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Integrating Design and Planning in Informal Settlements

Working Towards Resilience in GazdarBandh Slum in Mumbai

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Abstract

Informal settlements are often not included in the development plan of cities. Urban planning has increasingly been less concerned about provision of basic infrastructure and services to vulnerable communities living and working in informal conditions. Increasing official apathy pose major challenges to achieving the globally accepted goal of inclusive urbanization as envisaged in Sustainable Development Goals / SDGs.. Goal 11 that aims at creating Safe, resilient, inclusive and sustainable cities will remain distant until we factor in the informal living and working conditions into our current urban planning narrative. The problem statement in this paper is: GazdharBandh is a Notified Slum by Slum Redevelopment Authority (SRA) of MMRDA (Maharashtra Metropolitan Region Development Authority). The slum pocket is located in western suburb of Santacruz west, Mumbai. Gazdhar Bandh shows high density informal housing within the “no development zone” as per the development plan 2034, in estuary conditions that is vulnerable to recurrent floods. Slum upgradation faces multiple challenges with the complex interplay of local diversities, relocation and livelihood concerns. The solution we offer in this paper using the case study of Gazdar Bandh slum, is how community responses to housing and other design strategies like public spaces, streetscapes, and makeshift spaces as immediate responses can go a long way to build long term resilience and factored into the broader city level planning narrative. The findings broadly offer the solution: How can urban planning and design embrace uncertainty and concludes with an operational framework drawing on participatory planning and good urban place engaging multiple stakeholders.

Informal settlements are often not included in the development plan of cities. Urban planning has increasingly been less concerned about provision of basic infrastructure and services to vulnerable communities living and working in informal conditions. Increasing official apathy pose major challenges to achieving the globally accepted goal of inclusive urbanization as envisaged in Sustainable Development Goals / SDGs.. Goal 11 that aims at creating Safe, resilient, inclusive and sustainable cities will remain distant until we factor in the informal living and working conditions into our current urban planning narrative. The problem statement in this paper is: GazdharBandh is a Notified Slum by Slum Redevelopment Authority (SRA) of MMRDA (Maharashtra Metropolitan Region Development Authority). The slum pocket is located in western suburb of Santacruz west, Mumbai. Gazdhar Bandh shows high density informal housing within the “no development zone” as per the development plan 2034, in estuary conditions that is vulnerable to recurrent floods. Slum upgradation faces multiple challenges with the complex interplay of local diversities, relocation and livelihood concerns. The solution we offer in this paper using the case study of Gazdar Bandh slum, is how community responses to housing and other design strategies like public spaces, streetscapes, and makeshift spaces as immediate responses can go a long way to build long term resilience and factored into the broader city level planning narrative. The findings broadly offer the solution: How can urban planning and design embrace uncertainty and concludes with an operational framework drawing on

participatory planning and good urban place engaging multiple stakeholders.

Keywords

Informality; Slums; Mumbai; Planning; Design; Resilience

1. Introduction

India has committed to long- term adaptation to climate change with centralized plans, policies, and institutions. The diverse geographical conditions however, lead to the understanding that decentralized strategies integrated with local level planning can effectively build resilience as recently witnessed in varied urban contexts of India. A series of natural disasters like cyclones, tsunamis and floods in megacities and urban centers in India have prompted responses towards better disaster prepared-ness and also created awareness among city residents to issues concerning environment like the importance of solid waste management, housing for the poor, access to basic amenities like water and sanitation. Community responses have been documented in cities like Mumbai, Kolkata and Indore (Chatterjee, 2010; Mahadevia, 2001; Stephens and Patnaik, 1996). Natural disaster risk management and adaptation plans are typically local in character. The importance of local institutions and communities in disaster risk mitigation and long-term climate change responses is also established (Bartlett, 2008; Agrawal, 2008, Kelly & Adger, 2000; Chatterjee, 2010). With the understanding that decentralized strategies, practical design integrated with city level planning can effectively address the concerns of coping with disasters, build the much-needed resilience, prerequisite to cope with the long-term challenges of climate change, this study argues for the inclusion of informal settlements like slums in the current planning narrative and provides an operational framework to integrate planning and design at the community level to build long term resilience. As Chakrabarty (2016) argues, the use of the term slum is beneficial as some networks of neighbourhood organizations like the National Slum Dwellers Federation in India prefer to identify themselves as slums as it assures certain benefits in a situation when residents can lobby to get their settlement classified as a notified slum. In this study, the term slum is used for those settlements that lack formal recognition from local government authorities like municipal bodies; do not have secure tenure; are inadequately serviced with basic infrastructure and services like water and sanitation; mostly overcrowded and located on land public/ government land or on sensitive urban ecologies with poor construction of dwelling units. Slums in Mumbai lack or have limited access to basic services like water, sanitation, solid waste management, and health services. Despite the economic contribution to the city, urban policies and local authorities remain indifferent to the basic needs of residents in slums thereby increasing their vulnerabilities to impending disasters manifold.

