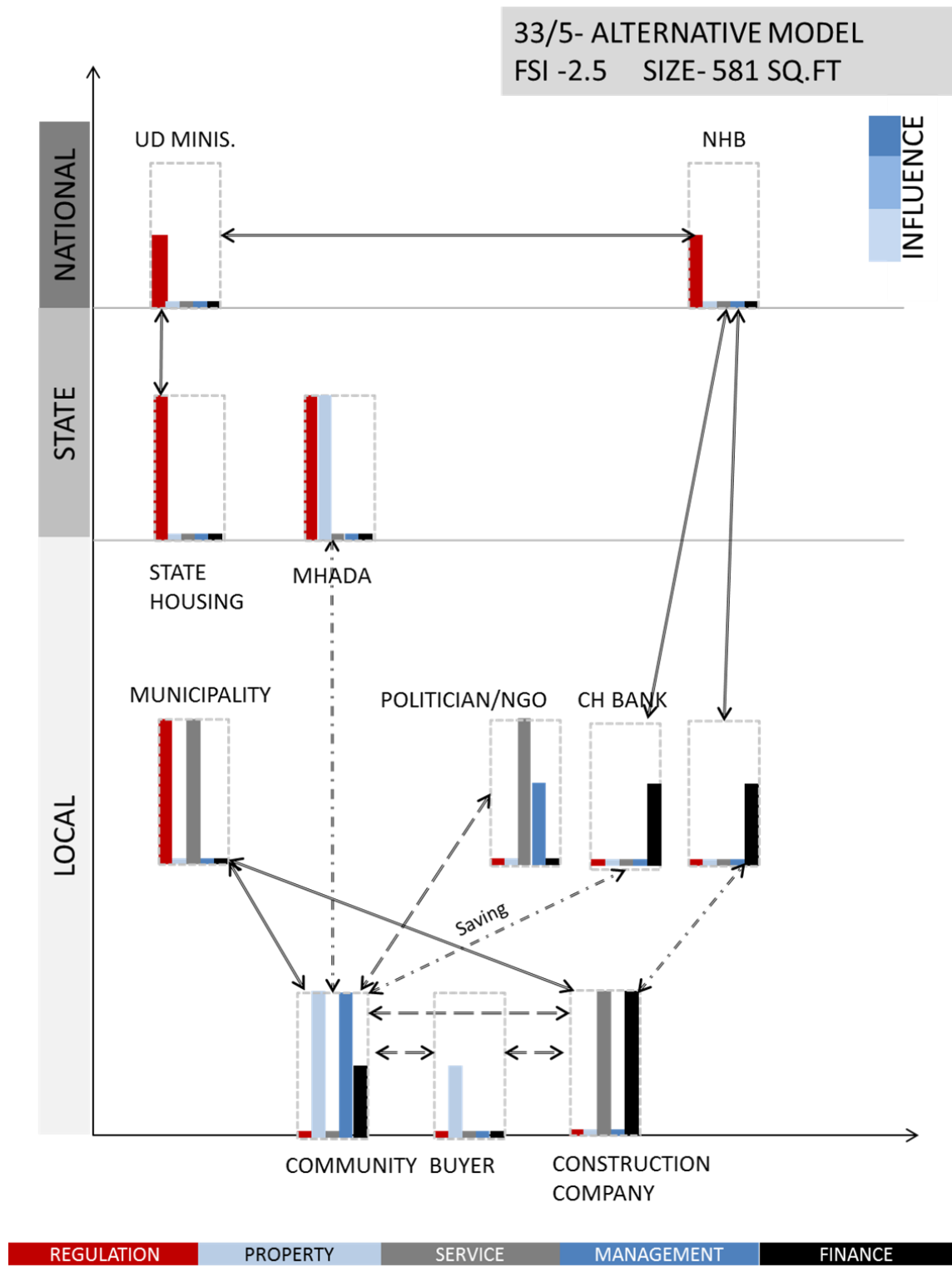
Chawl redevelopment model community-driven in Mumbai

#### **5.4 Case Study 3: Alternative housing model for redevelopment, Bharatnagar project, Mumbai**

This project is the one the author is currently working on in Mumbai. It is an alternative approach to the Typical housing redevelopment models in the city for the low income group. Due to high market value of the land, it follows similar model of redevelopment, where development rights to build for higher density are given and extra built-up area would be sold in the free market, the difference being that the community takes up the higher decisions in the redevelopment of the government land instead of the private sector. The strategy of land sharing is applied, where after getting the rights to build on the land from the state body MHADA, a part of the development rights would be sold to the private sector and the sale amount generated would be used by the community to build their own accommodations on the same property. The community participation in this case is the beginning as well as an end-product.

As shown in the organisational diagram 5.3, the community gets help from the NGO in terms of planning, design and technical expertise. The community initiates the land procurement process with the help of NGOs and makes space for negotiations with the government on decisions of premiums as per the regulations of the scheme. Then it negotiates with the private construction company that would be interested in purchasing from them the newly acquired development rights. It also proposes for the same company to construct the community residential building and recover the construction costs from part of the sale amount that they gain from the same company for selling the development rights. The architect and technical team is decided by the community, which is the NGO that has been supporting the community in this process. The architectural design and type of living spaces is decided by community by negotiating with the hired architects.

Figure 5. 3 Alternative self-redevelopment housing model



- ← → Co-operation
- ← - - - - - → Co-operation(Dependence)
- ← ··· ··· ··· → Agreement

Source: Author, 2011

## 5.4.1 Financial viability

OUTFLOW		Area(sq.ft)	Cost (Rs./sq.ft)	Total (in Rupees)	Remarks
Construction costs		111552	1500	167328000	Area given to the community is as demanded by them, and 64% more than eligible standard
Transaction costs for Land Procurement				20900000	The amount is computed from another project with similar context, land value, housing scheme but developed by a developer.
Operational funds			10% of cost of construction	16732800	
Temporary rehabilitation on site for 160 households		150	800	19200000	This is a calculation if the community is to be given compensation to rent a flat temporarily somewhere else in the city. But in this case the rehabilitation is done on site.
Premium to state		75257.65	20% of 3678.93(the ready reckoner value)	55373525.26	Besides premium the state body also demands for 23 flats in the building
Municipal taxes		111552	350	39043200	Approximate value taken computing from the similar project elsewhere
Architectural fees		167328000	0.1	16732800	It is 6% of the construction cost, includes liasoning. But in this case an NGO is giving architectural services the cost will not be more than 1% of the cost of construction and liasoning is managed by the community.
R.C.C. Consultant				0	It is taken as 2% of cost of R.C.C. construction. But in this case the construction company manages these costs in the construction costs itself.
Lawyer				0	The community did not need a lawyer.
Firefighting and lift		167328000	0.5	83664000	
<b>TOTAL</b>				<b>418974325.3</b>	
<b>INFLOW</b>					
Sale area		38969.74	15000	584546100	
<b>SURPLUS</b>				<b>165571774.7</b>	
<b>IRR</b>				<b>39.52</b>	

## 5.4.2 Sustainability

Is the housing finance of the project sustainable?

### Economic Sustainability

Macroeconomic situation	The involvement of housing/land market in the project makes it a full-proof alternative for viability	2
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Mainly Financing by Government	Land conveyance at the cost of paying rents for the next ten years.	1.5
International Funding	None	0.5
Families' contribution	Rs. 350/household. But 10% of the community has not been disciplined/could not afford to pay their rent. Leading to a other community memebers paying on their behalf. Yet Rs. 50,00,000 yet to be paid to clear dues.	2
Access to Loans	No informal loans involved. If for construction a loan is needed, co-operative banks offer loans to the CHS for construction, but through detailed status of individual households.	0.5
Loan Repayment	The CHS, has been maintaining discipline in dealing with the savings in the bank, but no loan can be given without requisite documents.	1
Subsidies	None	0.5
Direct Delivery of Subsidies to community	None	0
Construction and Land Costs	10-15% of community wants to move out.	1.5
Diversity of funding sources	Construction company, bank if papers are arranged and community contributions.	0.5
Non-financial contribution after funding ends	Representatives of CHS give time without any payment which they claim to continue after the project ends. They also hire a chartered accountant to check their accounts and audits.	2
		12/20

### **Institutional Sustainability**

Political support	Federation of Tenants association heads were Ex-politicians and have a strong influence in the government.	1
Links with Parliament	The state housing body is more powerful than the national body in	1.5

	influencing decisions of the state and city.	
Participation of Private construction sector	Willingness of private construction companies in the project is high owing to the prime location of land.	0.75
Participation of Financial Institutions	No direct participation as yet, but would be helpful if approached for construction loan.	0.5
International Co-operation	None.	2
Participation of NGOs and professionals	High voluntary participation of NGOs and experts in design, management. Possibility of fund(CLIFF)	1
Mainly localised implementation	Localised because the status of land and related issues with each area differs.	1.5
Provision of Technical Assistance	Technical assistance from community themselves as well as supporting NGOs.	1.5
Amount of Paperwork	High amount of paperwork, at all departments, MHADA and BMC.	0
Process speed	Already has taken 5 years and will take more.	0
Diversity of institutional actors and other stakeholders	Shown in diagram	1
		10.75/20

### Socio-Economic Sustainability

Decision power of the community	High involvement in decisions about the project.	2.5
Support of Self-help Activities	Completely controlled by the community	2.5

Improvement of Socio-Economic Situation	All additional amenities provided along with certain rental income and expectancy of higher standard of living.	2
Fixed Costs after construction	Due to investment of corpus fund and monthly income through rents, municipal taxes will be easily afforded.	1.5
Self-generating finance component of the project	Corpus investment, selling residential units, renting shops generate income for the CHS.	2
Creation of Local Jobs	None created by the project which can be pre-planned.	0.5
Location close to Jobs	Current location suitable for the community	2
Extent of participation of community group	Solely run by the community	2
Assurance of continuing to stay there	10-15% planning to move out due to increase in family size. But the determination with which the community has been working for improving their standard of living suggests that most will continue to live there.	1.5
		16.5/20

### Physical Sustainability

Quality of Construction	Large companies like Mahindra& Mahindra, TATAs and L&T are being approached, which guarantee good quality of construction.	2.5
Non-Peripheral Location	Transit accommodation also will be on-site.	2.5
Provision of Infrastructure and facilities	Since the procedure of development with the BMC is unchanged, the infrastructure provision remains the same.	2
Quality of living spaces	The NGO- CRIT is responsible for assuring the quality of spaces and designs accordingly.	2.5
		9.5-- 19

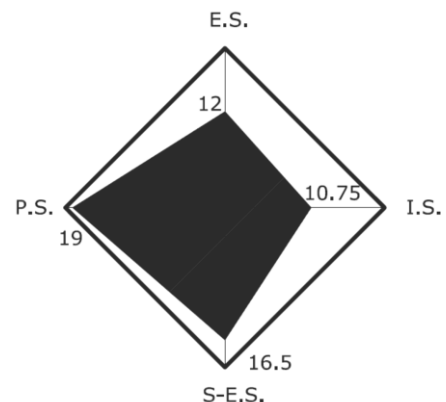
### 5.4.3 Analysis Conclusion

**Economic Sustainability:** The criterion scores 12/20 which is good. The real estate in Mumbai has been going through very little fluctuations and though the prices are highly inflated, real estate development forms a high investment sector generating maximum revenue. Although the project is market-oriented, it is also equally community-driven and there is financial strength shown by the community in terms of their savings and financial management. The land is provided by the state in return for agreement of compensation from the community. Sustainable high property rates, private sector interest, community interest and government provision of land are all factors that contribute towards economic sustainability.

**Institutional Sustainability:** The criterion scores 10.75 which means fair. The approach has not yet been institutionalised, but got support from the state housing body. Diverse actors get involved in the process like the state, the private construction sector, politically strong and technically sound NGOs and more importantly the community, but the financial institutional support for the project is minimal. The government still continues to play the role of the facilitator and hence there have been no special treatment to create a space for negotiations and speed the process of development for a community-approach. There will have to be many more additions to the system to lure more such approaches and to make it more institutionally sustainable.

