STREETS AS TOOLS FOR URBAN TRANSFORMATION IN SLUMS:

A STREET-LED APPROACH TO CITYWIDE SLUM UPGRADING

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FOREWORD

Current processes of spontaneous urbanisation are adversely affecting the future of cities in the developing world. This form of urbanisation generates what we define internationally as slums and where one third of the global urban population lives today. Urban expansion in some parts of the world has become synonymous of this type of unplanned urbanisation that hinders cities in maximizing their role in social prosperity, economic development and wealth generation. As our data suggests, common features of this type of urbanisation are the poor living conditions, inadequate urban basic services and a significant lack of public spaces and streets.

The virtual absence of the most basic urban common good, which is public space, disrupts the liveability, safety, security, mobility and local development of urban areas. This strategy paper on street-led slum upgrading supports this argument with unequivocal evidences drawn from several cities around the world. It illustrates my belief that urban planning combined with a network of streets and public spaces provide a viable solution to start solving the problems of slums. This approach connects and reconnects slums with the rest of the city by opening up space for infrastructure provision and income generation, enhanced security of land tenure and setting the basis for slums to transform themselves into future vibrant neighbourhoods.

As a former mayor and an advocate of good urban planning, I believe strongly in the need to reassert the role of streets in the process of improving the quality of life in slums. By laying streets as part of the urban plan of the area and opening up public space in slums, we are not only delineating public and private domains. We are establishing the basis for people to live a life in dignity, providing them with an address, greater accessibility to public services and creating the opportunities for urban regeneration that ultimately encourages prosperous and inclusive cities.

I am proud to share this publication with the wider public of urban practitioners, policy makers and political decision makers, because it illustrates well our approach towards slums-upgrading. This adopts streets not only as a vehicular road but as a vector for an incremental urban transformation that integrates slums into the overall development strategy of the city. It further underscores the multipurpose function of streets as the social and economic space that constitutes the public domain through which all basic urban services are provided and maintained.

This strategy paper is rich in examples that demonstrate the practicability of the street-led slum upgrading approach that UN-Habitat is advocating for. It showcases the incremental street-led development and transformation of slums that builds on the fundamental notion of streets being the stepping stone in improving the quality of life and living conditions in slums. We acknowledge that this is not a magical pill that cures all the ailments of the society, such as injustice, inequalities and discrimination, but rather a solid contribution of urbanisation to address the pressing needs of the slum population.

I am pleased to read the positive peer-reviews done by world class experts and am confident that the readers of this publication will benefit from the knowledge, experience and propositions that UN-Habitat brings herein.

Dr. Joan Clos,
Under-Secretary-General of the United Nations
Executive Director, UN-Habitat

ACKNOWLEDGEMENTS

EXECUTIVE SUMMARY

1. ACCUMULATED KNOWLEDGE AND KNOW-HOW BUT WORSENING CONDITIONS

During the last 50 years, governments have implemented a wide range of slum upgrading projects and programmes of varying scale and scope and with different levels of impact. The lessons learned from these experiences and the knowledge developed by UN-Habitat demonstrate that technically slum upgrading is an easy and straightforward urban regeneration intervention – there is sufficient experience, knowledge, skills and know-how to be drawn upon internationally. But despite the wealth of knowledge and experience available in the world, the growth of slums and the multiplication of informal settlements are only getting worse, particularly in parts of Asia, Sub-Saharan Africa and parts of Latin America. This is undermining the ability of cities to generate wealth, prosperity, economic growth and human development. Considering the large scale of slums, their consolidation and the number of people they house, ignoring the challenge of slums is a short-sighted and unsustainable political policy for any city or nation.

2. CITYWIDE APPROACH: FROM PIECEMEAL PROJECT BASED UPGRADING TO PROGRAMME SCALE

Undoubtedly the importance of slum issues has risen in local and national political agendas. In many cities, slum upgrading has been brought to citywide scale and in some countries even to national scale. This shift has been represented by some comprehensive and complex programmes, which have significantly been initiated and led by political leaders and implemented with the participation of slum communities. These examples have attracted international attention and many are UN-Habitat best practices. Despite such efforts and achievements, slum upgrading has remained outside mainstream urban planning and management and upgraded slums are rarely looked upon as urban neighbourhoods.

3. STREETS: SHIFTING THE DISCOURSE

This paper is advocating a shift in approach to slum upgrading from thinking of slums as islands of poverty and informality to slums as deprived neighbourhoods that are an integral part of the overall city system, but spatially segregated and disconnected due to an absence of streets and open spaces. Taking advantage of streets as the natural conduits that connect slums with the city, UN-Habitat is suggesting a fundamental shift towards opening of streets as the driving force for citywide slum upgrading. Streets are vital elements in the improvement of quality of life in slums, particularly in densely occupied settlements where the absence of streets is the source of multiple problems faced by slum dwellers and the city as a whole. Opening streets, or reinforcing and improving existing streets and accesses, should be considered a non-negotiable, or *sine-qua-non*, in slum upgrading interventions, with a view to integrating slums into the overall city planning and management and fostering urban regeneration.

4. ALIGNING POLITICAL WILL WITH TECHNICAL KNOWHOW AND CITIZEN PARTICIPATION

Slum growth today is rampant and will negatively affect future generations unless a clear vision for the future of our cities is urgently developed and implemented. UN-Habitat is suggesting a change of course that focuses on streets as a business case for overall urban regeneration that can also help cities to play their role as engines of development. The street-led approach to citywide slum upgrading outlined in this paper is a simple, cost-effective and inclusive way of initiating change that is well within existing technical knowledge and experience. However, action can only be taken if leaders such as mayors, ministers and politicians have the political will and determination to act and lead the process and encourage the involvement of residents as well as NGO's, municipal departments, private entities and civil society organisations in the process.

5. STREETS SUPPORT AN INCREMENTAL APPROACH

The implementation strategy outlined in this paper builds on the practical and symbolic role of streets as the key to linking up neighbours, businesses and economic activities situated adjacent to each other and sharing the common public space provided by the streets. This strategy is well-suited for phased and incremental development through strong participatory planning, rather than pursuing the complex implementation of a full-fledged upgrading and urban layout plan as a single-phased approach. The incremental approach based on the prioritization of streets will ensure that strategic choices are made and that the streets selected for improvement or implementation initially are actually the ones that are likely to bring the best outcome in terms of development opportunities, poverty reduction, optimization of land use and generation of wealth as a result of increase in property values. The approach will also ensure that city level concerns for connectivity and mobility are considered. Further, implementation targets can be set and gradually enhanced in keeping with the technical, managerial and financial capacity of local government.

6. STREETS ARE SOCIAL SPACES FOR PARTICIPATORY PLANNING

This strategy uses streets not only as a physical entity for mobility and accessibility – through which water and sewerage pipes, power lines, and drainage systems are laid – but as the common good and the public domain where social, cultural and economic activities are articulated, reinforced and facilitated. The existing and to be upgraded street network provides a given structure of owners and tenants who already know each other and have common interests as they share the same space and its associations. Organizing a neighbourhood for a participatory intervention along these given structures is therefore highly efficient and

effective. It easily enables the participation of communities in generating reliable and accurate information on settlements, which forms the backbone of the street-led approach. Inventory of the physical configuration and spatial structure of the settlements; enumeration of housing units; determination of tenure conditions and income are properly recorded and endorsed by all parties prior to slum upgrading interventions. Street-based participation is critical for prioritizing the streets and the future urban layout configuration of their neighbourhood, which forms part of an area-based plan that integrates their settlement with the overall city plan. The urban layout that results from this participatory planning process is another important component of the street-led slum upgrading strategy which calls for different communication and visualisation strategies that are easily understood by all stakeholders.

7. STREETS ARE TOOLS FOR INCLUSION, SECURITY AND PROSPERITY

Streets trigger economic activity, attracting shops, services and increased residents' identity with their place of residence, bringing an enhanced sense of security and orderly development. The introduction of public lighting and mixed use along a street's route is likely to bring more usage and social interactions amongst residents with positive impacts on the sense of public safety. Street naming and house numbering establish physical addresses and locations, enabling residents to gain an address and postal code, the first steps in gaining citizenship rights.

8. STREETS DETERMINE NEW LEGAL BOUNDARIES

The opening and consolidation of key streets will gradually create the future urban configuration of the settlements but most importantly lay the basis for legalisation and regularisation of land tenure. Security of land tenure generates private investments in building improvements and housing rehabilitation which in itself will generate wealth and urban value. For local authorities, this step towards regularising property boundaries lays the foundation of the physical and fiscal cadastre that will enable the capture of property tax and user's tariffs on infrastructure and public services. These are inevitably linked to the opening of streets, urban layout of settlements and the definition of public and private domains.

9. MINIMUM RELOCATION FOR MAXIMUM IMPACT

The street-led slum upgrading approach requires the preparation of an area-based plan, with the participation of local residents, defining a spatial structure for the settlement and the basic street pattern. Such a process of planned upgrading would, to a lesser or greater extent, require opening new streets, widening existing streets and carving out public open spaces. It is recognized that the opening of streets is central to boosting the economy of an area and integrating it into city urban management systems. Ad-hoc infrastructure improvement that leaves intact the existing

unplanned and haphazard land occupation of settlements is costly and counterproductive in the long-term and should be discouraged. The area-based plan that materialises a better urban configuration and spatial structure for the settlement is a *sine-qua-non* for the transformation of slums into urban neighbourhoods. However, this inexorably entails demolitions and resettlement to land located within or nearby the settlement. The trade-offs between avoiding relocation on one hand, and better connectivity, development potential and integration into the city systems on the other, need to be considered by the community for arriving at a decision.

10. SAFEGUARDING LIVELIHOODS AND PROMOTING PLANNED LAND OCCUPATION

Integral to slum upgrading by improving streets and forming urban layouts is the provision of land for relocation and housing reconstruction. For maximum impact with minimum disruption, the supply of serviced land for new relocation housing within or near settlements is critical. The proximity of the new location is vital in order to prevent disruption of social networks and the residents' livelihoods. Scarcity of land for resettlement in or near the original settlement may result in relocation of affected people in multi-family housing that will necessarily impact on residential densities. In case there is no possible alternative within the area-based plan of the settlements, governments should provide land at adequate locations.

11. AVOIDING 'ONE SIZE FITS ALL' SOLUTIONS

UN-Habitat is mandated to monitor and report on the progress and achievements of the Millennium Development Goal that specifically focuses on the improvement of lives of slum dwellers. The shift in approach to slum upgrading, as suggested in this working paper, if embraced by governments and their partners from public, private and community sectors, meets this goal through creation of greater accessibility, access to services and citizenship rights for slum dwellers, while triggering urban regeneration and connectivity with the rest of the city. This approach will only work and result in positive social and economic development outcomes if it is brought to the scale of citywide programmes. It should be noted that though the principles of the street-led approach to slum upgrading are universally applicable, the scope and scale of interventions may vary widely given the differences between slums in different cities, and even within a city. However, the incremental approach to improving and opening streets, together with long term political commitments to creating opportunities for improving living conditions and generating prosperity, are key to eventually realising the transformation of slums to urban neighbourhoods in any situation.