Indifference from the state apparatus has also pushed slum residents to varied tactical methods to access basic services, access to drinking water, upgrade housing, build their own toilets and housing already established in literature (Calderia, 2017).

The slum settlement chosen as case study here, Gazdar Bandh is not included in development plan of Mumbai 2034. Based on an empirical study using participatory tools of survey and mapping in the slum community located in an estuary condition at Ghazdar bandh, in the commercial precinct of western suburbs in megacity Mumbai, this study argues for the significance of design strategies in consultation with local communities living in informal settlements that are vulnerable to environmental risks like floods and mudslides. These risks typically arise from inadequate living conditions in informal settlements like inadequate drainage, sanitation, solid waste management, and water and consequent harmful practices like disposal of waste into nearby estuaries, streams and drains resulting in clogging and recurrent floods. Extensive fieldwork comprising semi-structured interviews with 40 respondents (including slum residents, municipal officials, local politicians, representatives of civil society organizations/CSOs) were conducted in Gazdar Bandh slum. A detailed qualitative study was carried out to understand the varied aspects of living conditions like housing typologies, livelihood patterns, drainage, sanitation, solid waste management, water, vulnerability to disasters like recurrent floods as a consequence of living in informal

settlements. The attendant responses in terms of investing in housing structures, makeshift structures, looking for alternative habitats, livelihood options and everyday practices like waste disposal, usage of toilets, access to water for drinking, cleaning and cooking were examined. Section 2 discusses the meaning of informality in the urban context of India, its varied spatial and social manifestations. It situates the present study by taking the case of slums in Mumbai as examples of informal living and working conditions that developed and proliferated as a result of flawed urban planning and policies. Section 3 highlights slum redevelopemnt in Mumbai and presents the case of Gazdar Bandh located in the western suburbs of Mumbai. At another level the study examined varied urban policies (initiated at the Centre, state and local government levels). Significant among them was Local Area Plan that was once part of the Draft Development Plan of Mumbai 2013 but later scrapped. It has been again reintroduced under the centrally supported Smart Cities Mission in 25 designated smart cities in India. Section 4 presents the concluding comments and presents an operational framework which draws from the principles of participatory planning, community level design strategies and practical solutions developed in consultation with stakeholders that could develop as a replicable model to build the much needed resilience in the face of the impending risk of flood that has plagued Mumbai for over a decade. The framework can also inform LAP currently reintroduced under the Smart Cities Mission of India.