**Socio-Economic Sustainability:** This category scores 16.5/20 which is excellent. The decision power rests with the community and they are not only participative but they control and drive the entire process of development. Their aim of improving their standard of living through the project drives them into participating at every level of planning, design and property related negotiations. There are possibilities of having self-generating finance even after completion of the project. Besides permanent housing, temporary rehabilitation also will take place on the same site.

**Physical Sustainability:** This category scores 19/20 which is excellent. The selection of construction company as per their quality in construction would be taken by the community with help from the NGOs, to assure good quality construction. The site planning and design also is decided by the community's co-ordination with the NGO-CRIT whose main focus is about designing for better quality spaces.



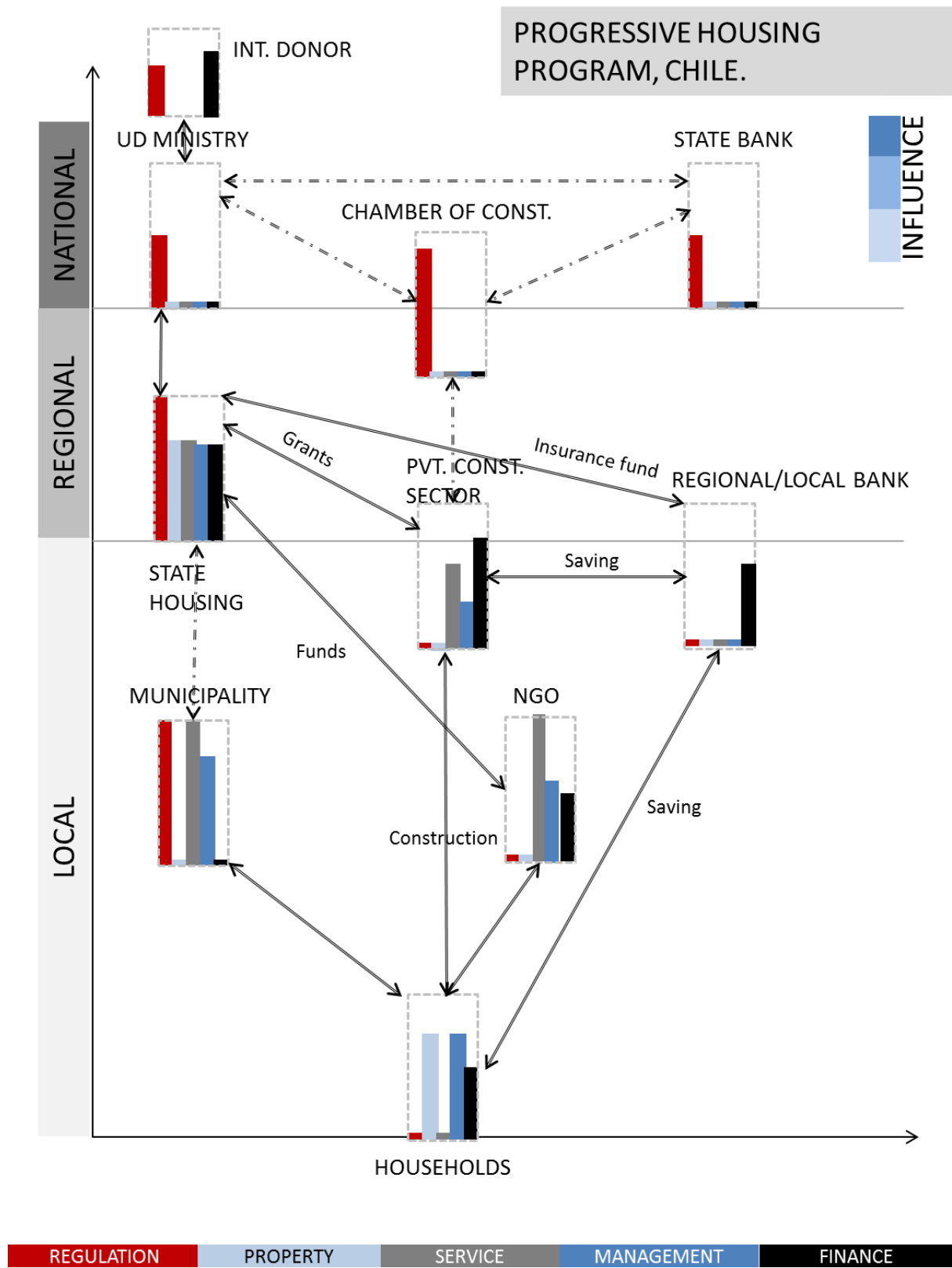
Alternative redevelopment model community-driven in Mumbai

## **5.5 Case Study 4: Progressive Housing, Chile**

This case is chosen to study since it has the components of new incremental housing for low-income with the active participation of the community. It is a hybrid model which includes the community-driven and market driven process to deliver housing. There was community savings contribution to the project and construction by the private sector. The NGO participated in helping to acquire subsidy and organise the process of land purchase, legal registration etc. It went through difficulties in getting support from the state housing bodies initially and a struggle to involve participation of construction enterprise. This housing program is considered successful because access to formal housing solution was achieved for the low income groups. (Frank 2008)

The organisational diagram 5.4 illustrates the delivery of housing with various actors. The households first need to apply to the regional government of housing after fulfilling a two-year saving plan with the bank. Those savings and government grant are granted to the private sector to construct the new housing units. The NGO helps the community group with technical assistance to acquire land and subsidies. The government through international grants are able to subsidise or provide for grants. The private sector builds on the land provided or has to resettle the community elsewhere(usually outskirts) due to lack of space to afford standard size units for all households within the city.

Figure 5. 4 Progressive Housing program, Chile



Source: Author, 2011

## 5.5.1 Sustainability

Is the housing finance of the project sustainable?

### Economic Sustainability

Macroeconomic situation	Chile has a good macroeconomic situation and stable politics.	2
Mainly Financing by Government	Due to good economic condition, the program could partly be financed by the government.	1.5
International Funding	The program received high international bilateral support from Sweden, Germany, Holland, Denmark and Norway as non-refundable grants, which makes the program less sustainable in the long run.	0.5
Families' contribution	Community had to fulfil a two-year saving plan with money deposited in a bank as savings account to be able to score high and get selected/qualified for the housing program.	2
Access to Loans	Access to loans for this program were not secured.	0
Loan Repayment	Not applicable.	0
Subsidies	Grants were given to the private construction sector to build for this program. It reaches 97% of the investment. High subsidy means low sustainability for the program.	0
Direct Delivery of Subsidies to community	The subsidies were given to the private sector.	0
Construction and Land Costs	Land prices were high and contracted out to the private sector. The size of land plots were small for the housing program to be carried out in the city, hence they were rehabilitated in the periphery.	0.5

Diversity of funding sources	The funding was carried by the government, private sector and the community savings, but majority by the government, hence it is not diverse.	0
Non-financial contribution after funding ends	It has not been recorded.	0
		6.5/20

### **Institutional Sustainability**

Political support	It was not very strong.	1
Links with Parliament	There was high links with the public institution and the parliament hence it was easy to acquire funds.	1.5
Participation of Private construction sector	The private sector participation in this program was a must, where the government highly subsidised the low income housing by providing grants and contracting out land to the private sector.	1.5
Participation of Financial Institutions	No, private institutions did not participate due to high risk and non-profitability.	0
International Co-operation	There was high international funding and technical support for the program	1
Participation of NGOs and professionals	There was some participation of NGOs in strengthening the communities but they had difficulty in dealing with bureaucracy.	1
Mainly localised implementation	The program was local, where NGOs participated more and community could decide on the type of investment and purchase the plot.	1.5
Provision of Technical Assistance	It was provided by the government and NGOs.	1.5
Amount of Paperwork	High paperwork was involved, even for the documentation and application process.	0
Process speed	Process speed for complete process was slow which totally	0.5



	rounded up to 4 years.	
Diversity of institutional actors and other stakeholders	There is fair amount of diversity where the state, the NGOs, the private sector and the community had to participate in the process compulsorily.	1.5
		10/20

### Socio-Economic Sustainability

Decision power of the community	There was fair decision making by community where the choice of plot and other decisions relating to the project were made by them. But the dominant role was played by the private sector and government.	2
Support of Self-help Activities	Yes, self-help activities by community were seen as pre-conditions to qualify for the program.	2
Improvement of Socio-Economic Situation	There was not an overall socio-economic improvement due to this program, in fact after the houses were delivered the government cut down on other social investments.	0
Fixed Costs after construction	Fixed costs were high and some families moved out.	0.5
Self-generating finance component of the project	No self-generating components were introduced.	0
Creation of Local Jobs	No local jobs were created.	0
Location close to Jobs	Most locations were at the periphery, so distance to the jobs increased and travel costs increased.	0
Extent of participation of community group	The program partly was successful in enabling the participation of community groups.	1.5
Assurance of continuing to stay there	There was no strategy to retain the community in the housing, which were usually far from main city.	0.5

		6.5/20
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**Physical Sustainability**

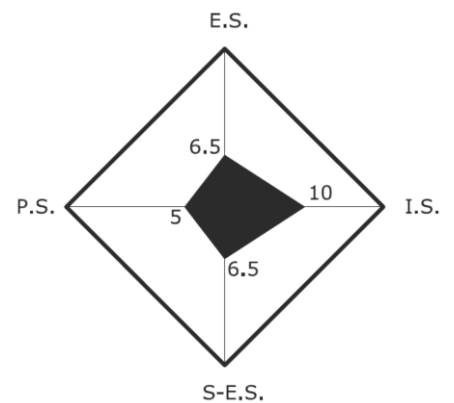
Quality of Construction	The quality of construction went unchecked and hence was low.	0.5
Non-Peripheral Location	With lower land prices and higher profit margins, the developers provided settlements in the periphery of the city.	0
Provision of Infrastructure and facilities	Partly the infrastructure was provided. But the municipality, developer and community were equally responsible for the provision which was not done successfully.	1.5
Quality of living spaces	Since the provision of infrastructure was lacking and the quality of construction was poor, it affects the quality of living spaces..	0.5
		2.5— 5/20

**5.5.2 Analysis Conclusion**

**Economic Sustainability:** The criterion scores 6.5/20 which indicates weak economic sustainability. Although the community had to have savings in the bank to be applicable for the government subsidies, the strength of the community in the process is far less than the state housing body and private sector decisions. The dependence on high amount of grants from the government and community savings to the private sector to build as well as get profit out of the city land, which eventually led the community to be resettled in the outskirts, makes the program highly unsustainable.

**Institutional sustainability:** This criterion scores 10/20 which means it is fairly sustainable. There were diverse actors involved in the process including the NGOs with task to assist the community technically with land procurement process, the state that was the main actor in providing the grants and approvals, the private sector that constructed and sold the property to the community and free market, as well as the community itself that participated by saving in the bank and being part of the development process. But there was also high international support, high paperwork involved, slow process speed and poor political support, which makes the program moderately sustainable.

**Socio-Economic Sustainability:** This criterion scores less 6.5/20, which means that the socio-economically the program did not fare well. Formally the program was institutionalized to involve community participation, but it was not effective in making the community powerful enough to take decisions on the location of their housing project. Most of the housing was taken place on the outskirts of the city making it very expensive for the community to travel to work place. Fixed costs after construction on the project were high, which also made the community to move out from their houses to affordable areas. Not only



Progressive housing program, Chile

was the housing project ineffective in improving socio-economic state of the community, but also other social investments were cut down by the government to after the houses were delivered.