12. RESULTS: FROM PIECEMEAL INTERVENTIONS TO CITYWIDE STREET-LED SLUM UPGRADING

In summary, the key elements in this proposed approach to slum upgrading encompasses several elements. Some of

these have been long-established elements in existing slum upgrading programmes, while others are innovative and represent a different approach for UN-Habitat, and one it now seeks to promote with partners and urban decision-makers.

- Focus on streets and urban layout of the settlement, as the driver of transformation and regeneration (and subsequent street naming and addresses);
- Maximise citizens' participation and participatory planning;
- Re-emphasising the importance of mapping through participatory enumeration and locally acceptable forms of social & physical mapping;
- Continued basic infrastructure provision, e.g. water supply, sanitation, drainage;
- Land allocation for resettlement and new housing provision.
- Ensuring security of land tenure within slums, ultimately leading to regularisation and legalisation.
- Incremental approach to integrating slums with the city

New Street in Favela Rocinha, Rio de Janeiro (Rua 4c)
by ArquiTraco, Daniela Javoski

PART A

THE CONCEPTUAL FRAMEWORK

1. INTRODUCTION - STREETS AS PILLARS OF URBAN TRANSFORMATION

A defining feature of urban growth in developing countries in the last century through today has been the emergence and proliferation of slums. These settlements are characterised by unhealthy housing conditions and a lack of basic services, conditions that exact significant human and financial costs on slum residents, cities, and national economies. Over the years slum upgrading projects in many cities have helped people to obtain an improved, healthy and secure living environment without being displaced. But these efforts have not been able to respond to the large and growing scale of the problem, and it is recognized that rapidly urbanizing countries need to expand slum upgrading from project-based to citywide approaches. This calls for well-defined holistic strategies that put slum settlements at the heart of planning processes, both for upgrading and integrating them with the city and for preventing slums in the future. Such an approach can actually trigger urban transformation at city level and impact the overall urban spatial structure of cities.

This paper presents a strategy for using streets as drivers of citywide slum upgrading and urban transformation. It argues that a street-led approach to slum upgrading presents a practical and simple business case for realizing the agenda of citywide slum upgrading by gradually integrating slum settlements with the urban fabric. Streets have been treated in slum upgrading interventions around the world as natural conduits for retrofitting services and facilitating the movement of people, goods and vehicles. However, their important function as a common good, the public domain where social and economic activities are articulated, reinforced and facilitated[1] has not been sufficiently built into programmes. Nor have streets been effectively used for social, economic and spatial integration of slums with the city.

In practice streets trigger a range of benefits for slum residents and generate multi-dimensional outcomes and prove to be vital for the future consolidation of settlements. They attract shops and services, and they promote people's identification with their place of residence, bringing in orderly development and an enhanced sense of public safety, especially for women and children. This often translates into household investment in shelter improvement and economic activities, even without legal security of tenure. In informal settlements of Latin America, for example, residents commonly regard streets created by government slum upgrading projects as an official recognition of their residential areas and a stepping stone towards citizenship and realisation of tenural rights[2]. The

strategic approach suggested here draws on such practice and pragmatic lessons from international experience.

Streets are the starting point for a physical integration of slums into the formal and official systems of planning and urban management that govern a city. But the realisation of streets must be accompanied by a set of public policies and strategic interventions to complement and strengthen environmental and social inclusion strategies and secure the Right to the City. These would include improving access to safe housing and employment opportunities and prevention of slums through opening new streets and layouts that are affordable to the poor.

A focus on streets has benefits for a range of stakeholders and provides the ideal platform for the involvement of local government, NGO's, private entities and civil society organizations in an incremental process of urban regeneration. **The active participation of residents and their grassroots organisations in the formulation, prioritisation, implementation and post-implementation maintenace phases of upgrading is central to the strategy.**

The strategy presented here takes into account the fact that opening up and realigning streets in existing settlements may require some amount of resettlement, which needs to be agreed with residents and built into the citywide slum upgrading plan. It also recognizes that informal settlements are vulnerable to multiple disasters such as floods, fires, landslides which are likely to be exacerbated with climate change. The layout and design of streets needs to build in the requirements of disaster management and rescue and relief operations.

Part A of this document introduces the concept and approach of street-led citywide slum upgrading. Part B moves from theory to practice, from the general to the specific, from paradigms to methods and lessons from international examples, in order to articulate a set of principles and do's and don'ts which will inform the development of strategies in different cities.

2. ADDRESSING THE CHALLENGES OF SLUMS

In 2007, the world reached an important milestone. For the first time, urban dwellers outnumbered the rural population, with more than half of the humanity now living in towns and cities. Urbanisation is shaping our planet and is leading the global economic development. Recent studies report that 600 urban centres house one fifth of the world's population and account to 60% of the world's GDP, lifting more people out of poverty then any movement in history.[3] This phenomenon is mainly taking place in the developing world.[4]

However, with rare exceptions, this extraordinary urbanisation has been accompanied by increasing inequalities, growth of informal employment and expanding slums and informal settlements. In parts of Asia and Sub-Saharan Africa, the growth of slums is taking place at such unpredictable rates that urban growth has become synonymous with slum formation.[5] Consequently, in these regions, cities are growing in predominantly informal ways rather than on the basis of planned development processes. **This entrepreneurial form of urbanisation may counter-intuitively undermine the ability of cities to generate wealth, prosperity, equity and economic and human development.**

Failure to address the challenge of slums brings an intrinsic risk of unprecedented scale. It is a short-sighted and unsustainable political policy for any city in the world.

2.1 EXPLAINING SLUMS

Slum typologies and underlying causes

The catch-all term 'slum' refers to a variety of settlements that display a combination of poor housing conditions, lack of basic infrastructure, insecurity of tenure and various kinds of environmental risks. Slums include a variety of settlements such as shanty towns, squatter settlements and illegal subdivisions characterised by their informal tenure. They also include dilapidated inner city housing, overcrowded tenements, villages within cities and deteriorating public housing. Each of these originated, proliferated and developed differently, may vary in size from a few huts to thousands of permanent dwellings, and may be located in the city or its periphery. **Terms such as autonomous, illegal, irregular, marginal, spontaneous, uncontrolled, and unplanned have been applied to distinguish these settlements.** They are also identified by distinctive terms peculiar to given regions and countries[6]. What is considered as slum invariably depends on local and regional perceptions of housing standards and social conditions.

Asia

Slum formation in Hunchun China.
Photo: Alessandro Scotti.

Africa

Slum formation in Addis Ababa next to main arterial roads. Photo: Claudio Acioly.

Latin America

Illegal land subdivision in Sao Paulo, Brazil, showing regular street patterns.
Photo: Municipality of Sao Paulo.

Dharavi, Mumbai, depicting the absence of public space and streets. Photo: Mark Hillary.
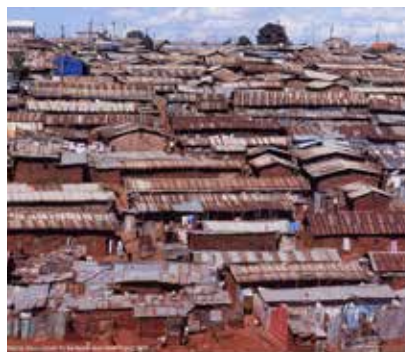
Slum in Nairobi showing critical absence of streets and public space. Photo: UN-Habitat.

Slums on steep hills in Medellin, Colombia, showing constraints in accessibility, streets and public spaces Photo: UN-Habitat.

Figure 1: Typology of slums in Asia, Africa and Latin America

There are multiple typologies of slums and basically an informal model of land development is characterized by the OBIP logic described by Baross: Occupy, Build, Infrastructure and Planning (See Figures 2 and 5). There are, however, two main informal settlement development trends.

The first one is characterised by a series of individual, mostly autonomous, land appropriations and occupations followed by incremental building construction by individuals, households or landlords that result in settlements with constrained accessibility and a limited number of streets (if any), pathways and corridors. These settlements make upgrading and service delivery very difficult and at times very costly. The second consists of organised and pre-planned land developments carried out by informal developers and occasionally by organised groups of households. Because land parcels are commonly acquired by financial transaction, they tend to have clearer boundary delineations and better defined public and private domains, improved accessibility, transport options, service corridors, and for future development.

Graphically (on a figure-ground diagram), the first case would be easily recognizable through its irregular patterns and unplanned occupation, higher mass-to-void relationships (higher densities) with very small, winding corridors and pathways that foretell the limited possibilities for land regularisation, services provision, circulation, as well as for public spaces (see Box 9). The second case, on the other hand, presents a much more predictable pattern of land occupation with noticeable signs of urban layout planning. Should it outlive potential threats of eviction and/or denial of its legality, this case makes for an easier provision of infrastructure in the future particularly because of its rather defined street pattern. Despite having intrinsic difficulties with upgrading, the dense slums of case one may also become consolidated neighbourhoods with access to streets, services and public spaces over time, particularly when residents achieve security of tenure through active dialogue with governments.

Definition

It has been recognised that understanding and articulating the differences in physical, social, economic and political deprivations of slums are critical for developing effective strategies for improving living conditions in them and integrating them with the rest of the city. At the same time, there has been a concern to find a universal definition of 'slum' so that it serves as a yardstick across cities. This was considered particularly relevant for monitoring the Millennium Development Goal 7, Target 11 'to improve the lives of at least 100 million slum dwellers by 2020' [7].

UN-Habitat uses an operational definition of slums which was developed in 2003 after extensive consultations with international experts and institutions. The definition is based on measurable indicators depicting commonly occurring deprivations at household level across different slum typologies. Four of the five indicators, known also as shelter deprivations, measure physical expressions of slum conditions: lack of water; lack of sanitation; overcrowding, or lack of adequate living space; and non-durable housing structures. The fifth indicator – security of tenure – has to do with legality and formality[8].

In practice only the first four indicators are used to define slum households. Secure tenure is not included, even though its importance is sufficiently recognised, as it is not easy to measure or monitor. Typically, information on secure tenure is not available for most countries[9]. It has been pointed out that the inherent limitation of the household concentration approach is that it does not consider the characteristics specific to the settlement, such as the condition of roads, drainage systems or management of solid waste. Nor does it consider if the settlement is an environmental risk area[10].