2. Informality in the urban context of India

Informality – in the form of informal activities and informal use of available material presence – is an essential feature of urbanism in India and the global South in general. Informality in the urban context can be understood from multiple frames as spatial categorization (slum), socio-economic groups (informalized labor), forms of organization (rule-based/relation-based) and knowledge and practices. The urban experience is brought about with the coming together of formal and informal spaces, and activities as witnessed in street economies across urban India. In other Asian cities like the overcrowded streets in the Mongkok district of Hong Kong provides a counter narrative to the criticism of overcrowded streets and markets: they serve as hangouts for the locals, symbolize the chaos and unplanned spatiality of the Asiatic exoticism that appeals to foreign tourists. Every corner of the inner-city area of Mongkok is filled with traffic, shoppers, passer-by, strollers, locals and visitors from other places. Temporal changes brought about by changes in the street from varied uses – pen air bazaar, vehicles, unpredictable mixing of new and old, shops, roadside eateries add to the vibrancy and vitality of street life and help in place making (Lau, 2011). It must be mentioned in this context that the domain of informality also includes the territorial practices of the state apparatus. Noted urban theorist (Roy, 2009) argued how the state applying rules of exception and deregulation has informalized planning practices citing examples of Indian cities like Calcutta, Bangalore and Gurgaon.

Informal settlements are often not included in the development plan of cities. Urban Planning has increasingly been less concerned about provision of basic infrastructure and services to vulnerable communities living and working in informal conditions. Land use, zoning, building byelaws, and development restrictions are the major concerns of the current urban planning narrative. It is further observed that privatization of developed land, service provisions and road building is increasingly becoming a part of the planning process too. While within the new planning paradigm government agencies acquire land for public purpose, they immediately dispense it for Special Economic Zones (SEZs), multimodal freight or highway corridor projects with major real estate component. In cities too, the preparation of master plans, Detailed Project Reports by private consultancies has become the new norm. These increasingly promote the new paradigm of globalized smart cities or service cities for global cities that have no bearing with traditionally evolved urban pattern and the social values that urban form contains. This results in indiscriminate allotment of prime public land for commercial use and residential plots for premium apartments in disguise of affordable housing. This pro-participation of private players in land development, known as the Gurgaon (financial and technical hub City in southwest of New Delhi) Model in Indian town planning paradigm is increasingly finding favour with the local planning authorities. The census of 2011 stated that approximately 65 million people live in slums and was expected to grow to 104 million by 2017. The socio-economic implications

of large slum population on civic services, housing and health care, social exclusion remain unaddressed in policy discourse in India. This implies that urban planners will face escalating social, ecological and legal challenges as informal settlements continue to encroach upon existing reservation lands, fragile ecologies and disputed geographies. The next section highlights the discourse on slums in Mumbai in an attempt to delineate how current urban planning narrative outrightly excludes crucial questions of informality that are inherently networked with formal systems.

History of Slums in Mumbai

Slums in Mumbai can be seen from various perspectives. The migrant would sees slum as an entry level housing to establish his/her household in the city. The Urban Planner would see slums as outcome of faulty planning process or policy structure, policy and land management system. The economist would see slum as an irregular organization of informal economic network that forms the backbone of the city of Mumbai. The policy maker would see the slum as informal urbanisation with self-constructed settlements that are commonly represented as problems responsible for the degradation of local ecosystems. The Sociologist would see it as social and spatial protocol, born of necessity that enables its inhabitants to sustain their marginalized livelihood with scarce natural and material resources. The Urban Designer would see slums as marginalization of informal representation in formal urban planning processes and spatial understanding of cities.

Each perspective has its positive side and perhaps huge possibilities in cross learning for it to enable the urban inclusion in planning, policy and practice. The larger question is how new methodologies of research and formats of representation of informal settlements support their recognition in urban design, planning, political and policy-making processes. How could these processes in turn contribute to the sustenance of informal and formal aspects of the urban form. (The urban form from urban design point of view means the understanding of relationship of buildings to buildings, buildings to built & un-built open spaces, buildings to people, history, social and cultural aspects)

Historically, slums have grown in Mumbai as response to growth of population (mainly due to migration in search of economic opportunities) far beyond the capacity of existing housing. This migration has sparked a steady rise in the illegal occupation of land and the chaotic construction of new slum housing, manipulating reserved land or land within fragile eco-systems or margins such as along railways or estuaries. Many of these homes are made of steel sections, infill bricks and metal corrugated sheets. None of the slums or dwellers would have legal foothold in terms of the land or units. or the city's sanction. Electricity lines and water supplies are ingeniously diverted from the main lines.