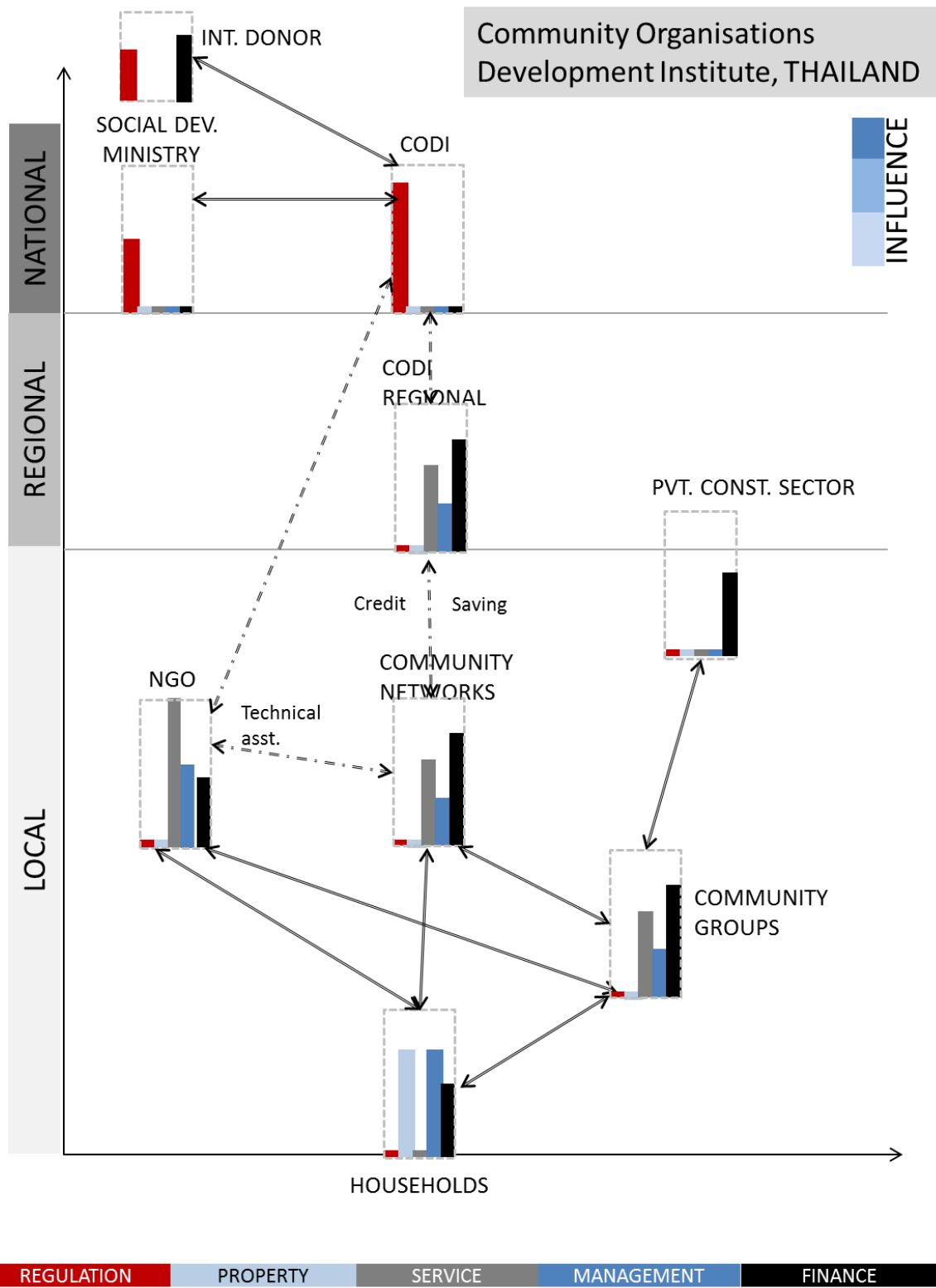
**Physical Sustainability:** The physical sustainability score very poor 5/20. There was no body which checked the construction quality and with the private sector concerned about profit, the quality of living spaces and infrastructure was very poor.

## **5.6 Case Study 5: Community Organisation Development Institute, Thailand**

This is a case where the project strength lies in the establishment of saving groups and hence involvement of micro-finance. CODI is institutionalised as a public department and primarily is a community-oriented program which promotes community saving groups. The program helps in improving the living conditions of the low-income families where community is the prime owner, of the process which involves financial decisions, management and negotiations. The system works with the networks within various community groups and with public institutions right from city level to national level. These groups take each other's support for gaining strength in negotiations with the government authorities as well as get access to loans related to new housing, housing improvement, etc. CODI helps in supporting the groups financially for the same purposes. This is a relevant case study where there could be leanings from how the community is empowered and how the government body to support such initiatives is institutionalised. (Frank 2008)

The organization diagram 5.5 shows the way in which the housing program is organized with its various actors and their tasks. CODI is public department at the national level and the regional level and has established revolving fund, and from other sources and is used for project proposals. The communities form saving groups which are used as contributions to CODI and also to strengthen the community processes. Vertical and horizontal support networks are established in this program. The vertical networks involve community groups linked with public institutions both at the city level and provincial level to help them out with their housing problems. The horizontal networks refer to the mutual support of the saving groups at the local level. The technical assistance is given by NGOs at the community group level and neighbourhood level. The private sector, if involved, is appointed by the community groups. At the national level the public sector (Ministry of Social development) regulated the CODI at the national and the regional level. The relationship between communities delves on the philosophy that communities can achieve housing improvements only through each other's support, to gain strength and negotiate with the government authorities.

Figure 5. 5 CODI, Thailand



Source: (Frank 2008)

## 5.6.1 Sustainability

Is the housing finance of the project sustainable?

### Economic Sustainability

Macroeconomic situation	High economic growth and low inflation rate helped in creating fund for the program.	1.5
Mainly Financing by Government	It received public financial support to establish revolving fund and the CODI staffs is paid by public expenditures.	1.5
International Funding	Cooperation was established from the World Bank and Danish government.	0
Families' contribution	The community participated in terms of saving and management of the project.	2
Access to Loans	The savings group itself facilitated access to loan.	2
Loan Repayment	The repayment has been high to CODI, where the interest rates were subsidised.	2
Subsidies	Low subsidies were provided by low interest rates and they have to repay the loan taken.	0.5
Direct Delivery of Subsidies to community	The community decides the type of investment and hence the subsidies were given directly to the community groups.	1
Construction and Land Costs	High land prices influenced the location of the projects.	0.5
Diversity of funding sources	The funding is mainly provided by the community, the CODI and international organisations to subsidise the loan given to the	0.5

	community.	
Non-financial contribution after funding ends	The community groups are very strong in organising and managing the projects and its but obvious that they would continue contributing towards the sustainability of the housing even after funding ends.	1.5
		13/20

### Institutional Sustainability

Political support	Due to high political support the fund could be arranged.	2
Links with Parliament	There has been a strong link of public institution and parliament which has facilitated the operation of the program.	1.5
Participation of Private construction sector	The community took decisions over whether the private sector is needed in the project at all. So in some cases it was assigned to private construction sector and in some it was self-constructed.	1
Participation of Financial Institutions	There have been no involvement of the financial institution because the savings groups itself offered for the loans.	0
International Co-operation	International financing and technical support has been high making the program less sustainable in the long run.	1
Participation of NGOs and professionals	The program is pro-NGOs. They have been instrumental in the operation of CODI and for organising the community groups.	2
Mainly localised implementation	Yes, the program has been implemented majorly at the local level.	1.5
Provision of Technical Assistance	The CODI and NGOs have been technical advisors to the community for establishing business plan for each community group.	1.5
Amount of Paperwork	There is high amount of paperwork involved with the business plan selection.	0
Process speed	The average speed would be 4 years with the entire process of saving, making business plan and approval.	0.5
Diversity of institutional actors and other stakeholders	The program is Community dominated and hence the diversity of actors is restricted.	1.5

		12.5/20
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### Socio-Economic Sustainability

Decision power of the community	Most of the decisions are made by the community, with the management, the business plan, the planning, design and option to involve the private sector.	2.5
Support of Self-help Activities	Yes the program supported self-help activities with sometimes self-construction without the involvement of private construction sector.	2.5
Improvement of Socio-Economic Situation	Yes there has been socio-economic improvement not only in terms of acquiring better living conditions and organising community groups, but they have also helped creation of micro-enterprises and supported weaker families economically.	2
Fixed Costs after construction	There have been high costs after construction which has forced some families to move away.	0.5
Self-generating finance component of the project	The community group organisations are such that there would always be self-generating finance in the organisation by investment of savings. But no finance component at project level.	0
Creation of Local Jobs	Yes, the program focuses mainly on improving community networks, through any socio-economic activity, here being housing. So, yes, jobs were created.	2
Location close to Jobs	No, the locations were in the periphery, away from jobs, hence forcing some families to move back to the city centre.	0
Extent of participation of community group	The program focussed on building community networks, hence the participation has been high.	2
Assurance of continuing to stay there	There is no strategy employed in assuring that the community would stay back, but the social networks are so strongly built that there are only factors like jobs that would pull them away from the community.	0.5
		12/20

## Physical Sustainability

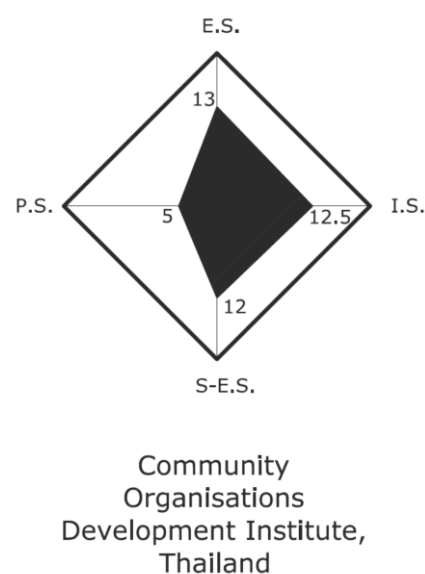
Quality of Construction	The quality has been moderate to poor.	0.5
Non-Peripheral Location	The location of sites has usually been peripheral, due to scarce availability of cheap land.	0
Provision of Infrastructure and facilities	Partly infrastructure is provided by the program but not a part of main focus, hence the decision has mainly lied with the community.	1.5
Quality of living spaces	The quality of construction is poor and so is the availability of infrastructure which suggests that the quality of spaces would have been poor.	0.5
		2.5— 20

### 5.6.2 Analysis Conclusion

**Economic Sustainability:** This criterion scores well, 13/20. The program has families' contribution, and CODI collects funds from several sources including these contributions through revolving funds, income generation, community enterprises, network revolving funds, guarantee funds, etc. Loans are given to the community groups by CODI at very low interest rates. The community groups are strong and their financial contributions with government support make the program economically sustainable.

**Institutional Sustainability:** This criterion scores 12.5/20 which indicates that it is a good example of institutional sustainability. The community savings and participation are institutionalized, with NGOs being an intrinsic part of the process and main support from CODI as public sector offering help financially and politically. But the program is weak in terms of private sector involvement, where the community decides whether they are necessary for their project. The financial institutions are also not involved because CODI itself offers for loans.

**Socio-Economic Sustainability:** The criterion scores 12/20 which is a good score. The main objective of the program is to build community networks and take support from each other to solve socio-economic issues. The program is so built that the decisions about planning, design and even business plan is articulated by the community groups. The program has supported small enterprises and added to community networks. The community also takes up construction activities without involving private sector. But in terms of proximity of their jobs to the new housing units, it was in the periphery and hence inconvenient to travel. Overall the program created socio-economic improvement through an institutionalized way, giving opportunities for growth in ideas in the program and hence is very sustainable.





**Physical Sustainability:** The physical sustainability suffers with 5/20. The reason being, that the infrastructural services provided by the program are have not been checked as a part of their responsibilities, which have affected the quality of living spaces. The peripheral locations of this site have forced communities to come back to the city hence physical component of the project needs to be improved.