Figure 2: The Formal and Informal Logics of Urbanisation.
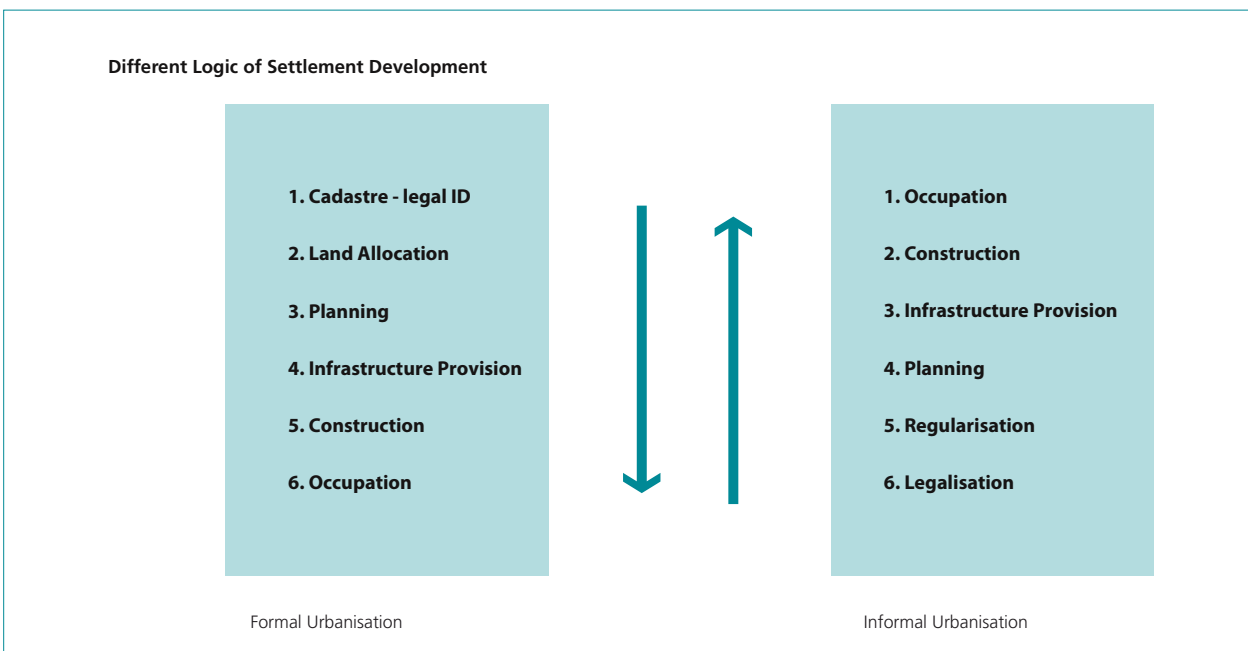
(Source: Baross 1987, Acioly, 2010)

A slum household consists of one or a group of individuals living under the same roof in an urban area, lacking one or more of the following five amenities:

1. durable housing (a permanent structure providing protection from extreme climatic conditions);

2. sufficient living area (no more than three people sharing a room);

3. access to improved water (water that is sufficient, affordable and can be obtained without extreme effort);

4. access to improved sanitation facilities (a private toilet, or a public one shared with a reasonable number of people); and

5. secure tenure (de facto or de jure secure tenure status and protection against forced eviction).

Source: UN-Habitat (2006)

Magnitude

The key challenge of slums is their large scale. On the positive side, 220 million people have been lifted out of slum conditions during the decade 2000-2010, surpassing target 11 of MDG 7. Over the past 10 years, the proportion of the urban population living in slums in the developing world has declined from 39 per cent in 2000 to an estimated 32 per cent in 2010. However, slums constituted nearly half of the urban growth during this period. They are likely to grow annually by 6 million every year, to reach a total of 889 million by 2020[11]. Within this overall global picture, there are considerable regional variations in the concentration of slums (Fig. 3).

Table 1 gives the trends in slum population growth in major regions in absolute numbers and related to the urban population.

It is significant that except for North Africa, **the absolute number of slum dwellers has grown, even though the proportion of slum population to urban population has declined.** In North Africa the reduction in numbers has been attributed to effective government policies for slum upgrading and prevention in the form of robust investment in housing

programmes. Various reasons have been given for the increase in the number of people living in slums in the other regions: the fractured development pattern of Sub-Saharan Africa caused by war, disasters and migration of the poor to cities, the high rate of urbanisation in South, South-East and East Asia, ongoing political turmoil, a related increase in the refugee population, and disruptions in the delivery of basic services and housing in Western Asia and a variety of causes in Latin America and the Caribbean, given the heterogeneity of the region such as political instability, shortage of formal housing options, disparity in income distribution and scarcity of land[12].

By far the worst shelter deprivations are found in Sub-Saharan Africa and Southern Asia, which are also regions with low Human Development Index and wide-spread poverty. Asian cities are host to 61 per cent of the global slum population, with India and China alone accounting for 153 and 171 million slum dwellers respectively. On the other hand, these are also the two countries which have contributed the most towards reaching MGD 7 target because of their proactive housing and slum upgrading programs and policies[13].

Figure 3: Proportion of slum population to urban population

Slum population as % of urban population
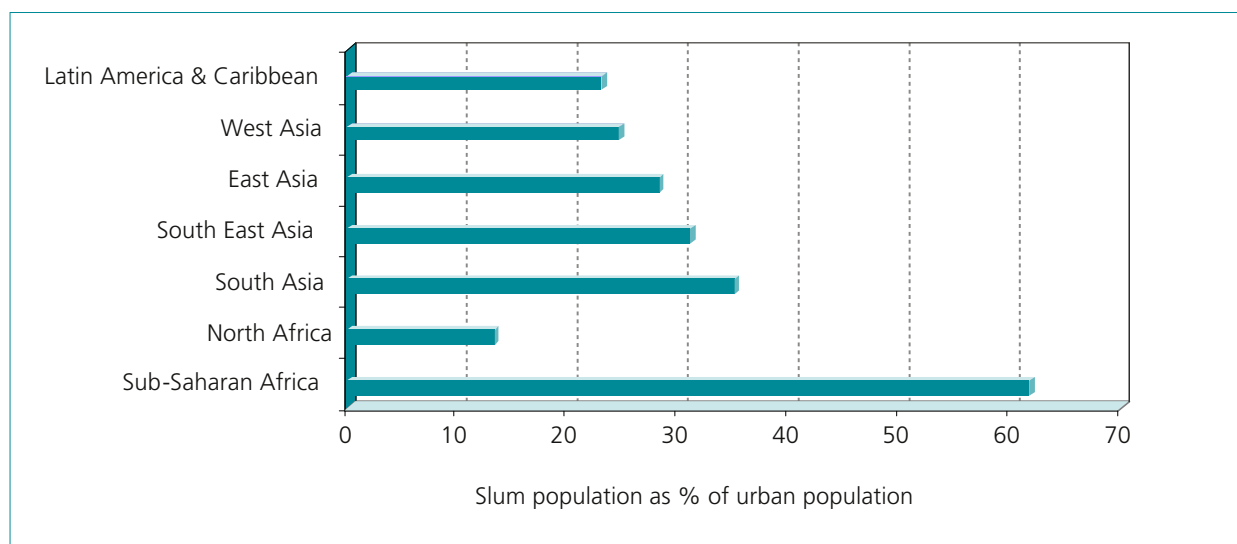
Causes and Current Trends of Slum Formation

UN-Habitat data[14] shows four distinct trends across most cities in developing countries. It can be argued that three out of four trends are directly related to the increasing competition for land leading to increasing prices for land and accommodation. As argued before, slums are developing in areas where no one else would want to be. With an overall increasing urban population and urban development of industrial, business and leisure areas the 'places in between' get smaller and fewer, pushing the poor out of their homes. This is putting the most pressure on the poor to find solutions as they are disadvantaged in the competition of land due to limited access to finance, knowledge about their rights and options and little political influence:

(1) Existing slum settlements are going through a process of densification

(2) Larger numbers are living in environmental risk areas such as steep slopes, creeks, river and canal beds, marshes and near polluted areas like garbage dumps

(3) The poor are moving out of the city into informal settlements in the periphery.

The fourth trend of increase in "slum cities", where most of the urban area has slum characteristics, with no distinct dividing line between slums and other areas[15] can be related to the limits of central and local governments to address the issue of urban planning, lack of financial and inadequate human capacity and knowledge.

Slums and informal settlements exist because of the very limited options available to the poor in the formal land and housing market, both in terms of numbers and price. Many also face barriers in accessing land and housing because of cumbersome, costly and time-consuming delivery processes. Similarly, building codes and planning regulations continue to be inappropriate for the poor. Urban planning practices focused on regulatory and normative planning have restricted rather than stimulated and enabled land development. By failing to articulate implementation strategies, master plans have caused more scarcity than availability of land for planned development, fuelling informality and informally developed land in cities. The present trend of development in the form of exclusive mega-projects adds to the problem.

Unable to access the formal market, low income households are left only with one option: to build, buy or rent dwellings of relatively small size, low quality construction and minimal service provision in informal settlements. In central places of high land value, households are forced to occupy land that is not in demand because it is unsuitable for building, such as land prone to flooding or land slides or along steep slopes, railway lines, canal banks and roadsides. They are forced to occupy as little space as possible, which leads to very high densities. Alternatively they may be forced to settle at the edges of towns and cities, where land may be more accessible, but is beyond urban infrastructure networks and far from employment centres[16].

Poverty and low affordability historically lie at the heart of the problem[17], but the growing wealth of cities also contributes to it. The intense demand for land particularly has had the inevitable consequence of driving up prices and drying up affordable land supply for the poor, and increasingly the middle class[18]. Data suggests that not all who live in slums are poor. Increasingly people with available income are resorting to slums and informal developments because of lack of diversified housing options and affordable housing

Proportion of urban population living in slums 1990-2012

Urban Slum Population at Mid-Year by Region (thousands)						
Major region or area	1990	1995	2000	2005	2007	2010
Developing Regions	650,444	711,832	759,915	793,723	803,280	819,969
Northern Africa	20,126	18,798	15,054	10,984	11,463	12,226
Sub-Saharan Africa	102,641	122,635	143,255	168,005	179,538	198,168
Latin America and the Caribbean	104,794	110,871	114,993	110,129	110,412	110,194
Eastern Asia	154,175	174,363	191,563	204,253	202,809	197,529
Southern Asia	181,667	190,758	194,364	192,842	192,325	190,647
South-eastern Asia	68,852	74,049	78,246	75,443	73,744	76,540
Western Asia	17,810	19,936	21,980	31,565	32,470	34,112
Oceania	379	421	460	501	520	552

Proportion of urban population living in slum (per cent)

Major region or area	1990	1995	2000	2005	2007	2010
Developing Regions	46.2	42.9	39.4	35.6	34.3	32.6
Northern Africa	34.4	28.3	20.3	13.4	13.4	13.3
Sub-Saharan Africa	70.0	67.6	65.0	63.0	62.4	61.7
Latin America and the Caribbean	33.7	31.5	29.2	25.5	24.7	23.5
Eastern Asia	43.7	40.6	37.4	33.0	31.1	28.2
Southern Asia	57.2	51.6	45.8	40.0	38.0	35.0
South-eastern Asia	49.5	44.8	39.6	34.2	31.9	31.0
Western Asia	22.5	21.6	20.6	25.8	25.2	24.6
Oceania [c]	24.1	24.1	24.1	24.1	24.1	24.1

Source: United Nations Human Settlements Programme (UN-Habitat), Global Urban Indicators Database 2012.

opportunities that meet their needs and ability to pay. This is a particularly worrying trend in the sense that the middle class could afford land and housing and could contribute to the overall positive development of the city but is not able to do so due to the slow urban planning capacities of central and local government bodies to deliver serviced land within a planned framework.

A far more serious challenge in addressing the issues of slums is the lack of political recognition/acceptance of slums by national and local governments. Even the existence of slums is denied by several countries often because they do not wish to tarnish the image of a developed and modern state. This results in the continuation of slum formation but political unwillingness to provide adequate land and housing, finance and human resource capability for their improvement or prevention.