Slums in turn emerge as an important resource with its symbiotic relationship developed over time for essential services and human capital. The oldest slums house families that provide cheap manual labour for various types of activities- workers for construction sites, auto rickshaw drivers, service providers for repairs and recycle, production house for domestic consumables and domestic helpers and often anti-social activities.

Migrants are normally drawn to the city by the huge disparity between urban and rural income levels. Usually the residents of these densely populated enclaves live close to their place of work. The residential area itself does not provide employment.

Mumbai knows another reason for the formation of slums. As the city grew, it took over land that was traditionally used for other purposes. The *Koli* fishermen & Gaothans (the urban villages and original inhabitant of the city) were displaced during the development of the harbor and port. Those driven out of the fishing villages improvised living space that was often far shabbier than before. This process continues even now.

On the other hand, some villages were engulfed by the city growing around them. *Dharavi*, originally a village with a small tanning industry, has become a slum in the similar process of transformation. Many of the older slums in Byculla and Khar were initially separate villages, with their own traditional industries.

The growth of slums as informal settlements runs parallel to the increasing informalization of work and economic restructuring in cities like Mumbai. For instance, (Pacoine, 2006) discusses that a process of informalization across

all industries that gathered pace in the 1980s and 1990s as industries in search of cost savings contracted out stages of the production process to temporary labourers in a factory or to outside agents and home workers. This was facilitated by the emergence of new forms of casual and contract labour and the growth of labour-intensive small-scale informal workshops often in slum and squatter settlements operating beyond the writ of the legal protections and regulations of the formal sector of the urban economy. A speculative boom in property and real estate markets in the 1990s that undermined manufacturing units located in old industrial areas such as the Mill Lands on Bombay Island, and led to the regeneration of these areas as new commercial and residential enclaves, (as evident in the gentrification of the Phoenix Mills, Raghuvanshi Mills in Parel).

Similarly the formation of Gazdhar Bandh, a large pocket of self-built-sustain model of slums resulted from various parameters enumerated above. Largely it owes its origin to the generic problem of state body (MHADA) for not being able to provide affordable housing at the city level along with the absence of policy not being able create housing stock for the urban poor. These two issues are coupled with large scale land speculation in the open market and market driven real estate resulting in unaffordable housing in Mumbai.

However there is another specific condition that has necessitated the formation of this large slum pocket in the heart of the western suburbs in Mumbai. The first condition as being the unchecked land that is designated as No Development Zone. Second the land is situated in an estuary condition characterized with sensitive ecology. Such conditions are never negotiated within the development plans either as subject of land or subject of the ecosystem. Such dubious responses have allowed unchecked encroachment and lately resulted in the formation of the large slum pocket as a spatial illegality.

Unlike Gazdhar Bandh, many of the slums are either designated within the development plan as an open space or reservation or state body ownership or collectors' land. It is interesting to note that such slum pockets are increasingly becoming hotbeds for speculative practices around land, development and expensive real estate.

To address slum housing issues, the municipal authority (MCGM) and state planning body (MMRDA) have introduced a number of schemes and flagship programs like the Slum Improvement Board (SIB), Slum Resettlement Scheme (SRS) and instituted the Slum Rehabilitation Authority (SRA).The formation of SRA (under section 33/10), which is a large body, using policy as base to eradicate encroachment, has actually further facilitated the delivery of high end market driven house on the pretext of free housing for slum dwellers which is a miniscule component of the whole scheme.