## 5.7 Overview of Analysis Results

There are two case studies analyzed using data from primary sources and three case studies using secondary data. The main purpose of the cases was to improve the current housing scenario of redevelopment projects in Mumbai. The first case of typical redevelopment model is studied to understand the current housing mechanisms clearly through analysis and pinpoint the advantages and drawbacks of the system. The alternative approach case study has been studied and reveals that there are various open ends to it and potential to direct it into a better solution in terms of financial viability and sustainability. The other three cases are to explore the different ways in which community participation, government involvement and market can be integrated in housing delivery system. All the case studies are analyzed to extract the ideas of intervention and suggest for possibilities in the current redevelopment systems in Mumbai.

### 5.7.1 Types of approaches for Housing delivery

The analysis reveals that there are three extreme approaches that exist in housing internationally:

1. Community driven approach
2. Market driven approach
3. Government driven approach.

All these approaches may either be dominant or exist are in varying contents in every project. They stand for the effort that is being put in from all these three ends for the housing delivery to work. They are not always institutionalized but they exist as systems. The figure 5.6 shows the various permutations and combinations that can be possible of the varying efforts of each of the three approaches. The H, M and L stand for high, medium and low proportion of standing within the project or the extent of driving force to run the program. It also places the studied case studies in the table to identify their composition.

**Figure 5. 6 Permutation and Combinations of varying proportions of each approach**

Project	Comm.	Market	Govt.
Alt*	H	H	H
Alt*	H	H	M
Chawl	H	H	L
Alt*	H	M	H
Alt*	H	M	M
	H	M	L
CODI	H	L	H
	H	L	M
	H	L	L

Project	Comm.	Market	Govt.
	M	H	H
	M	H	M
	M	H	L
Chile	M	M	H
	M	M	M
	M	M	L
	M	L	H
	M	L	M
	M	L	L

Project	Comm.	Market	Govt.
	L	H	H
	L	H	M
Typical	L	H	L
	L	M	H
	L	M	M
	L	M	L
	L	L	H
	L	L	M
	L	L	L

H-High

M-Medium

L- Low

Typical: Case Study 1

Chawl: Case Study 2

\*Alt: Case Study 3 with 4 possibilities

Chile: Case Study 4

CODI : Case Study 5

A **high level of community driven approach** would mean that the management, planning, decision making, the community support, and all the contributions necessary to drive the process. The **medium level** means that there is involvement of the community in the program, where maybe there is sufficient savings contribution, or strong NGO support helping participation, but have not controlled the final decision making of the program. The **low level** means that the government has facilitated the process to allow for community participation, but the actual participation is passive.

A **high level of market driven approach** would mean that the stake of the market in the project is very high and without it, no LIG program would be possible. There is large investment of the market in such projects and usually in such a scenario the other actors are sub-serviant to the market. The **medium level** means that the market is given enough incentive to come in, where the profits of the process are not very high but good enough to survive as a market sector in the housing industry. The low level of intervention, means that there is no interest of private sector in the low income group housing, the government policies are not effective in getting the market in, or there is another system of housing delivery in the system where the power of the free market is extremely reduced.

The **high level of government intervention** means that the government is responsible for the provision which involves planning, investment, grants, policy making, management and at times even provision of labour. The **medium-level** of government intervention would mean that the government is actively participating in the process and has sufficient level of control in it. Their involvement could be in the form of supervising, providing subsidies, making and protecting regulations and encouraging a collaborative participation. **Low level** of government intervention would mean that the government is a very passive actor in the whole process and is either sub-serviant to the market demands or the community demands and only acts as a facilitator of their requirements.

The cases cannot be generalised and stated that one particular combination is the best for all. Each case has its own combination and, the country, its macro-economic conditions, its cultural behaviour of the people in that region, existing strengths of the society and many such softer factors would be needed to develop their own combination of proportion of each approach. The alternative approach case study 3, is a project under progress in Mumbai and could have 1 of the 4 possibilities by the time it gets completed. Let us review the strengths and weaknesses of each of the case studies.

### 5.7.2 Financial viability overview

The typical redevelopment model shows that the project is highly financially viable with 27% IRR, and since it is market-oriented, the main intension is to make profit. The project includes sale of the incentive area and the calculation has taken the fixed sale amount only, although the developer could have plans of renting a part of the area, which would generate more inflow every month.

Typical redevelopment model in Mumbai				
	Built up-Area(sq.ft)	Cost (Rs./sq.ft)	Total (in Rupees)	Remarks
OUTFLOW	73720.1	4519.72	333194395	
INFLOW	73720.1	5745.03	423524200	
SURPLUS	73720.1	1225.31	90329805	
IRR			27%	

The Bharatnagar model, is a mixed/hybrid of self-help approach and market-oriented approach. Since there is component of attracting the market to cross-subsidise the project through high demand land, the project becomes highly financially viable. Since the NGOs have given technical help to the project, the costs on expertise have been very minimal.

The Chawl redevelopment case study has higher construction costs hence it is not as financially viable as the other two cases. But the case has its own advantages where there are different sources of funding which reduces risk on a single actor.

The first 3 cases have the same context of Mumbai and the same background housing scheme. The financial analysis reveals that all the three models are financially viable within the market context of the city. The technical expertise is highly subsidised in the alternative case, due to the involvement of the supporting NGOs, hence the IRR is the highest compared to other two cases. The Bharatnagar case study shows high financial viability also due to viable conditions for all actors involved with surpluses in most cases, which in the case of typical redevelopment is restricted dominantly to the developer and in the chawl case dominantly to the community. All these models show that the projects are viable for all actors. (See figure 2.3 and Annex II- Part2)

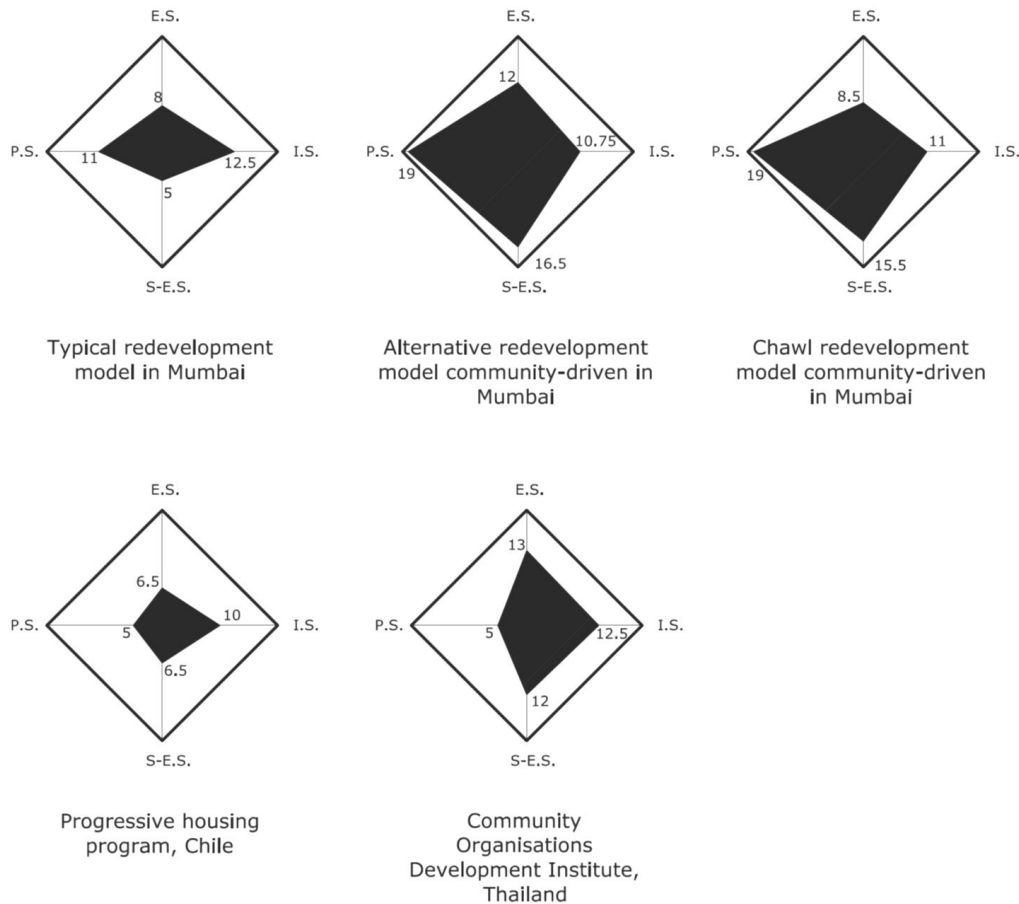
Alternative redevelopment model in Mumbai				
	Built up-Area(sq.ft)	Cost (Rs./sq.ft)	Total (in Rupees)	Remarks
OUTFLOW	111552	3872.63	431999467	
INFLOW	111552	5240.12	584546100	
SURPLUS	111552	1367.49	152546633	
IRR			35%	

Chawl redevelopment case in Mumbai				
	Built up-Area(sq.ft)	Cost (Rs./sq.ft)	Total (in Rupees)	Remarks
OUTFLOW	8,522.32	7062.04	60185000	
INFLOW	8,522.32	8216.96	70027539	
SURPLUS	8,522.32	1154.91	9842539.3	
IRR			16%	

### 5.7.3 Sustainability Analysis results

The figure 5.7 gives a comparative overview of all the case studies in terms of sustainability of the program economically, institutionally, socio-economically and physically for the selected approaches involved.

**Figure 5. 7 Diagrammatic overview of case study results in terms of sustainability of housing program**



In terms of **economic sustainability**, the CODI case scores the highest due because the low income communities that need the housing facility actively spend for it and make it work due to rotating funds and saving mechanism. The combination of approaches shows high community participation, low market involvement and high government support to institutionalize efforts from community networks. The loans are granted to the entire community group by CODI and they do not verify income levels of each family to sanction the loan. The government institutionalizes this community participation and also the choice to involve the private sector in their development process or not is left to their disposal. But due to the lack of market support in the projects, the efficiency and effective production of mass housing is lost. Also their absence as entities in the development process affects the overall economic growth of the country.

The alternative approach case study also shows high economic sustainability due to noticeable pressure and response from community, government, NGO and the market dynamics. The other cases score poorly either due to high government provided subsidy, dependence on markets to drive the project, domination of only one actor over the others or high dependence on informal finance production.

The **institutional sustainability** of all the projects is more or less average. This is a case because the programs selected have a sufficient participation from all different kinds of actors. The ones which are less experimental and follow the government schemes stringently, score higher since the government in those cases since the efforts are already institutionalized. For example in the CODI case, the community participation has already

been institutionalized, in the typical redevelopment case on Mumbai also the market-driven approach flows smoothly with the institutionalized scheme.

The **socio-economic sustainability** is highest in the case of Alternative re-development case, the Chawl self-development case and good in CODI. The reason being, that the community in all these cases is the decision-making entity. They play an important role in their self-development process. But in the rest of the cases, the social-knits of the community are affected due to displacement of housing of the communities towards the periphery making travel costs to work unaffordable; also, no participation from the community affects economic growth too.

The **physical sustainability** in the case of the Alternative redevelopment case and Chawl case score exceptionally high because the community is involved in the main decisions in the quality of construction and quality of spaces along with their technical experts and their wants are supported by the market too, hence it is effective. Even the location of resettlement is the site itself. But in other cases the physical sustainability varies. In the CODI case, although the community takes part in the planning and design processes, the funds for construction are limited, ones generated from savings and loans and hence quality of construction and even location is compromised. Also the infrastructure facilities are not under the responsibility circle of the community, hence the quality is sub-standard. In the Typical redevelopment case and PH-Chile case, the private developers compromise on the space and quality of construction, sometimes on location of resettlement too, for gaining maximum profit.