Slums continue to provide a viable housing option for the poor and not so poor although living conditions in urban slums, characterized by a lack of basic public services and infrastructure, precarious housing, overcrowding and often escalating social problems, remain a major and growing challenge in cities all over the developing world[19].

On the positive side, slums are opportunity spaces for low income households not only for living in the city but also for carrying out economic activities and formation of social capital. Lively community networks, provision of a place to start city live, mixed use and little need of money-involved transport slums are unequivocal evidence of capacity and creativity of poor people to seek and build their own housing solutions in the absence of state support.

Figure 4: Slum types

Flooded settlement, Gonaives, Haiti. Photo: Marco Dormino

Kibera, Nairobi, Kenya. Photo: Julius Mwelu UN-Habitat

Flooded creek: Manaus, Brazil. Photo: B. Banerjee

Santo Domingo, Dominican Republic. Photo: M Guthrie

Favela Morro do Alemao, Rio de Janeiro, Brazil. Photo: Adrienne Acioly

Slums roofs Dar es Salaam, Tanzania. Photo: UN-Habitat

Kanpur, India. Photo: B. Banerjee

Tongi, Bangladesh. Photo: B. Banerjee

2.2 APPROACHES TOWARDS SLUMS OVER TIME

Responses and policies towards slums can be grouped into three categories: laissez-faire, restrictive or preventive, and supportive[20].

Up to the 1970s, policies emphasized restrictive measures such as slum clearance, urban renewal and resettlement in much the same way as was practiced in cities in Europe and North America in the early part of the 20th century. The preferred option for this ideology was slum redevelopment by relocation of residents to new public housing estates. However, given the much larger slum population and meagre resources in the developing world, this approach could not be implemented at scale. Parallel to this was the laissez-faire approach based on the notion that slums and irregular settlements are a transient phenomenon. Slum improvement was considered as a temporary measure for ensuring basic minimum environmental health conditions until residents could be re-housed in public housing[21]. For the majority of slum dwellers this could not materialize largely because of the prohibitive cost of building public housing at a large enough scale but also due to the much slower than expected economic development of the individual and the countries/cities as a whole.

From slum clearance to settlement upgrading & sites and services approaches

The 1970s saw the start of supportive policies when it became apparent that it was not feasible or even desirable to bulldoze enormous communities of the urban poor. A viable and low cost solution was to upgrade infrastructure and social facilities while leaving the communities intact or to support self-building efforts in new locations. Sites and services and slum upgrading projects in the early 1970s signalled the first fundamental shift in housing policy - a shift from total public housing provision within the resettlement effort to public assistance for housing construction and infrastructure provision for low income households[22] (Refer Fig 5).

"Upgrading is not a new concept itself. Squatter and slum upgrading is a newer concept, though not as new as some may believe. The Dutch proposed an extensive programme of upgrading the kampongs of Java as far back as 1938 and unpublicized schemes by engineers of good will, bringing modest improvements such as few water taps, have long been a feature of many tropical cities"[23]. In Rio de Janeiro, for instance, the favela of Brás de Pina together with others were subject to slum upgrading during the second half of the 1960s in a programme carried out by the Community Development Corporation-CODESCO, a government institution created to address the problems of slums and informal settlements (favelas) in the city[24].

Upgrading - or slum improvement as it is also called - in low income urban communities is many things, but at its simplest it has come to mean a package of basic services: clean water supply and adequate sewage disposal to improve the well-being of the community.[25] UN-Habitat promotes an approach which goes beyond this to create conditions for tenure security and incremental improvement of rights to land and housing through an incremental street-led citywide slum upgrading strategy.

Integration of slum upgrading into housing policies

In a global evaluation carried out in 11 different countries and cities, slum upgrading was looked at its broadest dimension, the roles of different levels of governments, the models of intervention and the impacts they had caused. The study outlined that upgrading evolved as a result of failures in conventional housing delivery systems, becoming a cheaper option of producing housing without necessarily building houses describing that "when it was accepted that construction of finished housing units was incapable of bridging the housing deficit, it was logical to consider the construction of unfinished units (sites & services) and cutting back on demolition, which only made the deficit more acute; instead, improvement of existing substandard housing, or slum upgrading, would be undertaken."

A large number of sites and services and slum upgrading projects were carried out in the next three decades up to the end of the 1990s in about 90 countries. These projects were designed with the objective of both improving and preventing slums. They were considered largely successful in stimulating the production of affordable housing for low income families but could not meet the objective of cost recovery and elimination of subsidies. It was found that the key features of these projects were not replicable by the central or local government bodies in a sustainable way. Waiver of zoning, land-use and building regulations, availability of foreign and domestic expertise, access to government land at below market prices, and interest rate subsidies were important aspects of these projects that could not be replicated. Consequently such interventions could not be scaled up to match the need and slum formation continued. An exception was the long term and massive Kampung Improvement Programme carried out incrementally with low per capita expenditure in Indonesian cities [26].

Figure 5: Logic of housing development

Conventional housing programme

Land tenure → Infrastructure provision → Housing → People

Sites- and services scheme

Land tenure → Infrastructure provision → People → Housing

Settlement upgrading

People → Housing → Land tenure → Infrastructure provision

Incremental-development scheme

Land tenure → People → Housing → Infrastructure provision
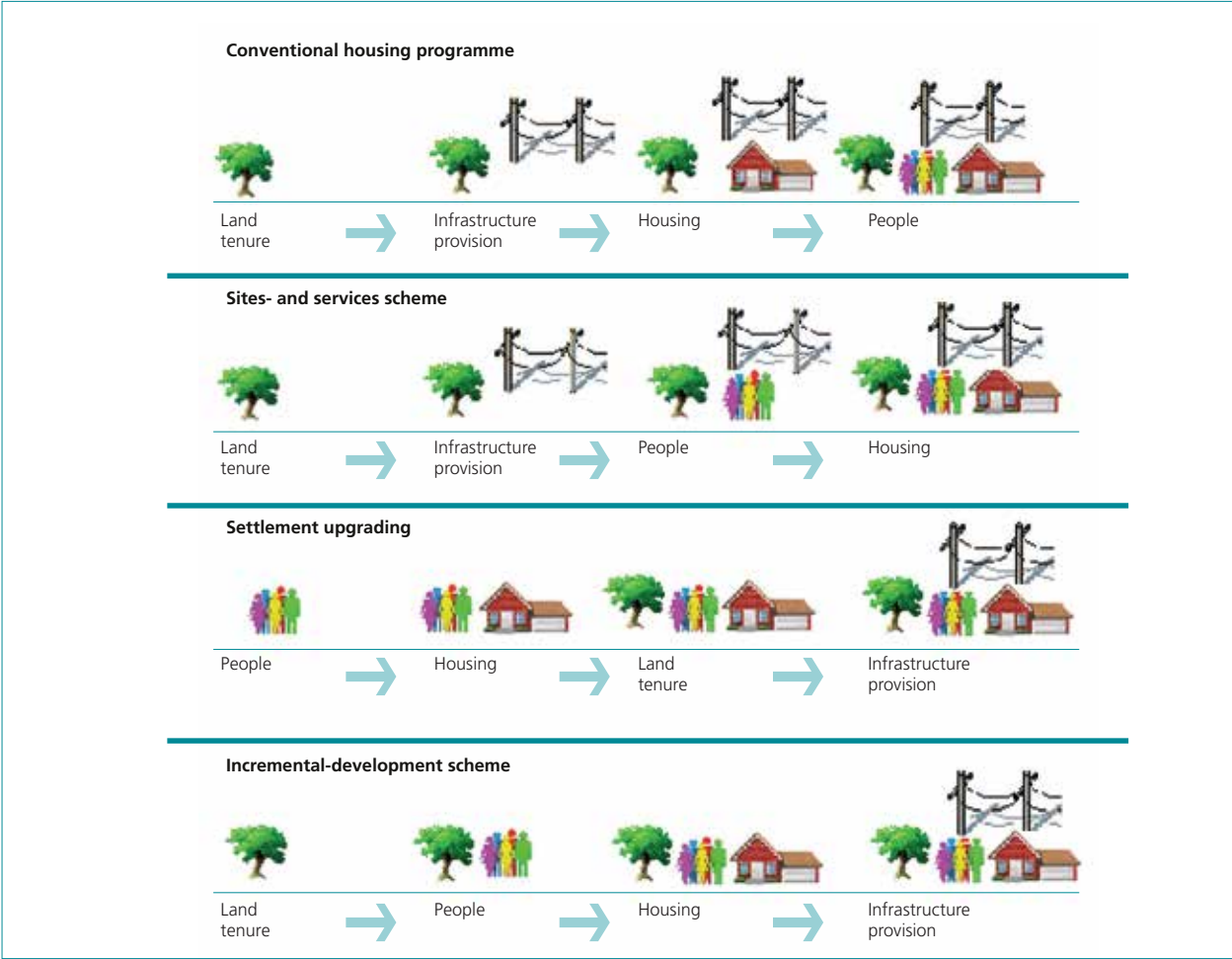
Introducing streets into the conceptual and operational definition of slum upgrading

For UN-Habitat[27], slum upgrading consists of physical, social, economic, organisational and environmental improvements undertaken cooperatively and locally among citizens, community groups, businesses and local authorities. Public policy actions typically include: installing or improving basic infrastructure, water reticulation, sanitation/waste collection, rehabilitation of circulation, storm drainage and flood prevention, electricity, security lighting, and public telephones, providing incentives for community management and maintenance, regularising security of tenure, home improvement, relocating/compensating the small number of residents dislocated by the improvements, constructing or rehabilitating community open space, promoting small businesses, supporting local economic development, etc. (Figure 6).

UN-Habitat promotes policies and strategies to enable access to adequate housing by all segments of society according to their needs, capacity and ability to pay. It advocates a twin-track approach. That means in practice that slum upgrading is part and parcel of a housing policy that aims to deliver housing options at scale and in variety of typologies, price, location, standard and size to all segments of the population. Thus, the twin-track approach has one leg focusing on the existing stock of slums while the other leg focuses on the supply of affordable housing opportunities that can act as viable alternative to slums.

From piecemeal settlement upgrading to citywide slum upgrading programmes

By the mid-1980s participatory slum upgrading was largely accepted in policy and practice throughout the developing world. But the limitations of project-based infrastructure improvements also became apparent. It was realized that unless slums are integrated with urban planning and management systems, the results of upgrading would be short-lived and yield only partial benefits to residents. Consequently government responses to slums and informal settlements have evolved from project-based infrastructure improvements to complex (citywide) slum upgrading programmes which are within the framework of inclusive development policies. Conversely the large scale of intervention justifies reforms in the areas of tenure regularisation, urban planning and regulations, service delivery and institutional development as critical conditions to bring slum upgrading to citywide scale. UN-Habitat promotes and encourages a programmatic approach to slum upgrading so that it can be brought to a citywide scale It discourages single settlement upgrading considered as piecemeal interventions with questionable impacts and little contribution to the overall future and planned city development process.