3. Slum Redevelopment in Mumbai

The most prominent type of redevelopment that dictates the real estate market in Mumbai today is the redevelopment of these slum pockets. Typically, slum pockets emerged on reserved land, open spaces and margins within the suburbs. The state government of Maharashtra replaced the Maharashtra Slum Areas (Improvement, Clearance and Redevelopment) Act, 1971 with the SRA (Slum Rehabilitation Authority) in 1995 with a special committee constituting planning, architecture and social services. Redevelopment of slum pockets has been most pronounced in Nehru Nagar, Khotwadi, Khar Danda, Behram Baug, Ghazdar Bandh and Golibar areas of Mumbai. Incidentally, most of these pockets are located near prominent areas and are well networked within the suburbs. The Urban Development Notification under Maharashtra Regional Town Planning Act/MRTP Act 1966, section 154, has stated that slums with a density of more than 650 tenements per hectare are allowed to have a FSI of 4 as stipulated in the SRA Act, 1995, while those with lower densities shall have a FSI of 3. The high-density slum pockets are more prominent in the redevelopment narrative because of higher sale incentives and profits.

SLUM REDEVELOPMENT DIAGRAM (The encroached land is developed by rehabilitation of slum dwellers free housing either in situ or by relocation process with bare minimum open spaces. The housing for open market sale is given generous open spaces and occupation of prime portion of land.

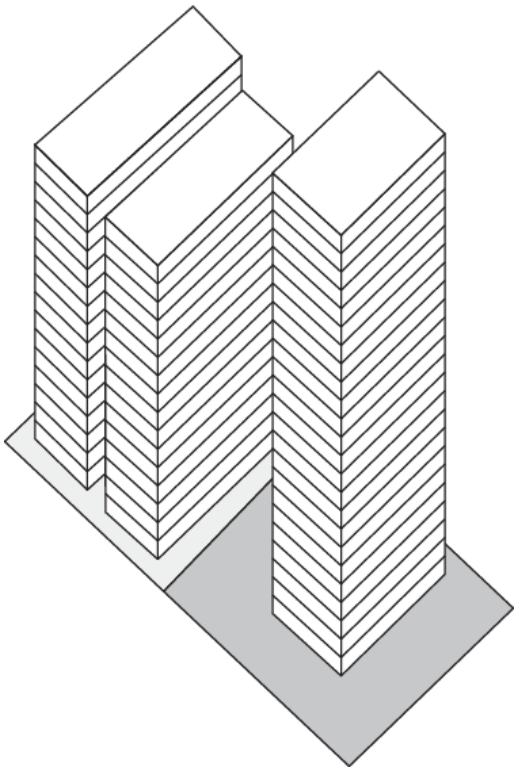

Figure 1. Existing model for slum redevelopment

Case study Gazdar Bandh Slum, Mumbai

GazdarBandh, a densely populated slum community located in the Western suburbs of Mumbai is one such case. Walking through the narrow lanes and streets of this thickly populated slum community in Mumbai's bustling commercial district, one may not become aware of its informal conditions. The dense social life, ongoing economic activities and thickly populated residential and working spaces are actually the outcome of unique connections between people and places since three or more decades. This thriving everyday urbanism renders place based visual identity to this urban space yet remains informal and excluded from the Master Plan.

Existing Data of Gazdar Bandh Slum

Total Rooms: 12,000

Total Illegal Rooms :1800

Total Registered With Maharashtra Housing And Development Authority (Mhada):10200.

Total Population (Approximate): 65,000 (90% Hindus From Uttar Pradesh And Mahrashtra)

Occupation of the Slum Residents:

Auto Drivers

Service (Watchman, Drivers, Office attendant, courier boy, delivery boy etc)

Local Shop

Building Contractors & Labourers

Tiffin Service

Papad & Bread Making

Mechanics (Automobiles, AC, Computer Repair, TV)

Landlords (illegal): Ground floor occupied by the landlord and upper floor is rented out

Figure 2. Gazdhar Bandh Layout

Located in estuary conditions, residents of Gazdar Bandh are exposed to impending environmental disasters and health hazards until they are immediately addressed.

Figure 3. Gazdar Bandh slum site covered during field study

Unplanned growth and haphazard aesthetics can be greatly altered with the help of locals and few corrective measures, imaginative designs, and planning innovation.