## 5.8 Conclusion

The case studies that are analyzed and concluded reveal interesting patterns of approaches which are applicable to all housing models that exist internationally. The financial viability test indicates that the alternative redevelopment model generates the highest Internal Rate of Return. The high and low scores of sustainability explain the various compositional factors that contribute towards the results of the test. The strengths in some case are the community driven approaches and high weaknesses in the systemic composition of market-driven approaches. In some cases there is a lack of government effort and in some high government interventions have made the programs unsustainable. We can conclude that depending upon the context of the city, its culture and its potential for growth, suitable model should be developed because there are varying results from different approaches and the definition of maintaining a balance will alter from one condition to the other.

*This chapter analyses different case studies of housing deliveries and reveals various approaches towards development that are noticed in all housing delivery systems across the world. The financial viability analyses and sustainability analysis framework developed in the previous chapter are used as machines to assort information collected in each case. The analysis overview reveals various patters of common factors that increase or decrease sustainability of the housing program. The next chapter will sum up the entire contents of the thesis with brief conclusion on the entire process and some suggestions from learning of the case studies.*

## CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

*The previous chapter process the collected data for each case study revealing certain patterns of development and their pros and cons. This chapter will conclude the entire thesis and answer the research questions in brief. It will also have suggestions and recommendations from the analyses and learning through the research process.*

### 6.1 Conclusion

The thesis started with giving an idea to the reader about the problems faced by the city Mumbai in the mechanisms of the redevelopment housing schemes that cater to the low income groups. The main problems highlighted being the domination of the market approach for housing the poor, the lack of space for the LIG communities within the development process, leading to forces gentrification and the lack of government intervention besides facilitation of housing. With literature review into the housing mechanism concepts, role of actors, their relationships and the housing finance systems existent internationally and within the local context, the thesis was able to formulate the conceptual framework, in the boundaries of which the research would take place. The conceptual framework consists of four main components, the housing delivery options, roles of actors, housing finance mechanisms and process. The composition of housing models was understood using these lenses.

The cases were selected on the basis of hunting for learning so as to fill in improvements within the dark spots of the main case study of Bharatnagar. These cases were then evaluated in terms of financial viability and sustainability so as to get a comparative and comprehensive knowledge of the various approaches before proposing for suggestion within the Bharatnagar model.

The thesis will conclude by answering the research questions:

**Is the alternative model of the Bharatnagar project the most financially viable and sustainable redevelopment model for the LIG in Mumbai?**

- ***What is the existing conventional housing delivery model for LIG adopted in Mumbai for redevelopment?***

From Chapter 5, a case of the conventional housing delivery model is studied and it reveals that, the housing approach is where there is low-level of community participation and decision power in the project. The policy makes it mandatory to get a 75% consent from the community by the developer before proposing to build on the property and that is the only level of participation of the community. The market is the main driver of this model, where the land prices decide whether the developer is interested in developing the property and has acquired very high trade-offs for the same. The government only facilitates the process and is not directly involved in the projects. It regulates it and provides for incentives for densification of the property and attract private developers to earn profit out of such projects. The organisational diagram gives the roles and responsibilities of each of the actors involved. The housing finance system consists of the informal and formal lending by financial

institutions for development finance to builders at a very high interest rate. Usually the developer gets cash inflow from pre-sale of free-sale property. There is no financial contribution from the other actors. Municipal taxes are borne by the community after the completion of the project, whereas maintenance costs are recovered from the corpus fund that the developer makes for the community after forming a co-operative society.

- ***What is the housing delivery model adopted in Bharatnagar for redevelopment?***

Chapter 5 reveals that the Bharatnagar model has a very strong community-driven approach where the community is involved in the planning, management, liaison, financial contribution through savings and also for negotiating with the government for acquiring government owned land for redevelopment. The Market component is also high in this model, since the concept of sharing land with a private construction company so as to cross-subsidise their own rehabilitation project involves high market for land to attract the private company and finance the model. The government involvement is medium since it not only facilitates the project but also makes land available to the community with the negotiations for a premium.

The organisational arrangement shown in *figure 5.3* reflects the roles and relationships between each participating actor. The housing finance system is similar to the conventional redevelopment model in Mumbai, except that there is financial contribution of the community through savings and since the community acts as a developer in the project, the management of finance by selling part of the property rights to a private company and bearing all the costs of the project, makes the model unique.

- ***Is the project the most financially viable?***

Yes, as shown in chapter 5, the findings reveal that the project is more financially viable than the typical redevelopment model used in the city. The financial analysis is done without considering the free sale rental component which might generate more income in the typical model case for the developer than the one in the alternative approach. Since there is technical assistance from the NGO at subsidised rates, the project tends to benefit more than the developers' expenses on fees for technical purposes to architects, lawyers and other consultants that do not differentiate their fees for low income housing from other projects. The IRR for the Alternative self-development model is 35% whereas for Typical redevelopment model situated in the same location it is 25%. The financial viability is also decided by measuring viability for all the actors involved. In the typical redevelopment model, the developer is dominant with high profits generated by him in the housing process. Even though the units are free for the community and does not take part in the business of the project, it suffers from displacement of their locations or very bad quality spaces, which they usually sell formally or informally in the market and move out. Hence eventually there is no gain for the community.

In the Alternative approach case, even though the community is the main decision maker, the project is viable for all the actors. Premium is paid to the state after negotiations, private construction company gets benefits from the sale land and community gets surplus amount after selling part of the development rights to the private sector. NGOs currently subsidise their services but after strengthening the model and with institutionalisation, might increase their fees. But overall the model is a win-win situation financially to all actors involved.

- ***Is the housing finance model the most sustainable in the city?***

The analysis of sustainability of the approach of the model revealed that the system of integrated mix of the community empowerment, government assistance, NGO help and strong market component makes it the most sustainable approach from the ones studied. The economic, institutional, socio-economic and mainly physical sustainability scored relatively well and suggested that this composition of housing delivery would be suitable for the city. With involvement of the community towards taking larger decisions of the development process, the sustainability of the program increases because the responsibility of maintenance and further community growth will be smoothly taken care of by the community. GO participation to support the community's decisions is a crucial factor because they help them in providing good quality housing, besides helping in negotiating with the government. The involvement of the market sector for the project makes it complete due to effective standards being emt apart from generating income from sale of development rights. The only factor that went missing was the political turmoil that would be created if the project is instantly institutionalized. The dependence of a very large lobby of politicians and developers on the existing system would create objections to the alternative approach. The typical redevelopment model scored less in almost all aspects of sustainability. The developer lobby dominating development process, high dependence on market, with lack of government's active participation and no involvement from the user community, makes the scheme extremely unsustainable.

Apart from the advantages of the model there are likely to be disadvantages too. There are possibilities that after being granted development rights to the land, the community could sell off the property to the private developer or construct the building and then sell and move away to find less expensive accommodations in the city. Hence in the process though the community would get participation in the development, there are chances of reducing its role merely as business profit making actors through business and misuse their development privileges as low income groups.

This model is one of its kinds and would require more such initiatives from community groups to make formal space of negotiations with the institutional system of housing delivery. Due to high market value of their land, this project was actively taken by the community for development. But in places where there are badly managed settlements or slums and the community is passive in initiating improvements, the government may have no option but to use the threat of eviction as a condition if groups do not approach for improvement. This although is a negative way to mobilize the communities, it bring homogeneity in their decisions for development.

- ***What are the lessons that can be learnt from case studies to improve the redevelopment model in Mumbai?***

The Chawl Re-development Case in Mumbai, Progressive Housing Program in Chile and The Community Organisations Development Institute in Thailand were chosen as cases for to learn from and improve on the redevelopment model in Mumbai.

The Chawl Re-Development case reveals that in the city of Mumbai, to drive a project and mobilize the community there is always a power support needed in the form of a political leader or strong NGO at the localized level. To negotiate with the government, this form of actor becomes very important and a LIG co-operative society always needs motivation from powerful actors. Such power forces should be given incentives and support by the



government to mobilize more and more communities. The case also reveals that there is no development finance source available for community groups for acquiring development rights, construction cost, etc and they have to depend on informal loans with very high interest rates and on pre-sales of the sale property. This dampens community participation by low income groups in the process.

The PH case of Chile shows that too much government subsidies and international grants make the housing process unsustainable. The government had a good approach of getting the community involved by giving a subsidy and organizing the land purchase in the city for redevelopment if the community showed a two- year saving record. This helped in mobilizing the community and increase self-development process.

From the CODI case we can learn that the government institutionalized the community participation and brings about socio-economic improvement, the involvement of the market is left to the disposal of the community. Lack of market involvement makes the project less efficient and effective. So, we can learn that though community-participation is very effective in strengthening the society, lack of market involvement in decision making could lead to economic redundancy and also bad housing products.

## **6.2 Recommendation**

If this project is treated as a pilot project, it will have to go a long way to form a product out of it which would be acceptable by all the stakeholders and actors involved. To even out the advantages and disadvantages of the Alternative self-development model and improve it more, further are some suggestions that are made. These suggestions are directly through the studies as well as insights from interviews with the main actors during the field trip.

### **Housing Approach**

- There needs to be a balance maintained in market oriented approaches to check that not only low income groups dwelling on high property lands are developed and the others ignored. The proposal of a ‘Collaborative approach’, rather than a ‘Community-driven’ approach needs to be focused on.

### **Roles of Actors**

- The market oriented approaches could be used only for parts of the project as shown in the alternative model, but this negotiation of the community and the private sector should have a fixed range and should be supervised by the public sector institutes at the local level.
- Community should not be seen as a weak segment of the society but should be considered a powerful entity by themselves as well as other actors and NGOs should play a role in empowering the community.
- NGO support should be higher to mobilize maximum communities and turn their attention towards the lack of improvement that exists in the current redevelopment model.
- The government should play a higher role in dealing with redevelopment projects at the local level to assure good quality spaces, restrict greediness of the private sector and the community and control private sector domination in the process.

## Housing Finance system

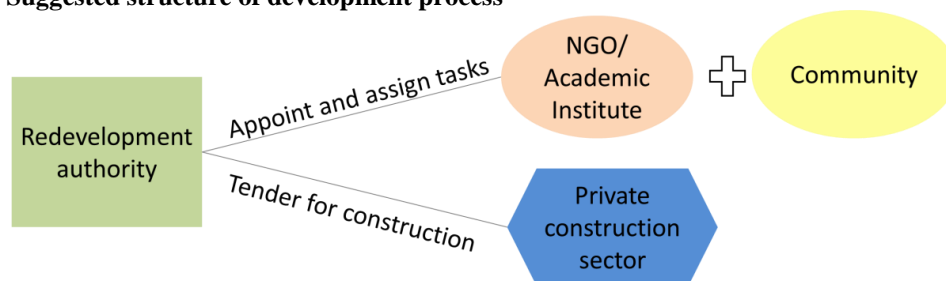
- There should be a better product derived from the given case study which allows for the community to borrow from the bank with group loans for construction purposes as seen in case of CODI, where the government body could be the guarantor.
- The government subsidies could be provided when initiatives are taken by the community in forming groups, maintaining saving portfolios and developing business plan as seen in Chile case.
- These subsidies should not only be in the form of development rights as it exists today, because the advantage of the additional space is minimal, instead it adds on to high densification in the city which leads to scarcity in infrastructure provision.

## Process

- Single window and faster approvals for community approached projects could form a way of institutionalizing community group effort.
- The architectural and design academic institutes should, in their syllabus include slum improvement and redevelopment proposal designs where creative ideas will be generated and at times the academic institutes could also be the appointed to be a part of the development teams of the actual project.

The following figure 6.1 shows the stage wise intervention that could take place if the approach is a collaborative one.