In the absence of citywide plans for upgrading slums and providing for future low income families, evictions of slum dwellers continued and even exacerbated with the growing demand for land in cities, particularly for infrastructure projects and hosting mega events like international games. Evictions

were often carried out in violation of human rights and did no comply with the principles of due process and recognition of the right to adequate housing as outlined in international instruments and the Habitat Agenda. These events spawned one of the most important trends in city development across the developing world: the articulation of rights based approaches by civil society and their gradual acceptance by governments. A case in point is the City Statute of Brazil[28] and several legal and constitutional chapters adopted by various countries in the developing world.

The last three decades have seen the emergence of vocal organizations formed by the urban poor, demanding their right to adequate housing and influencing city governments against anti-poor actions, and also forming partnerships with them and the private sector to improve access to land and housing. Networking and communication have enabled mutual learning and exchange across countries and international lobbying. The Asian Coalition for Housing Rights (ACHR) and Slum/Shack Dwellers International (SDI), for instance, have stopped forced evictions in many countries, are represented on international bodies and have mobilized substantial donor funding for networking and projects of urban poor organizations[29]. It is worth noting that the social organisation, political mobilisation and articulated demand of slum dwellers for recognition of slums and informal settlements have often successfully persuaded governments to move away from forced evictions, and relocation and resettlement policies.

On the other hand, decentralization and democratization policies across the developing world have worked to expand the power and influence of local government, which have proved to be more responsive to slum dwellers and more interested in upgrading programs than central governments[30].

Nowadays the slum upgrading approach is favoured by most governments, slum communities, NGOs and international funding agencies. It is cheaper, does not involve relocation to faraway public housing estates and the results are immediately visible[31]. The last generation of programmes aim at the regularisation, urbanisation and transformation of these informal settlements into residential areas that are spatially, legally, socially and economically integrated into the cities where they are located and form part of the official planning and urban management systems[32]. In-situ upgrading is increasingly based on incremental development strategies, integration approaches focused on physical plans and citizens' voice, and radical transformation of residential spaces through redevelopment. Common denominators of contemporary slum upgrading interventions in cities like Medellin, Rio de Janeiro, Mumbai, Ahmedabad have involved the opening of streets and the (re)planning of settlements to physically connect them to the formal city and its urban management systems.

Introducing streets into the conceptual and operational definition of slum upgrading

"A slum upgrading programme is not a collection of technical actions to be performed independently of each other. It is an integrated and comprehensive intervention aimed at improving the physical characteristics of a neighbourhood and its inhabitants' quality of life"[33]. The last generation of citywide programmes and the discussion on slum typologies earlier in this paper provide a rationale for taking the street pattern and the area-based plan that defines the future urban configuration of settlements as paramount for a citywide slum upgrading programme. This can pave the way for a series of public policy interventions that will ultimately include and integrate slums into formal urban planning and urban management systems. This would pave the way for transforming slums into vibrant neighbourhoods that contributes to city development and reinstitute people's rights to development. Opening new streets and layouts go hand in hand with the transformation of slums towards realising the twin-track approach of improving and preventing slums.

Figure 6: Participatory Slum upgrading

What is Slum Upgrading?

Essential Components

Facilities:
School, park, playground, clinic, daycare centre, community centre

Physical Improvement
Area-based plan, water supply, sanitation, streets, public spaces, power lines, drainage

Tenure Regularisation
Registration, demarcation, documentation

Housing Improvement:
Construction, housing expansion, technical assistance, building loans

Development Programs
Social, economic, health, cultural, educational,

Community participation

Existing Settlement

Thus streets can act as primary pillars for a deep set of informal settlement regularisation strategies at two interconnected levels. Within slums, streets and public spaces act as the primary conduits for social and economic transformation corresponding to urban layout of settlements generated by improving and opening streets. Slum streets when integrated with the urban network of city streets contribute to the physical, social and economic integration of these settlements aiming at the improvement of quality of urban life of people and the economic efficiency of cities. Street-led slum upgrading generates urban patterns that essentially reconnect slums-changed into neighbourhoods through a process of physical integration with the larger metropolis, which benefits the city as a whole.

2.3 CONCEPTUAL FRAMEWORK OF CITYWIDE SLUM UPGRADING

A brief retrospective of government interventions demonstrates the evolution from project-based in-situ infrastructure improvements to complex contemporary practices of citywide slum upgrading programmes, comprised of multiple and simultaneous projects aiming at the legal, social and physical integration of different slums into the official systems of planning and urban management. The move from project to programme was meant to bring slum upgrading to scale. Different cities have moved towards citywide programmes, and today it is recognised that institutional, management and human resources capacities must be in place if slum upgrading interventions are to be brought to citywide scale.

The UN-Habitat stance on slum upgrading recognises that there are **many robust approaches** to upgrading that have been carried out and tested in different forms, in different cities, and under different social, political and economic conditions during the last decades throughout the world. UN-Habitat also supports slum dwellers and civil society groups to strengthen participatory and rights based approaches to improving living conditions of the poor.

Local governments and other implementing agencies must be well-equipped in terms of human resources and be empowered by institutionally and legally protected mandates to intervene within the domain of slums. Capacity building of implementing agencies and local government staff is critical, particularly the development of city-to-city cooperation to enhance exchange of experience and transfer of know-how from those cities that have managed to go to scale, while also boosting skill development and appropriation of lessons learned.

A citywide scale approach is fundamental to enhancing the economic outcome generated by the opening of prioritised and multiple streets in different settlements, increasing connectivity, circulation and mobility also provide the opportunity for the ultimate physical integration of slums and informal settlements into their surrounding neighbourhood. Streets are the first step to integrating the economic resourcefulness of slum dwellers into wider urban and national markets. As security of tenure follows street patterns and the formalisation of a settlement's urban layout, so does physical mobility and economic access. This full integration strategy uniquely benefits from the coordination of upgrading policies with an overall urban development strategy.

At this scale, slum upgrading brings about tangible physical results in the form of streets, accessibility, infrastructure improvements, urban layout design and legalisation/regularisation of land tenure. The process is incremental, by phase, taking into account the peculiarities of a site, of its population and the financial, logistical, planning and managerial capacity of city governments.

The design of such a programme obviously requires a well-informed policy drawn on good mapping and reliable data about the scale, size, location, population, income, housing quality, and level of services available as well as adequate knowledge about the specific problems of each settlement. Additionally, since not all settlements can be upgraded in-situ, the criteria for deciding on alternatives and the technical expertise and financial resources required to implement them become important. The need to establish coordination and decision making mechanisms are also of great importance. A citywide slum upgrading programme follows a standard cycle as described in Figure 7.

Figure 7: Citywide Street-led Slum Upgrading Programme Cycle (Source: Acioly, 2010)

Street-led Citywide Slum Upgrading Programe Cycle

1. Policy Formulation
2. Programme management Set-up & Financial allocation, Funding agreement
3. City Mapping survey, Community Mapping,Enumeration, Social Economic Surveys
3. Eligibility and Selection Criteria Resettlement Upgrading
5. City Planning, Citywide Street Network Planning Consultations
6. Programme Design and Strategy
7. Project Appraisal Identification Slum Upgrading Prioritisation
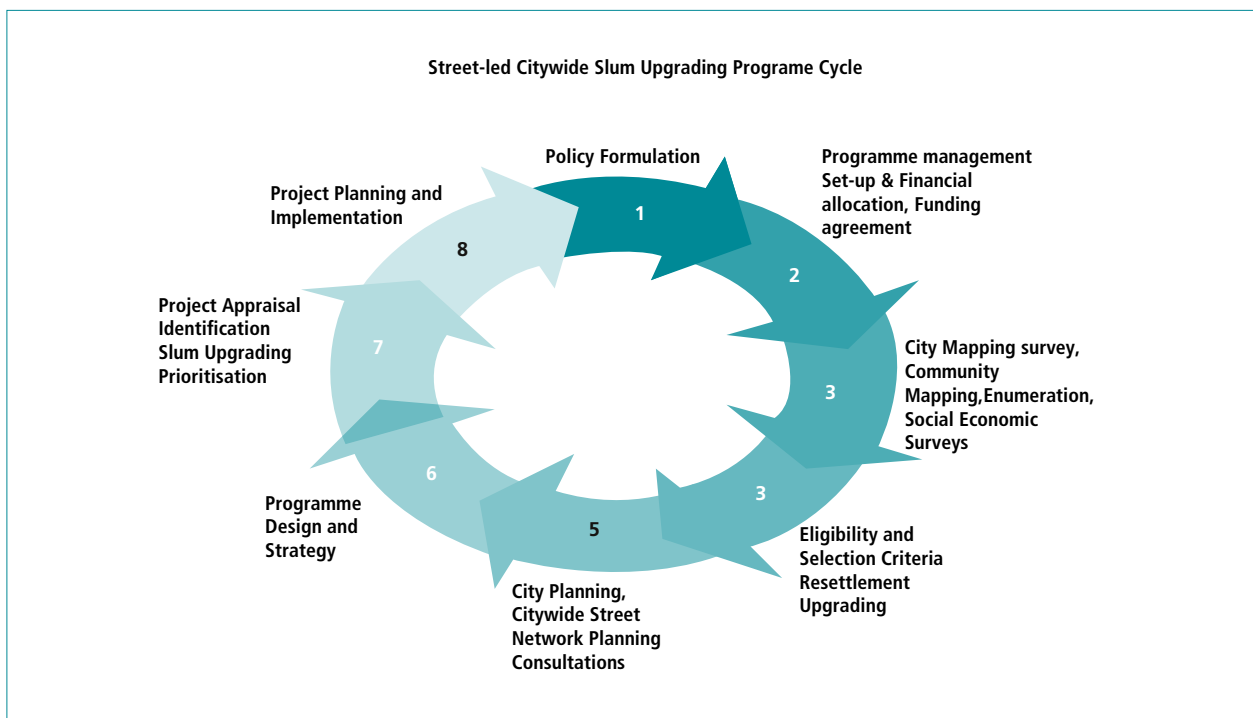8. Project Planning and Implementation

Figure 8: Indicative actions for citywide slum upgrading

Citywide slum upgrading

Policy supports	City level actions	Slum level actions

• Tenure regularisation
• Land market reforms
• Financial, institutional reforms
• Recognising the right to housing
• Working with civil society and private sector
• Regulatory framework for slums and low income housing areas
	• City information base on slums, mapping
	  - land information
	  - social, economic info
	  - housing conditions
	  - livelihoods, income
	  - environmental risks
	
	• Urban planning
	  - land for new low income housing, land for relocation, zoning of slums, density, street networks
	
	• Building regulations
	  - for slums and low income housing areas
	
	• Citywide slum upgrading action plan with stakeholder participation
	  - Classification of slums (upgrading/ redevelopment/ relocation)
	  - Linking slums with city infrastructure
	  - Prioritization of slums for upgrading
	  - Phasing of slum upgrading
	  - Street addressing
	
	• Including slum upgrading in municipal budget
	• Institutional capacity building
	• Institutional co-ordination mechanisms & governance
	• Communication strategy
		• Participatory mapping and enumeration
		• Participatory action planning
		• Implementation of streets and services (re-blocking/ redevelopment/ street widening)
		• Street addressing and tenure regularisation
		• Agreeing O&M responsibilities

UN-Habitat promotes the development and implementation of citywide slum upgrading programmes. At city scale, slum upgrading brings about tangible physical results in the form of streets, accessibility, infrastructure improvements, urban layout design and legalisation/ regularisation of land tenure. The point to be noted is that such programmes require a number of policy supports and city level actions in addition to participatory upgrading of individual slums. Figure 8 indicates the kind of interventions that may be required at different levels of decision making and implementation. The design and implementation of citywide slum upgrading programmes also call for an institutional and organisational management capacity capable of coordinating complex, multiple and multi-stakeholders activities and processes. These are often not in place in many parts of the word.