Figure 4. Gazdar Bandh slum site covered during field study

Figure 5. Gazdar Bandh slum site covered during field study

Figure 6. Gazdar Bandh slum site covered during field study

4. Conclusion

In 2006, floods in Mumbai exposed the city's vulnerability, crumbling infrastructure, lack of coordination among government departments, and lack of preparedness to deal with disasters. Existing literature establishes that coastal megacities like Mumbai will be exposed to risks associated with climate changes like rising sea level, heat waves, tropical cyclones and storm surges besides changes in rainfall (Hallegatte, Henriet, Patwardhan, Narayanan, Ghosh, Karmakar, & Herweijer, 2010; Stecko, & Barber, 2007). Therefore, climate is becoming an increasingly important challenge as it starts to eat into India's high economic growth rates and seriously impact the lives and livelihoods of millions of people (Revi, 2008). Post 2005, the Municipal Corporation of Greater Mumbai (MCGM) established a Disaster Management department, prepared a special plan for the monsoons, and planned for better departmental coordination during rescue operations. The existing program me in Mumbai focuses on post disaster operations and largely ignores disaster risk mitigation strategies to reduce vulnerabilities that are inextricably connected with the everyday lives of residents living and working in informal settlements dotting the city. The most crucial of these include poor solid waste management practices, unsanitary garbage disposals into streams and estuaries that have been reduced to *nullas* (adapted from Hind word meaning watercourse) especially as witnessed in the slum site chosen for this study, open drains, resulting in clogging of drains and eventual flooding. What is also missing in the existing disaster management program is the lack of integration of city residents, especially slum communities into the design, planning and governance processes of city as stakeholders. The idea of local area plan (LAP, Participatory approach) was first proposed in the Development Plan of Mumbai 2014-34. Implemented at the administrative ward level of the city (microcosm of urban governance), LAP allows planning for urban renewal, housing, mixed-use development, and civic amenities at the locality level with help of local resident and stakeholders. The Union Housing and Urban Affair Ministry has recently re-launched Local Area Plan (LAP) and Town Plan Schemes (TPS) for 25 smart cities in India in 2018 to accelerate resolution of area-based infrastructure issues. This announcement also includes central assistance of Rs 50 crore for convert to millions 25 states for LAP and TPS. According to reports, the assistance is decided to be released in three installations; 20 per cent with

the submission of a preliminary proposal and 40 per cent during submission of a final plan. LAP and TPS are formulated under Atal Mission for Rejuvenation and Urban Transformation (AMRUT), 2015 to enable planning for developing infrastructure in the brownfield areas and the green field areas respectively (Source:.eletsonline.com accessed on 20 August 2018).

Still in its initial stages, LAP provides opportunities for localized design experimentations that could eventually inform the city planning process. Local Area Plan (LAP) is envisaged as an intermediate level of planning which would address place-specific issues of the city. Place specific concerns include redevelopment plans for large slum or resettlement areas and for urban renewal, plans for areas undergoing land use changes and transit oriented development. The LAP also calls for place specific urban design guidelines for heritage precincts, designs and development of distinctive public spaces and streetscapes. It perhaps make sense in mega city context of Mumbai, whose diverse geography, history and communities necessitate an alternative approch for their inclusion in the planning process which is currently silent on risks to environmental disasters and consequently invites citizens to formulate their own strategies. The provision of LAP is a bottom up appproach operationalised at the administrative ward level wherein making, transforming and directing development is possible in consultation with multiple stakeholders and residents themselves. LAP by definition is based on local needs, subsidises the notion of master plan and drawing board approach. It is therefore a good starting point to incorporate area specific design stragies developed in consultation with the community factoring in their risks and ways of mitigation. Based on our case study in GazdarBandh slum located in Mumbai we suggest an operational framework that could be plugged into LAP drawing on the principles of participatory planning and good urban place engaging multiple stakeholders.