Figure 6. 1 Suggested structure of development process



### STAGES OF REDEVELOPMENT IN HOUSING

I- SURVEY	II- DESIGN	III-CONSTRUCTION	IV-ASSESSMENT
<ul style="list-style-type: none"> <li>• Survey of land</li> <li>• Survey of structures/units</li> <li>• Mobilising community(concent)</li> <li>• Identification process.</li> </ul>	<ul style="list-style-type: none"> <li>• Participatory design process</li> </ul>	<ul style="list-style-type: none"> <li>• Construction process monitored by authority and architects and NGO.</li> </ul>	<ul style="list-style-type: none"> <li>• To check if the delivery is satisfactory or not.</li> </ul>

Source: Author, 2011

In this figure, the development process for housing redevelopment of low-income and economically weaker section is shown. The organizational arrangement is such that the development authority takes more responsibility at the local level and appoints for NGOs and Architects on the land procured for redevelopment (usually government lands).

### *Stage I*

The NGOs and academic institute/ architectural firms are appointed the tasks of surveying the land, plot limits, area and tenements on the property. In this process the community would be mobilized by the NGO into the formation of co-operative societies and made a part of the team such that they contribute actively towards the survey.

### *Stage II*

The design process would involve the active participation of the architects and the community in deciding on the possible typologies for the site and integrating the living and working patterns of the existing communities within the design.

### *Stage III*

Simultaneously the tender for the construction of the property will be floated by the authority, in which the best bidder will be selected and assigned the work of construction as well as negotiating for the extra area to be capitalized. The design process, with the collaborative efforts by the team architects and the construction company will be worked out for implementation. The construction process could be monitored by the NGOs and the authority officials.

### *Stage IV*

The assessment of the project will take place after a period of few months to assess whether the development process has impacted the community positively, does it still have loop-holes, whether the delivery of services and their maintenance is managed by the community

## **6.3 Scope for further research**

The research has been oriented towards studying more about community self-development models for the city, which in the process also covered market oriented approaches. The research can be continued to explore more collaborative approach by all actors and check its strengths and weaknesses.

The housing models identified, can be imagined in another study site and simulated to generate patterns of impact due to different context of macroeconomic situations, cultural behaviors of community, market behaviors, etc. This would make the research specific and would also articulate the conditions in which the housing delivery takes place.

It would also be interesting to place case studies to fill in all the blanks in the table 5.71. and explore the various pros and cons of each case, to generate more ideas and create a matrix which may be useful for assimilating some ideas from it for future experiments in improvement of housing delivery by the researcher.

*This is the final chapter of the thesis which concluded the entire research process and summed up the answers to the research questions. The advantages and disadvantages of the Alternative self-development model were discussed and suggestions to improve the system are enumerated. A proposal for a more collaborative approach is aimed at through the recommendations. The chapter concludes with discussion on continuation of the research through focus on other aspects of housing delivery which need further research.*

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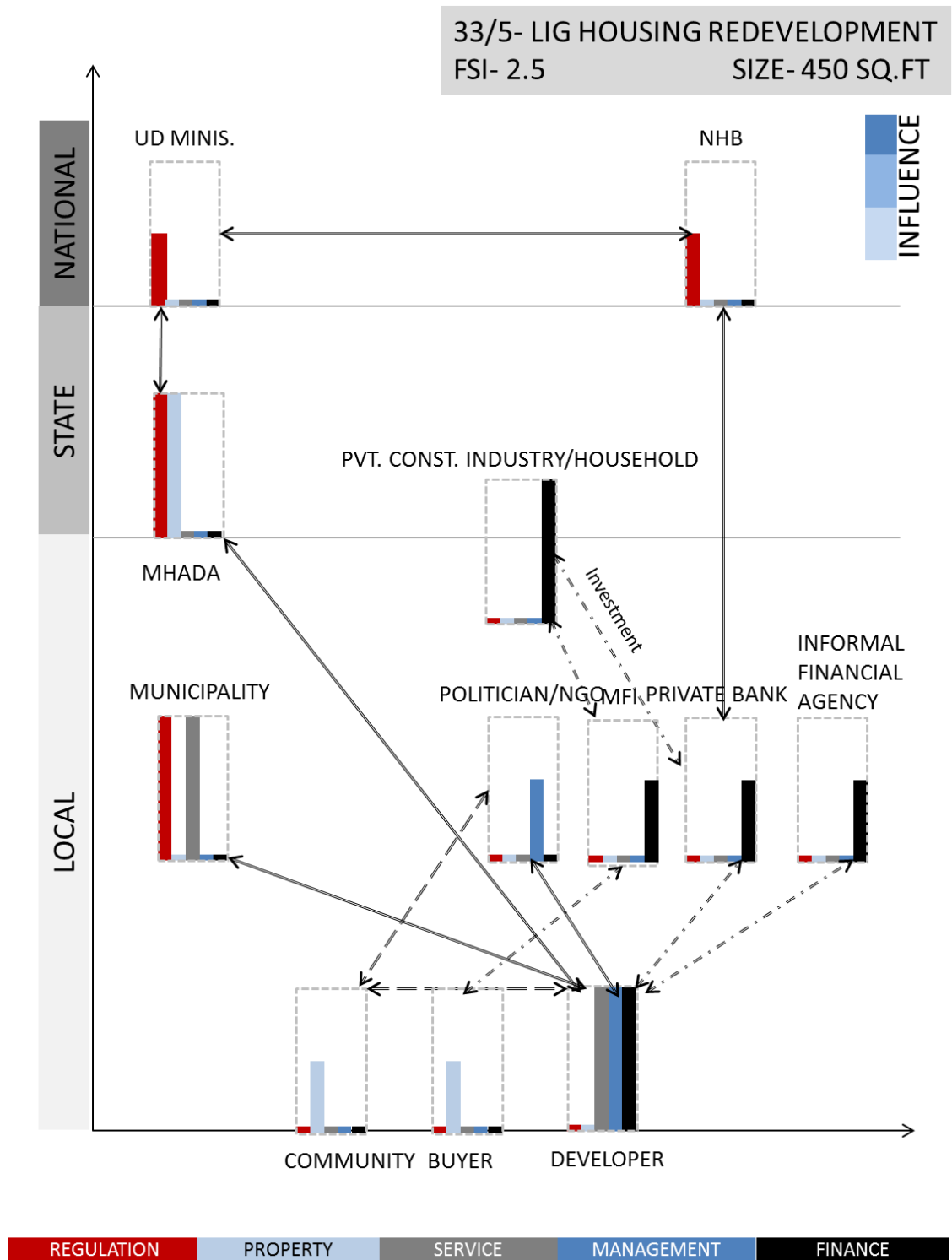
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## **ANNEXE I**

### **Part1: The Organizational diagrams**

These are diagrams made by collecting information of how a housing scheme works. It illustrates the different actors right from the national level, state, regional(where applicable) to local level. It defines through secondary data collection, the responsibilities of each of these actors in terms of processes of management, finance, property transfers, service towards the project and regulations. The connecting arrows between the actors describe the nature of relationship as shown in the legend. The varying levels of tasks show the level of influence of that actor in performing the task and overall influence within the project.

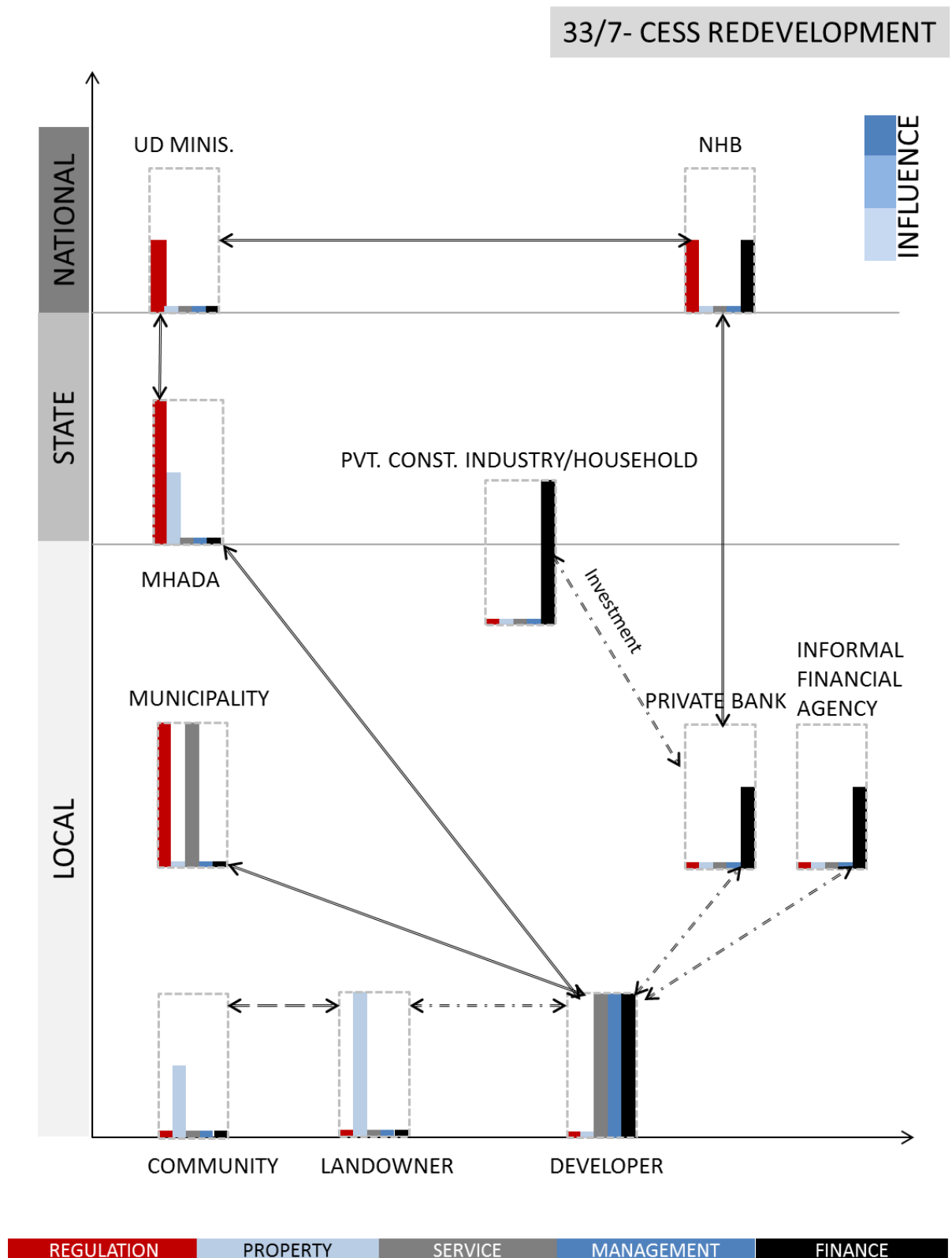
2. 1 Low Income group re-development model