Due to the magnitude of a citywide slum upgrading program an incremental approach which takes into account the financial, logistical, planning and managerial capacity of city governments, local priorities for slum improvement and the peculiarities of a site and its population needs to be applied. Ideally such a program starts with the present capacity of local government and builds up gradually in the form of a multi-year programme that links up with budget cycles (Figure 9). Once the overall strategy and phasing are in place, parallel and interlinked actions are taken for developing supporting policy, developing capacity at city level, and implementing slum level projects, rather than following a sequential path, which may not be politically acceptable.

Citywide slum upgrading programmes can actually trigger urban transformation and impact the overall urban spatial structure of cities. However, experience shows that this has not been an easy task and most attempts are bogged down by institutional, regulatory and land tenure complexities. Only a handful of cities have managed to produce results as a consequence of strong political support. The street-led citywide slum upgrading approach outlined in this paper is an inclusive policy and a practical approach that can be instrumental in bringing about this change.

Figure 9: Incremental multi-year Citywide Slum Upgrading

	Settlement upgrading proposals
1	
2	City-wide infrastructure proposals
3	Land supply, relocation and new housing proposals
4	Capacity building, institutional development and planning and regulatory reforms
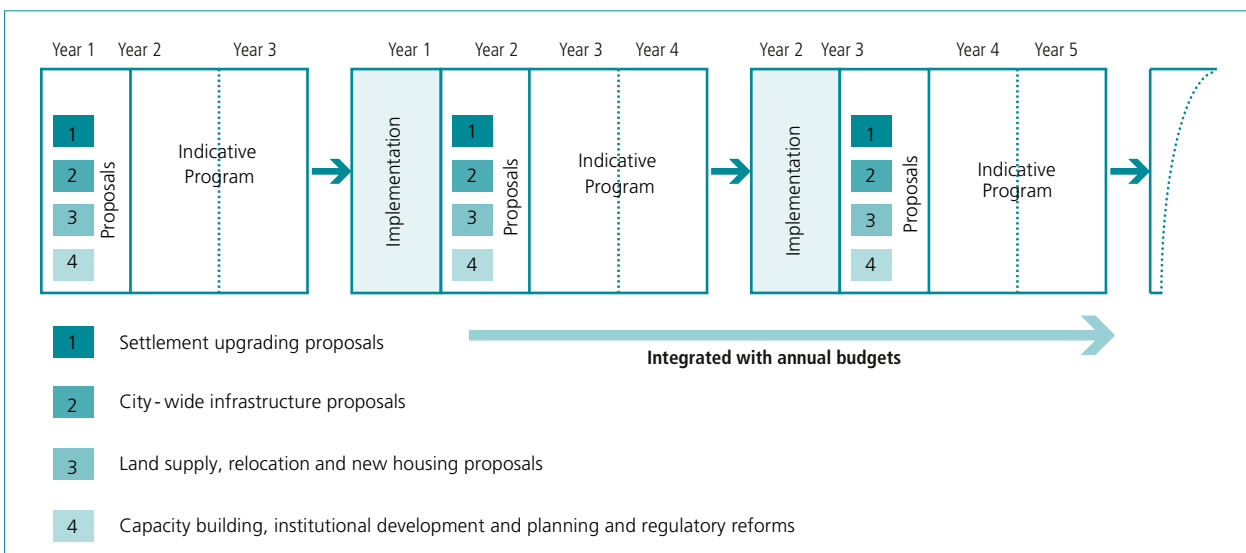
3. THE CONCEPT – INTRODUCING THE APPROACH OF STREET-LED CITYWIDE SLUM UPGRADING

UN-Habitat upholds that street-led citywide slum upgrading is a simple and straightforward approach that rationalises the layout of settlements and generates spatial urban patterns that essentially transform slums into neighbourhoods and connected economies through a process of physical integration with the larger urban area, where streets, and public space, act as the primary conduits for social and economic transformation that benefit the city as a whole.

The approach recognizes incremental development, engages and empowers participation, and lends itself to the alignment of local and national political will, all towards the physical, social and economic integration of these settlements aiming at the improvement of quality of urban life of people and the economic efficiency of cities. Thus it builds a business case for slum upgrading, which is very different from the usual welfare and hygiene orientation of previous initiatives.

The proposed strategy to improve the lives of slum dwellers – in response to the MDGs – is ingrained in the opening of streets as the forefront of urban regeneration and as primary pillars for a deep set of informal settlement regularisation strategies and area-based planning processes that are all part and parcel of a city development strategy. Streets are proposed as the starting point of settlement upgrading and the link for integration with the city and its development plan. The strategy can work at scale across all cities, being based on the common denominator of streets. It learns from the evolution of approaches applied so far and goes forward towards defining a strategic approach for urban transformation that takes advantage of streets.

The approach promotes better planning and urban restructuring of slums and informal settlements in order to improve mobility, accessibility and provision of basic services. The existing settlement morphology, particularly the street pattern and availability of open spaces determine the extent to which improvements are possible. The approach does not advocate ad-hoc infrastructure improvements that take the existing spatial and urban layout configuration of settlements for granted and leaves them intact. The configuration of slums and informal settlements usually reflects a haphazard land occupation. Simply providing basic infrastructure and laying down pipes for water supply, drainage and sewerage networks as well as public lighting without rationalising the urban spatial structure of these settlements has proven to be costly and counterproductive. In addition, not paying sufficient attention to increasing housing supply for the poor has led to the perpetuation of slums.

3.1 FUNCTION OF STREETS

UN-Habitat's strategy of street-led citywide slum upgrading is based on the pivotal role of streets in urban transformation and regeneration of slum settlements. Streets are vital entities in all human settlements[34]. They play a significant role in determining urban form more than any other element of cities[35]. There is a large volume of literature that conceptualizes the various identities and functions of the street[36]. The multiple functions of streets in urban life can be summarised as follows:

the street is a channel of movement, a communication space, a public space, a place of social and commercial encounter and exchange, a place to do business, a political space and also a symbolic and ceremonial space in the city. Streets are regarded as a public good, the space that is collectively used by residents but not appropriated individually by anyone.

Establishing a coherent network of roads and streets both in new extension areas and already urbanized areas constitutes a key challenge for city planning. A mix of approaches, comprised of laying new roads, road widening and traffic management, are deployed to meet planning objectives. The creation and upgrading of roads and of streets need to take into consideration various likely impacts of such actions, not only to respond to different functional requirements, but also to guide development and capture the value enhancement of surrounding properties[37]. This along with ensuring the continued maintenance of streets is a key challenge for urban management.

Streets are the starting point for a physical integration of slums into the formal and official systems of planning and urban management that govern a city. A street pattern and hierarchy are laid down by an area-based plan that results in a final urban settlement layout connected to the overall city plan. This provides a strong spatial frame to deal with the complexities of regularising tenure and retrofitting services as part of urban networks, the two key interventions of slum upgrading. The street is a vital element in the improvement of quality of life in slums, particularly in densely occupied settlements where the inadequacy of streets is the source of multiple problems faced by slum dwellers. There are no studies to quantify the impact that poor streets can have on a community, but it is well known that poor quality streets are the key indicators of neglected down market areas in cities[38].

Streets in slums have multiple functions, more than in other neighbourhoods. This is because in most slums streets are the only public space available. Streets in slums tend to be multi-layered entities instead of clearly zoned areas of use and types. They are host to multiple activities which co-exist and replace each other at different times of the day. They serve and provide the pathway for pipes, power lines, street lighting and drainage systems in upgrading projects. They are the settings for informal commerce such as hawking and vending as well as for economic activities like small manufacturing, repairs, garbage recycling. Cultural activities - processions, celebrations and performances - are all on streets. Children play and residents have informal interactions in streets. Where houses are small streets often serve as outdoor extensions of living space, being used for washing, cooking, socialising and sleeping. Thus boundaries between public and private space get blurred through use. Streets make a slum safe or unsafe. Any kind of regular civic activity on slum streets such as policing and garbage collection is perceived as recognition of the area. Street addressing has a high symbolic value for its implications of inclusion and citizenship and often results in household investment even without legal tenure[39]. Streets are instrumental for rescue and relief operations as slums are often affected by disasters such as fires, floods and landslides because of their precarious location, high density and combustible construction materials. Some of these events are likely to be exacerbated in the future with extreme weather conditions caused by climate change[40], underscoring the need to include disaster management while upgrading streets.

Slum upgrading programmes have invariably taken into consideration the use of streets for improving mobility, keeping the settlement clean and for laying service networks. These are what are often termed as necessary functions[41]. Experience shows that ultimately everyday practices of street life, people's aspiration for improved quality of life and the changed equation of the settlement with the city determine the character of streets. For instance, an impact assessment of DFID supported citywide slum improvement projects in three Indian cities found that street improvements not only led to improvement in quality of life as expected, but also generated a number of unintended positive impacts triggered by the new possibilities of assigning multiple functions and meanings to street space (Box 2).

Other studies show that some of the impacts can also produce negative values. A participatory impact assessment of the Kolkata Slum Improvement Project showed that street paving had encouraged through traffic in some streets, making them dangerous and noisy[42]. Research on the long term impact of upgrading in Indian cities shows that ad-hoc infrastructure improvement, that leaves intact the existing spontaneous, unplanned and haphazard street pattern of settlements is easy to implement but counterproductive in the long-term[43]. Simply providing basic infrastructure such as water, drainage, public lighting and street and their subsequent pavement without rationalising the urban structure of these settlements through an area-based plan and street pattern has proven to be ineffective and costly and should be discouraged.

Figure 10: Multiple uses of slum streets

Water vendor, Nairobi, Kenya. Photo: UN-Habitat

Public transport enters slum: Metro Manila, Philippines. Photo: B. Banerjee

Water connections: Metro Manila, Philippines Photo: B. Banerjee

Waste recycling: Mumbai, India. Photo: B. Banerjee

School for slum children: Mumbai, India. Photo: B. Banerjee

Informal meeting: Salvador, Brazil. Photo: B. Banerjee

Children playing: Narayangunj, Bangladesh. Photo: B. Banerjee

Household activities: Howra, India. Photo: B. Banerjee

Open air market: Kibera, Nairobi. Photo: UN-Habitat

Washing: Naraingunj, Bangladeh. Photo: B. Banerjee

Street vendor: Zambia. Photo: UN-Habitat

Food preparation: Liberia. Photo: William Ross

Planning and design of streets - including their layout, width, gradient, surface and alignment – need to build in the possibilities of enhancing multi-dimensional outcomes for slum dwellers and the city. This is seldom practiced at the scale at which it is required but recent examples of the Favela-Bairro Programme of Rio de Janeiro and Slum Upgrading Programme of Medellin confirm that given the political will, it is a practical strategy[44].