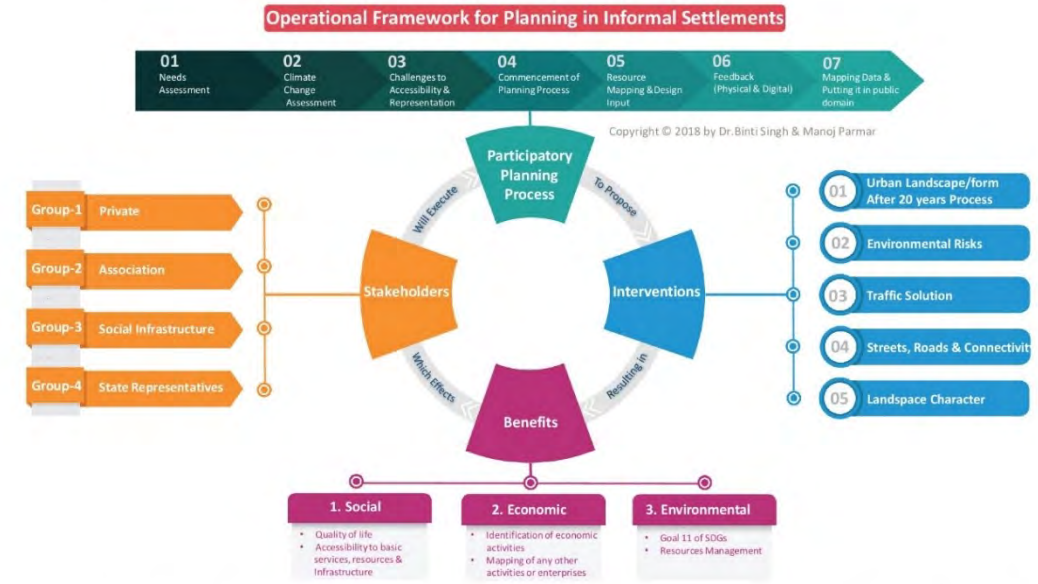

Figure 7. Operational Frmework for Planning in InformalSettlements

LAP argument and discussion

Once the operational framework is established, it shall enable the process to articulate the various conditions that exist within the slum communities. Those conditions are varied from residents associations, illegal landlords, manufacturing unit owners, shop owners, socio-cultural background, user groups & demographic data along with the system that operate the entire network within the slum settlements namely, physical infrastructure, solid waste disposal systems, existing livelihoods. The next level of analysis shall be carried out in understanding the land topography and profile, watershed and vegetations (mangroves), and other ecological features of the site. The overall interdependency of data shall allow the local area plan to create awareness and articulate the nature of problems and its relationship with the issues at large. The local area plan shall enable the process as mentioned in the Figure 8, which explains the process of engagement in executing the action plan with focused discussion on

issues.

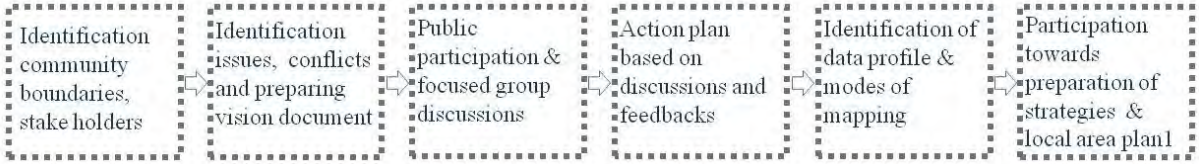

Figure 8. Local Area Planning Process

Once the process of action plan is in place, it shall help in gathering the nature of data (data profile) and various modes of mapping. The segregation and integration of data shall in turn helps to create various participatory groups in form of small to large group of concerns. The final stage of local area plan will focus on the priority action plan that enables the process towards the execution of the proposals in stages to make the participatory approach not only effective but representative of environmental, social and economic equities.

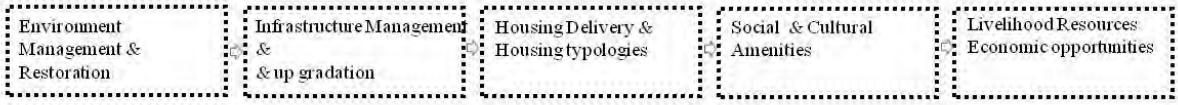

Figure 9. Local AreaPlanning Management and Implementation

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