Source: Author, 2011

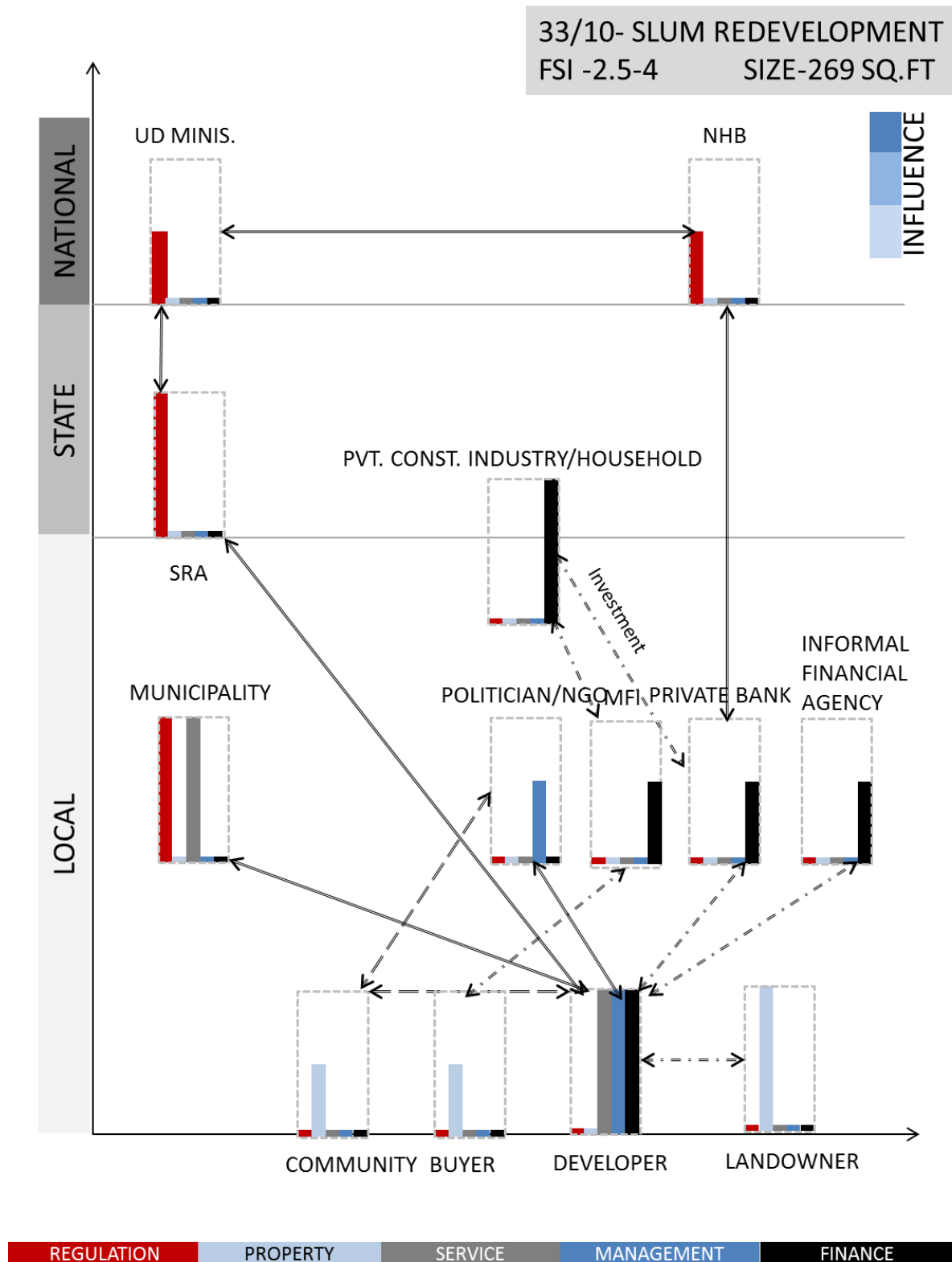


2. 2 Cess Redevelopment model



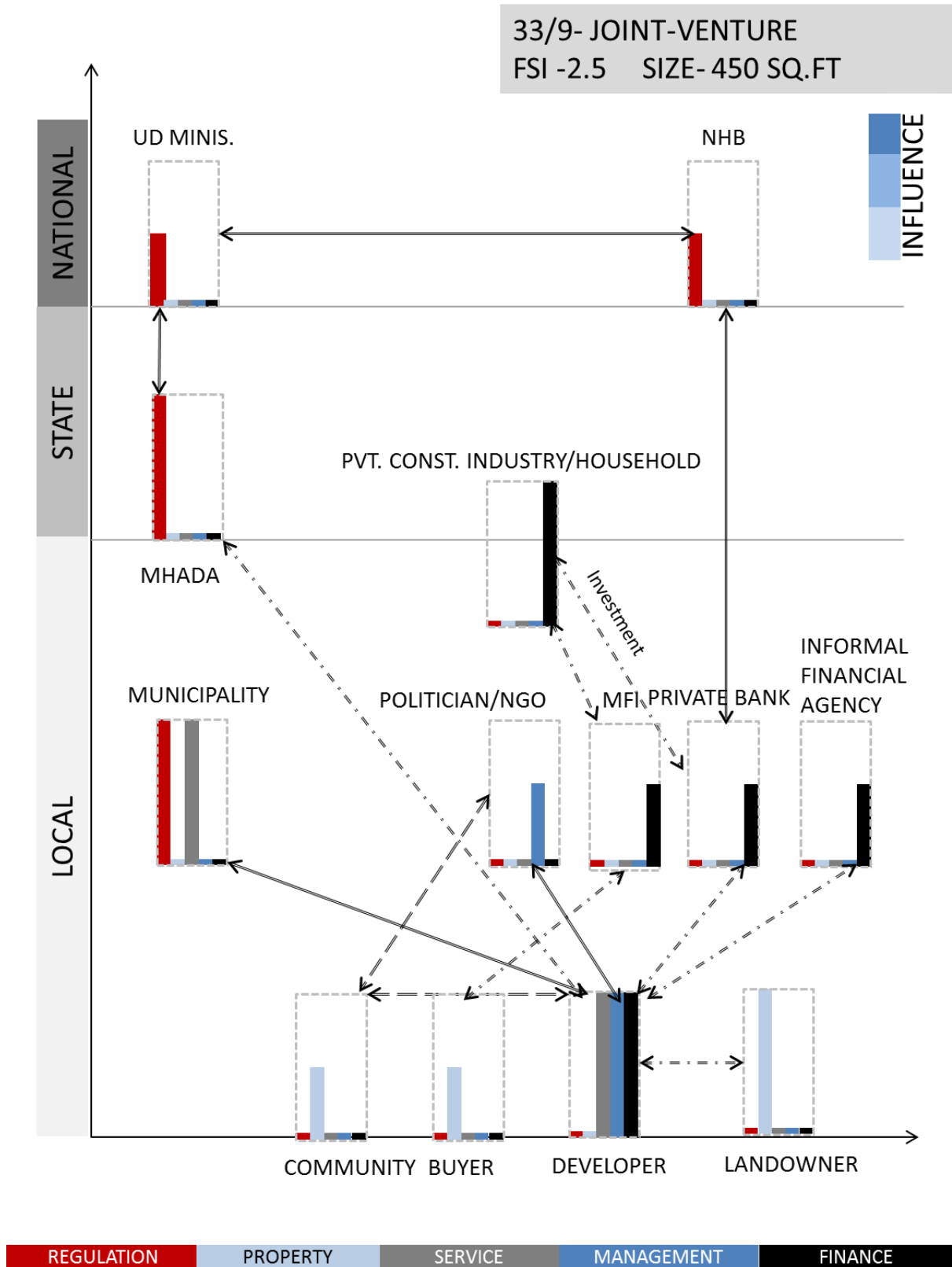
Source: Author, 2011

### 2.3 Slum Redevelopment model



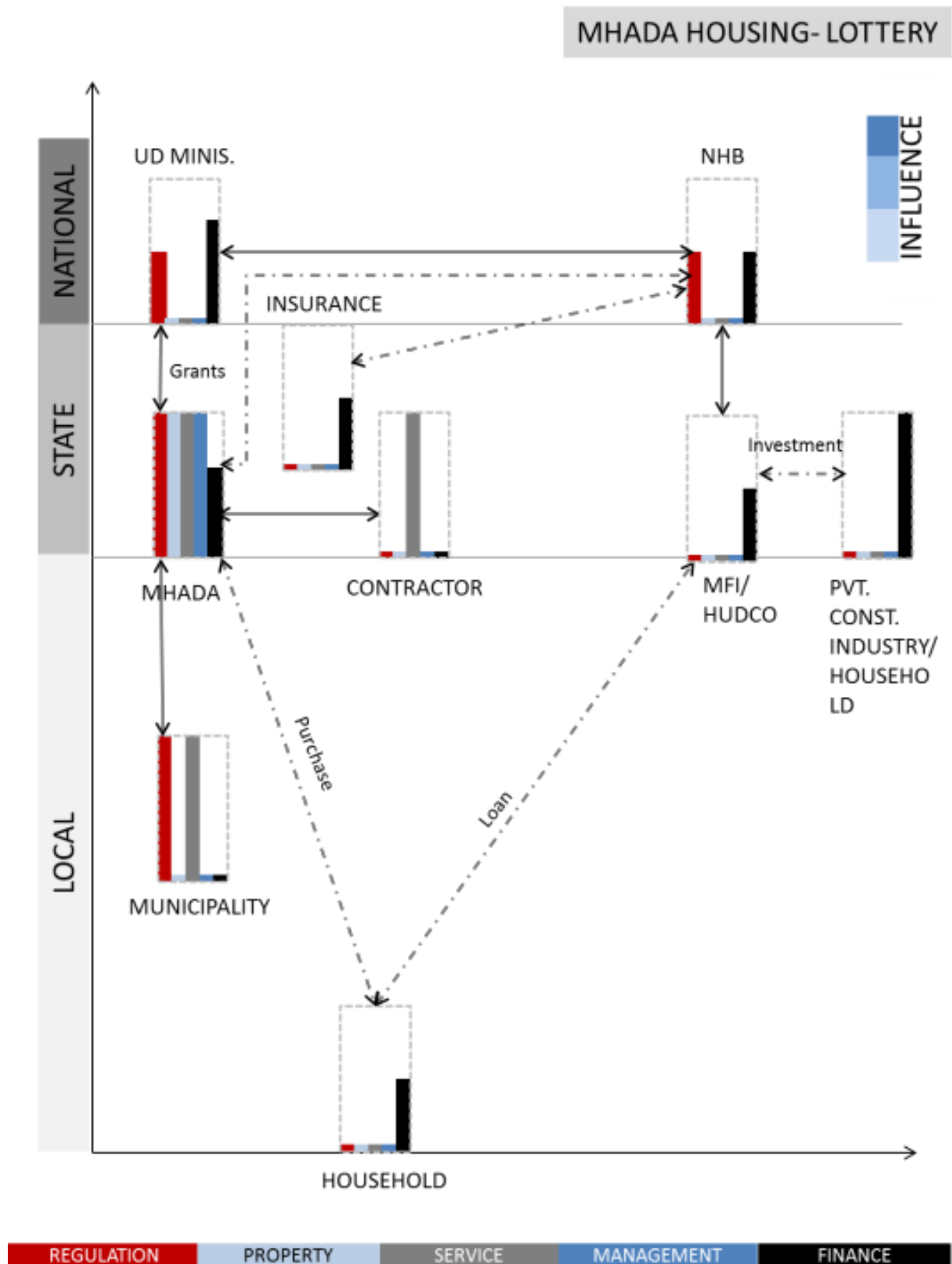
Source: Author, 2011

2. 4 Joint Venture + Redevelopment model



Source: Author, 2011

2. 5 MHADA Lottery model



Source: Author, 2011

## Part2: Financial Viability for all Actors involved

Typical Redevelopment Model in Mumbai

CASH FLOW	COMMUNITY		PUBLIC SECTOR		PRIVATE		FINANCIAL		NGO, ARCHITECTS		INTERNATIONAL	
	OUTFLOW	INFLOW	OUTFLOW	INFLOW	OUTFLOW	INFLOW	OUTFLOW	INFLOW	OUTFLOW	INFLOW	OUTFLOW	INFLOW
Land Procurement costs/Land	√			√								
Construction costs					√							
Operational funds					√							
Temporary rehabilitation					√							
Corpus for maintainance		√			√							
Premium to state				√	√							
Municipal taxes	√			√	√							
Rents to state					√							
Subsidy												
Grants/Funds												
Household/Community Savings												
Loan amount borrowed						√	√					
Rent from new units						√						
Repayment of Loan					√			√				
Consultancy fees						√				√		
Technical service						√				√		
Sale Amount						√						
Surplus						√						

## Chawl Re-Development Case in Mumbai

CASH FLOW	COMMUNITY		PUBLIC SECTOR		PRIVATE		FINANCIAL		NGO, ARCHITECTS		INTERNATIONAL	
	OUTFLOW	INFLOW	OUTFLOW	INFLOW	OUTFLOW	INFLOW	OUTFLOW	INFLOW	OUTFLOW	INFLOW	OUTFLOW	INFLOW
Land Procurement costs/Land	√			√								
Construction costs	√				√							
Operational funds	√											
Temporary rehabilitation	√											
Corpus for maintainance	√											
Premium to state												
Municipal taxes	√			√								
Rents to state	√			√								
Subsidy												
Grants/Funds												
Household/Community Savings	√											
Loan amount borrowed		√				√	√					
Rent from new units		√										
Repayment of Loan	√							√				
Consultancy fees	√									√		
Technical service												
Sale Amount		√				√						
Surplus		√				√						

## **Annex II**

### **Questionnaires for in-Depth Interviews**

The questions have been formulated on the basis of the operationalization chart. Based on the variables, questions were set-up to single or multiple actors depending upon the need to know the answers from multi-actor perspective or specific specialized perspective. The questionnaires have been made into 5 different sheets as per the 5 actors chosen to be interviewed: the public sector, the private construction sector, the community, the NGO/academicians and financial institutions.