The street-led approach to citywide slum upgrading fully involves local residents and their grass roots organizations in a simple and practical participatory process to rationalize the urban structure of these settlements through an area based plan and street pattern. This captures the multiple functions of streets based on nuances of everyday practices of street life and peoples aspirations. At the same time, the importance of certain slums streets to improving mobility and other values of city life is reflected in a process of citywide prioritization of streets by multiple stakeholders.

3.2 HOW STREETS CAN FACILITATE CITYWIDE SLUM UPGRADING

For the street-led citywide slum upgrading approach outlined in this paper, streets should act as primary pillars for a deep set of informal settlement regularisation strategies. UN-Habitat upholds that street-led citywide slum upgrading produces urban layouts of settlements and generates spatial urban patterns that essentially reconnect slums - changed into neighbourhoods, barrios and districts through a process of physical integration with the larger urban area, where streets and public space act as the primary conduits for social and economic transformation that benefits the city as a whole.

In addition to mainstreaming the upgraded slum settlements in the urban fabric, the approach also has the potential to include poor and vulnerable groups who do not live in slums but depend on streets for their survival. These are street children, destitutes, new migrants and people who sleep in work places, especially in South and South-East Asian cities where most of the world's urban poor live.

UN-Habitat's strategy to improve the lives of slum dwellers – in response to the MDGs[45] – is ingrained in the opening of streets as the forefront of urban regeneration triggering social and economic development and, ultimately, enable overall improvements in housing, public services and in a settlement's further development and consolidation.

A streets-centred slum upgrading programme will prioritise the planning and implementation of a street layout in multiple settlements of a city. It must be clear from the outset, though, that UN-Habitat is not suggesting a one-size-fits-all solution but is highlighting the importance of the street as a public good, the trigger of social and economic development, and the locus of citizenship. It is a common strategy that embraces a multiplicity of contexts and empowers this variety with a well-connected forum to best manifest its collective potential.

A review of flagship citywide programmes and lessons learned from implementing other less well known programmes demonstrate that physical integration through roads, streets, infrastructure improvement and connectivity with official city planning is important but not enough to bring many necessary changes. A necessary part of a street-led citywide slum upgrading approach is the redefinition and adaption of standards and norms to match an existing settlement's layout and overall condition with that prescribed by a normative framework for the entire city.

The street-led approach is an implementation approach for citywide slum upgrading. It is embedded in its bigger cycle as seen in Figure 7.

Figure 11: Street patterns in slums

Kampung, Jakarta, Indonesia. Source: Kampung Improvement Project

Layout and land use in favela Ladeira dos Funcionarios, Rio de Janeiro. Source: Municipality of Rio de Janeiro

Areal view of Kibera slum in Nairobi, Kenya. Source: Marras Stefano
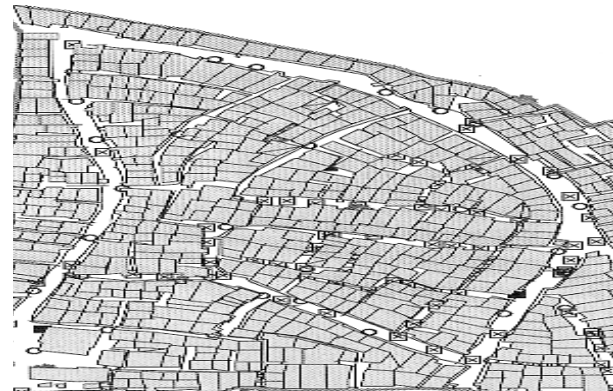
Zopadpatti, Pune, India. Source: Shelter Trust

Mathare, Nairobi, Kenya. Source: University of Nairobi

Informal layout and street patterns in Heliopolis, Sao Paulo. Source: Municipality of Sao Paulo

3.3 STREETS SUPPORT AN INCREMENTAL APPROACH

The implementation of the street-led strategy builds on the practical and symbolic role of streets as the key to linking up neighbours, businesses and economic activities situated adjacent to each other and sharing the common public space provided by the streets. This strategy is well-suited for phased and incremental development through strong participatory planning, rather than pursuing the complex implementation of a full-fledged upgrading and urban layout plan, as a single-phased approach. The incremental approach based on the prioritisation of streets will ensure that strategic choices are made and that the streets selected for improvement or implementation are actually the ones that are likely to generate the highest impact on poverty reduction in terms of the economy, accessibility, optimisation of land use and generation of wealth as a result of increase in property values. Acting simultaneously at slum and city level, the approach will ensure that in slum priorities are addressed and also ensure that city level concerns for connectivity and mobility are considered. Further, implementation targets can be set and gradually enhanced in keeping with the technical, managerial and financial capacity of local government.

3.4 STREETS AND PARTICIPATORY PLANNING USING ENUMERATION AND COMMUNITY MAPPING

Government interventions do and should focus on improving and managing what constitutes the public domain in neighbourhoods, such as streets, pathways, parks, public lighting, infrastructure networks such as drainage, water and sometimes waterborne sewerage and complementary residential services such as daycare centres, health care and education facilities, community development centres and sports facilities. It has been shown across the world that public investments generate complementary investments by individual households to improve housing conditions in their private domain and trigger economic development.

The experience of the past decades has also widely shown that participatory planning approaches are much more acceptable and successful in bringing about sustainable improvements than top-down approaches to public investments without consultations. This approach is especially important for slum upgrading as sensitive decisions on demolishing houses, reconstituting plot boundaries and relocating residents have often to be made. The informed judgment, agreement and acceptance of the community is therefore highly important.

The existing and to be upgraded street network provides a given structure of owners and tenants who already know each other and have common interest as they share the same space and its associations. Organising a neighborhood for a participatory intervention along these given structures is therefore highly efficient and promises success.

UN-Habitat advocates a reliable mapping and inventory of the physical configuration and spatial structure of slums prior to any slum upgrading intervention. This process should not be limited to settlement mapping using topographic maps, Google Earth ortho-maps, aerial photographs and satellite and remote sensing only. The involvement of residents, their grassroots organisations, NGO's and municipal planning departments

are considered *sine-qua-non* conditions for bringing legitimacy and accuracy to the final settlement map and existing land use. **Participatory enumerations recording individual housing units, their number and record, and a cadastre of the residents and their status, size, tenure condition, income, etc. are needed to help correctly determine and agree on the size and conditions of the population living in each single settlement**. Enumerations, also called "social mapping" and "community mapping" will result in a full settlement profile that must precede any plan to upgrade a settlement and open its streets.

Examples from Africa, Latin America and Asia show that community mapping, enumerations of buildings and execution of urban layout plans all play vital roles in defining the public and private domains. Enumerations ratify the locations where people live, and also help in establishing the rights and claims of individuals and households over the land they occupy. More and more NGO's and CBO's are using participatory enumerations to negotiate their position and demands with local governments. Some of these initiatives make effective use of the everyday simple digital technology of cell phones to map settlements and include information. For example the NGO Rede Jovem is deploying local young women armed with GPS-equipped mobile phones to map streets and landmarks in the favelas of Rio de Janerio. The Map Kibera project uses an open-source software programme, Open Street Map to allow a team of young people in Kibera slum of Nairobi to edit and add information as it is gathered on mobile phones. The mapped information is then free to use by anybody wanting to grasp what is actually happening in Kibera: residents, NGOs, private companies and government officials[46].

As participatory enumerations have become more established, local governments have begun to recognize their effectiveness in establishing baseline surveys and eligibility determination. The mutual benefits mean that this kind of cooperation is moving towards the norm. The newly launched national programme in India, Rajiv Awas Yojana (RAY) for example, makes mapping and participatory enumeration a mandatory requirement for planning citywide slum upgrading[47]. The process and stages for citywide slum upgrading differs from city to city but follow a common step-per-step process requiring proper planning and close monitoring. Once tenure arrangements are made clear by participatory enumeration, re-blocking and readjustment in plot boundaries can be implemented according to the site layout plan[48].

UN-Habitat has experience lending its support to promoting involvement and enumeration in relation to streets. UN-Habitat commissioned the Nairobi-based NGO Pamoja Trust to facilitate community based enumeration in Kisumu's slums as part of a citywide slum upgrading initiative under UN-Habitat and Cities Alliance's Cities Without Slums (CWS) initiative and the Kenyan Slum Upgrading Programme (KENSUP)[49]. In June 2011, UN-Habitat lent its full support to "Building Communities: Change by Design," an Architecture Sans Frontiers-UK and Pomoja Trust street-based exercise and workshop in participatory urbanism in Mashimoni, Mathare slum, Nairobi, Kenya. The project utilised a participatory design methodology that put slum residents at the centre of upgrading decisions. Streets and community spaces were an entry point from which residents were asked about their needs and aspirations for the area's physical elements. Across focus groups, including collective model making sessions, streets

and public space were the common ground that drew residents together and initiated the process of making decisions about slum upgrading.

In the initial stages of participatory planning, streets are identified, prioritised laid down as part of a slum upgrading plan that is discussed, amended and endorsed by residents and their grassroots organisations before the project is launched for execution. Such a plan draws on the documentation and settlement configuration resulting from participatory enumeration and social mapping. Very often, three-dimensional models and replicas (maquettes) of a settlement are made in order to support interaction with residents. This helps to visualize the plan of intervention and facilitate communication with residents[50], particularly those whose houses will be subject to demolition and relocation. Such a tool is efficient in demonstrating the alignment, widths and gradients of streets and pathways for infrastructure networks and pedestrian routes. The implications to the resident community of different possible alternatives starting with the least invasive to the most radical are discussed in terms of disaster management, convenience, level of services, future development prospects and demolitions and relocation.

Following this step, basic infrastructure networks are laid down and executed. Subsequently public spaces, squares, and other amenities as part of the overall upgrading plan will be executed incrementally. These actions lead to greater security of tenure, which may finally be formalised through regularisation of land tenure. Parallel to this local economic development activities and housing improvement will find its way. The process is incremental and subject to flexibility and adaptation which is intrinsic when planning and implementing public works in an existing human settlement.

In this approach, boundaries of public and private domains are clearly outlined and agreed between the community and the public institution, including areas for circulation, leisure, vehicular and pedestrian accessibility and for the execution of basic infrastructure networks such as water supply, electricity, drainage, sewerage and other amenities. As mentioned earlier, slum upgrading necessarily entails some demolition and resident resettlement, particularly in densely occupied slums.

The work agenda proposed by UN-Habitat to improve the living conditions in slums and informal settlements advocates residents' participation and follows an incremental path and a logic sequence of steps as described in Figure 10.

3.5 STREET CONSTRUCTION PROVIDES OPPORTUNITIES FOR COMMUNITY INVOLVEMENT

Street upgrading provides a great opportunity for the community to become involved not only in the definition of the street hierarchy, layout and material but also in the construction itself. The active involvement of community groups in the construction of streets, drains and other infrastructure invariably results in better quality as they can directly monitor the quality of the street construction and report any shortcomings, good value for money and willingness to maintain the infrastructure. Some successful examples are: community contracting for street paving and drains to women's CBOs and quality monitoring of conventional contracts by community groups in Andhra Pradesh Urban Services for the Poor, India; road and sewer

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Box 3: Shack/Slum Dwellers International (SDI) and slum enumerations

SDI is a global network of the urban poor across 34 countries in Asia, Africa and Latin America. SDI uses grassroots enumeration as a means by which not only the data is gathered to allow for local planning, but also the process by which consensus is built and the inclusion of all residents is negotiated. Enumeration is a means to federate and organise communities and involve them in large scale slum upgrading projects. This approach was developed by the SDI affiliated Indian NGO SPARC through its extensive work with pavement dwellers in Mumbai since the 1980s. The approach has since been promoted through SDI affiliates in several other countries.