(\* A separate questionnaire sheet has been made for each stakeholder. The serial numbers indicated against each question corresponds to the serial numbers indicated on the Operationalization Table 2. The financial viability part included collecting hard numbers and hence were directly asked to the interviewee)

## **Community**

**Financial Viability:** Refer to the Table 2

### **Economic sustainability**

#### **Funding help**

10. What are the different sources of funding for the project? How are these divided for different functions?
3. Is there any international funding help?
5. How much loan can you afford through each of these institutions?  
Commercial, HUDCO, co-operative bank, informal sources, NGO
6. What is the capacity of loan repayment and the how will it be operationalized?
2. Is there any grants offered by the state or any other financial help directly?
7. Does the state offer subsidy? What kind of subsidy?
9. Is there a possibility that the high real estate cost will cause a direct pressure for the community to be displaced?
11. After the acquired source of funding ends, how will the community manage the joint finances?

#### **Saving**

4. How much can the households afford to save from their daily income?
4. Do you have any records of how much the co-operative has managed to save in the past and the present?
4. What is the range of income existing in the community?

4. What are the limitations faced in savings performance?

4. What is the highest and lowest income generated in the community and how much per cent can each afford to contribute for any costs incurred in the development process?

### **Institutional sustainability**

1. Who supports the project politically? In what way? How do you rate it 1- 10 from weak to strong?
6. How much support from NGO or professionals? In what way? How do you rate it 1- 10 from weak to strong?
7. When the project kick-starts who will be dominating the management process of the entire project?
8. Which actor will provide the technical assistance in management? Till what extent?
9. What is the total paperwork involvement? Low-high (1-10)
10. What is the speed of the process? Administration, waiting list, saving procedure?
11. Which other actors are you linked with, formally/informally?

### **Socio-Economic sustainability**

1. How much involvement is there in deciding the type of house?
1. How much power is exercised in deciding involvement of other stakeholders?
1. What are the other decisions taken by the community in the project?
2. What is the extent of participation in self-management, skilled help, idea initiation?
3. What will be the added functions in the project(besides balwadis, community hall, etc) that will better the socio-economic condition of the community, something that the developer would not find viable?
4. Will the community be able to pay the municipal taxes and maintenance costs after the construction is over?
5. Are there ideas about self-generating finance within the project (eg. Renting)for the community?
6. Any local jobs created through the project?
7. Are maximum jobs of the community located close by?
8. Refer to Q. 2
9. Is there any strategy towards retaining the community in their new flats?

### **Physical sustainability**

3. As compared to the other redevelopment buildings, what is it that you will like to improve in building?



## **Public sector**

### **Financial viability**

1. What are the different subsidies offered for housing LIG for development finance, eg.on Material purchase, construction loan, labour, land, transaction costs?
2. Besides subsidies and FSI rise, are there any other incentives for the LIG housing, single window procedure?

### **Economic Sustainability**

2. Direct/ indirect financial contributions of the government in LIG housing?
7. What kind of subsidy is offered(in %)?
8. Is the subsidy directly provided to the community or is only for other stakeholders?

### **Institutional sustainability**

1. What is the political support for the project? Considering that the developers are usually local corporators, will this kind of approach be supported?
2. Is there a strong link with the parliament to get financial or legal support from them for such project?
3. Could there be any help from any international agency in terms of policy/finance for the project?
7. Is there any operation at the state/national level on such an alternative approach?
8. Is there any technical assistance from public sector side like involvement in construction, tendering, architecture?
9. What are the kind of paperwork involved in such a project? Is it too high?
10. How long would such a process take?
11. What are your links with other stakeholders like the banks, community, developers, NGO? Strong/weak with each one?

### **Socio-Economic Sustainability**

3. What are the additional functions in the project that will improve the socio-economic condition of the community, besides the usual balwadis, community halls?
4. Would the municipal taxes and maintenance charges to be paid by the community be higher than their affordability?
5. Is there any strategy to self-generate finance through this project?
6. Is there any attempt to generate local jobs through this project?

## **Private construction sector**

**Financial viability** Refer to the Table 2

### **Economic Sustainability**

5. What is your access to loan for development finance for LIG?
6. In a redevelopment project what are the risks incurred and capacity to repay?
7. Is there any subsidy offered for such projects for LIG?
10. What are the different funding sources for such a project?

### **Institutional sustainability**

1. Would the project be politically favourable?
3. Would the involvement/role of the developer designed by the project be favourable for you?
9. Would the paper work of this project be high or low?
10. Will this project have low speed?
11. What are your links with other stakeholders like the banks, community, state, NGO? Strong/weak with each one?

### **Socio-Economic sustainability**

3. What are the functions that are usually added for the redevelopment project which improve the socio-economic conditions of the community?
4. After construction of the redeveloped building, do the maintenance costs and taxes of the project rise?
5. Are there any facilities provided as income generating activities for the community?
9. Through usual redevelopment projects, what is the assurance that the community will continue to live in the constructed apartment?

### **Physical sustainability**

1. What is the quality of construction used in such projects, will it differ if it is handled by an isolated construction company and not a developer?
3. What is the kind of infrastructure provision that you are obliged to provide and what are the extra ones provided?
4. What is your comment on the quality of spaces provided in redevelopment projects?

## **Financial institution**

**Financial viability:** Refer to the Table 2

### **Economic sustainability**

2. Is there any international help being offered to fund such projects?
5. Are loans provided for such projects for LIG? What is the nature of such loans?(Individual Mortgage/group loan, fluctuating interest rate/fixed interest rate, long term/short term, collateral acceptable)?
6. What kind of risks are incurred in such kind of community projects?
7. What are the kind of subsidies offered for LIG?
8. Are the subsidies directly provided to community or are through construction companies for purchase of materials?

### **Institutional sustainability**

9. Is there high amount of paper work involved for access to loans for construction?
10. Would the speed of the process be high or low?
11. What are your links with other stakeholders like the state, community, developers, NGO? Strong/weak with each one?

### **Socio-economic sustainability**

9. After the implementation of such an alternative approach, what is the possibility of the community to continue living there?

## **NGO and professionals**

### **Financial viability**

1. What are your financial contributions to the project if any?

### **Economic sustainability**

1. What is the current macro-economic situation that would make this project stable/unstable?
2. Through what means should the government contribute financially towards the project?
3. Would there be sufficient international funding for such a project?
4. Can community savings be a very good resource for such a redevelopment project or is it insignificant?
5. Do the community have difficulty in access to loans from financial institutions? What are the different funding solutions?
6. Will the risks incurred be strong in giving loan considering the lack of capacity for repayment?
7. What re the subsidies offered by state for the LIG housing?
9. Would the high real estate cost ultimately lead into displacement of the community?
10. What are the different sources of funding for the project?

11. Would the community contribute non-financially towards the project after end of the construction process?

### **Institutional sustainability**

1. Would there be political support for such a project?
4. Would there be financial institutions interested in taking up such projects and designing loan products accordingly?
5. Would there be interest of international agencies in the form of policy/funds?
6. What role does the NGO play in such an alternative approach?
7. Would the implementation be localised or would operate at the state/national level too?
8. Will there be technical assistance provided by the NGO~?
9. Will the paperwork involved be too elaborate?
10. Will the process be slow/fast?
11. What are your links with other stakeholders like the banks, community, developers, state? Strong/weak with each one?

### **Socio-economic sustainability**

2. How much involvement is there in deciding the type of house?
3. How much power is exercised in deciding involvement of other stakeholders?
10. What are the other decisions taken by the community in the project?
11. What is the extent of participation in self-management, skilled help, idea initiation?
12. What will be the added functions in the project(besides balwadis, community hall, etc) that will better the socio-economic condition of the community, something that the developer would not find viable?
13. Will the community be able to pay the municipal taxes and maintenance costs after the construction is over?
14. Are there ideas about self-generating finance within the project (eg. Renting)for the community?
15. Any local jobs created through the project?
16. Are maximum jobs of the community located close by?
17. Refer to Q. 2
18. Is there any strategy towards retaining the community in their new flats?

### **Physical sustainability**

1. How will the construction quality be ensured in this process?
3. Who will manage the infrastructure provisions that will take place in the project?
4. How will the quality of spaces be better than the conventional projects?

## Annex III

### Priority Scale for Sustainability Variables

The sustainability of a housing program depends on what variables for economic, socio-economic, institutional and physical sustainability should be given higher priority than the rest. Some factors need to be highly encouraged than the rest and the following table justifies the same. It uses the 3 main approaches community driven, market-driven and government-driven approaches and the variables' suitability to make those programs sustainable. The variables which are highly encouraged for making the program sustainable are given high priority and so forth.

<b>Economic Sustainability variables</b>	<b>Market</b>	<b>Comm.</b>	<b>Govt.</b>	<b>Priority</b>
Macroeconomic Situation	√	√	√	Highly Encouraged
Financing by Government	√	√	√	Highly Encouraged
International Funding		√		Discouraged
Families Contribution	√	√	√	Highly Encouraged
Access to loans	√	√	√	Highly Encouraged
Loan Repayment	√		√	Encouraged
Subsidies		√		Discouraged
Direct Subsidies		√		Discouraged
Construction and Land Costs (moderate costs)		√	√	Encouraged
Diversity of Funding		√	√	Encouraged
Non-Financial Contributions	√	√	√	Highly Encouraged

<b>Institutional Sustainability variables</b>	<b>Market</b>	<b>Comm.</b>	<b>Govt.</b>	<b>Priority</b>
Political Support	√	√	√	Highly Encouraged
Links with Parliament		√	√	Encouraged
Participation of Private Construction Sector	√	√	√	Highly Encouraged
Participation of Financial Institutions	√	√	√	Highly Encouraged
International Co-operation			√	Discouraged

Participation of NGOs and Professionals	√	√	√	Highly Encouraged
Mainly Localised Implementation	√	√		Encouraged
Provision of Technical Assistance		√	√	Encouraged
Amount of Paperwork (Low)	√	√		Encouraged
Process Speed	√	√	√	Highly Encouraged
Diversity of Institutional Actors and other stakeholders		√		Encouraged

<b>Socio-Economic Sustainability variables</b>	Market	Comm.	Govt.	Priority
Decision power of the community	√	√	√	Highly Encouraged
Support of Self-help Activities	√	√	√	Highly Encouraged
Improvement of Socio-Economic Situation		√	√	Encouraged
Fixed Costs after construction	√	√		Encouraged
Self-generating finance component of the project	√	√	√	Highly Encouraged
Creation of Local Jobs		√		Encouraged
Location close to Jobs		√		Encouraged
Extent of participation of community group		√	√	Encouraged
Assurance of continuing to stay there	√	√	√	Highly Encouraged

<b>Physical Sustainability variables</b>	Market	Comm.	Govt.	Priority
Quality of Construction	√	√	√	Highly Encouraged
Non-Peripheral Locations	√	√	√	Highly Encouraged
Provision of Infrastructure	√	√	√	Highly Encouraged
Quality of Living Spaces	√	√	√	Highly Encouraged