Grassroots enumeration plays an important role in creating visibility to policy-makers, in improving organised demand-making and in forming the basis for partnerships with relevant government agencies. Where relocations are imminent, enumeration is considered a vehicle for consensus-building within the community around the process of relocation. In a city like Mumbai, with its high density slums, the process of enumeration is entirely street-based. Streets are also important for other actions that follow: holding toilet and housing design exhibitions, organizing street-based savings groups and holding meetings with civic authorities. In some African cities, where slum streets were undefined, enumeration and house numbering have generated street profiles by distinguishing between private and public domains.

Source: SPARC, 1985; GLTN, 2008; Photos Banerjee

Enumeration of pavement dwellers in Mumbai

Agreeing on relocation to different sites
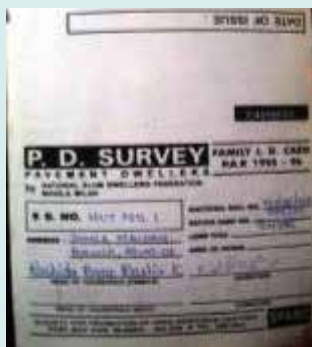
Family I-Card

Source: MASHAL , Pune

construction financing, management and maintenance by the community in Orangi Pilot Project, Pakistan and involvement of community groups for street demarcation in Lusaka, Zambia and Tirana, Albania[51]. Often this is rewarded with small cash payments which help the community to raise their income for a certain period of time where they might have to take in some shortcomings in living condition or business due to the construction. Road construction contracts have created employment for 62,000 unskilled workers for 90 days in the Neighborhood Upgrading and Shelter Sector Project of Indonesia[52]. Some projects also attached a labor skill component where community members are specifically trained to professionally undergo the task and then can use their training and experience to offer their services on the labor market. This should be encouraged as contribution towards improved income possibilities and community empowerment to further strengthem communities.

3.6 STREETS FACILITATE PHYSICAL INTEGRATION OF SLUMS IN THE CITY

The integration of slums and informal settlements into the formal city has become paramount in contemporary slum upgrading practices. Streets play a pivotal role in the physical integration, connectivity and spatial inclusion of slums into the city.

The pattern of streets within the neighborhood, their relation to the adjacent neighborhoods and the overall city street flow is crucial. The streets have to be integrated in the overall traffic flow to allow exchange of people and goods going out of the slum but more importantly entering the slum. In addition to the pattern and connection the street condition/surface sends important signals to the city community to enter or avoid areas. Therefore just quality connections can trigger exchange and trigger especially economic development.

Apart from increased connectivity street-led slum upgrading also allows to determine the future spatial configuration of

Figure 12: The Street-led slum upgrading approach in a nutshell
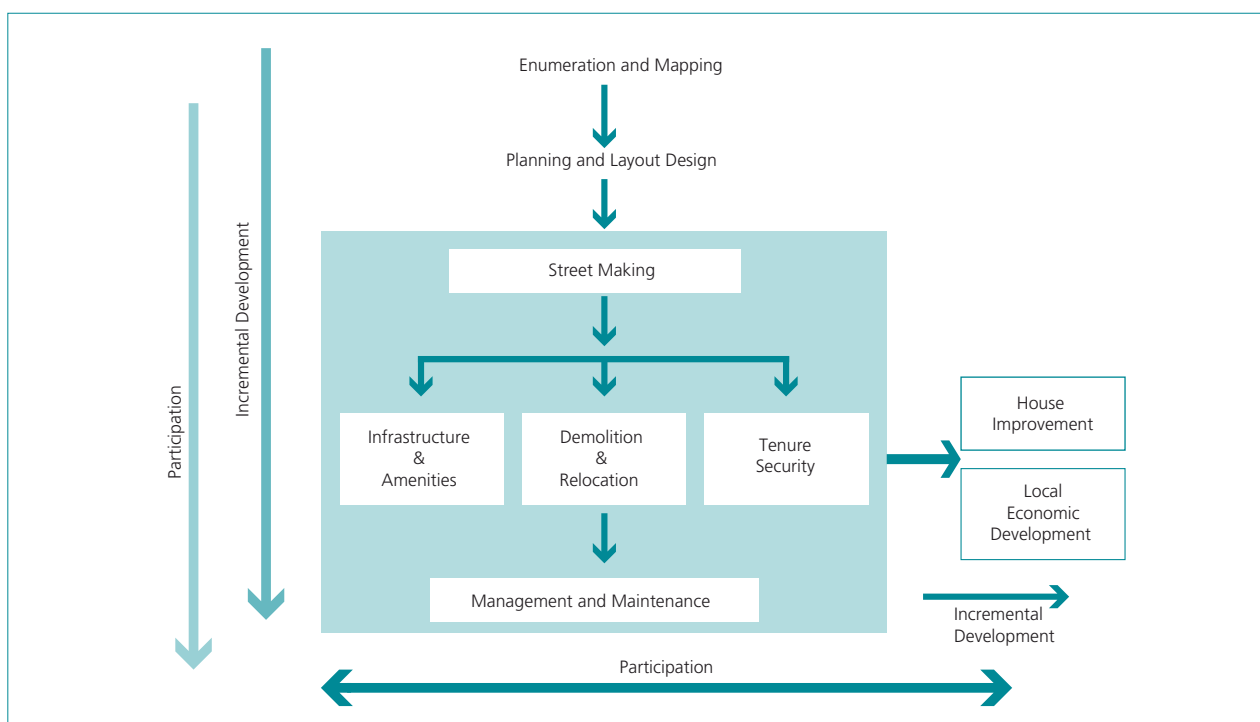
a settlement and defines the pattern and hierarchy of streets that will guide the overall settlement improvement process. Neighborhoods can also be redefined reducing the amount of traffic to allow other functions like walking, biking, economic activities to gain more space. Therefore the reorganisation of the street pattern under the guidance of an area-based plan can support the individual needs of a neighborhood and adjust it to their needs.

But streets just provide the basis for a full physical integration into the urban fabric, while the integration with public utility services has to follow and often poses another challenge. Problematic post-upgrading situations that are costly and counterproductive for scarce municipal budgets are invariably seen. Slums that were previously neglected by public service providers (water, sanitation, garbage collection, drainage, etc) do not always go through change in behavior after the settlement has been upgraded. This may threaten the success of a street-based slum upgrading strategy affecting the economic prosperity in the area. It is important to ensure that a settlement incrementally integrates itself via connectivity to the city's formal planning and legal system and becomes subject to all rights and obligations of citizens and the state alike.

3.7 STREET ADDRESSING IS AN INCLUSIVE STRATEGY

Another element of the street-centred approach advocated by UN-Habitat is the creation of street addresses that validate the location and the existence of slum dwellers. As outlined previously in this working paper, an address brings the symbolic attainment of citizenship rights and inclusion in the city. This transformation helps slum residents finally obtain the official recognition of their residential areas that a street name and address brings with it. The value of this method is that it can be applied to all kinds of cities: there is no such thing as a city without streets and addresses with no name and number.

Street addressing initiatives in slums are commonly the first step towards legalisation. However, street addressing may also not be easy to implement in practice because of the fear of authorities that street addressing is seen as pretext for the de facto regularisation of illegal neighbourhoods; the street layout is often indistinct or even nonexistent; and street addressing in informal neighborhoods is not a priority for the city authority. This political position requires a change simply for the benefits it brings to the large number of households because of their informal housing situation as well as benefits of their inclusion for the city[53]. The case of extending street addressing to favelas in Rio de Janeiro stands out for its popularity and practical and symbolic impact[54]. This has actually been a demand from the favelas residents movements in the city.

It goes without saying that street addressing alone will not significantly change living conditions, but it may help these settlements to better integrate into the city by strengthening their place in the larger community. Street addressing can thus lead to a kind of collective regularisation of the slum which, even if limited in scope, often bears fruit much sooner than difficult and slow-moving land tenure regularisation projects. This is borne out by the experience of African cities, some of which have implemented street addressing in collaboration with water and electricity companies. Street addresses provide the evidence that the slum population permanently resides in the neighborhood and thus forms a stepping stone for them to move from their precarious and unrecognized status to occupancy right[55].

Street addressing in slums can be a component of an upgrading program or it can be integrated into a citywide street addressing project. Whatever the circumstances, street addressing should complement other upgrading actions, thereby helping the neighborhood to take its place in the larger community. It should also form part of the participatory process in which residents name their neighbourhood streets and participate in verification of information, linking it to enumeration. If street addressing proves difficult to implement, it may be limited initially to the simple installation of street signs on upgraded streets and completed incrementally.

The other value of street addressing is that it produces urban information step by step: mapping the city, codifying streets, conducting census surveys, creating a simple computer system and developing applied management tools and producing simply generated information on the cartography of the city and location of amenities, workplaces, homes and activities[56]. Thus street addressing can serve as a monitoring tool when it accompanies the (informal) extension of the city and densification of existing areas, leading to better possibilities for their upgrading and integration with the city. In addition is helps to orientate in a neighbourhood for residents but especially for external people and utility companies.

The World Bank has been promoting the methodology of street addressing in 52 cities in 15 countries mostly in Africa with a great deal of success. It shifts the emphasis from plot level demarcation/registration/titling to occupancy units at the street level. It also shifts from property rights to occupancy status. Altogether making it possible to generate a city map as well as an index of streets which connects to a wide range of municipal services such solid waste, road maintenance, mail, fire/ambulances, property taxes, etc [57].

3.8 STREETS ASSIST IN ACHIEVING LAND REGULARISATION AND SECURITY OF TENURE

Full regularisation of informal settlements is rarely accomplished since conventional land and property registration is complex, time-consuming and costly for the inhabitants. Despite the fact that the majority of slum upgrading programmes and projects aim at the legalisation and formalisation of land and property rights in favor of residents, they rarely meet this goal. Often, when it happens, it takes years for this to be accomplished resulting in various areas of the city remaining outside the legal system of property registration with residents not taking advantage of possible gains derived from documented rights. This adversely affects the dynamics of housing and property markets and may prevent residents to invest their private savings into housing. However, de-facto recognition via street-making seems to trigger private investment into housing improvement. At the same time, an incremental policy towards infrastructure provision works better for both residents and the city budget.

The opening of streets and their subsequent pavement in line with an urban layout plan defines the future urban configuration of a settlement. It actually lays down the foundation for future legalisation and regularisation of land tenure, which are key for the transformation of slums and informal settlements into official neighbourhoods of the city. Furthermore, such a street-led slum upgrading approach intrinsically creates a planned framework for incremental development through which the settlements and local practices regarding land use and building will gradually adapt to those governing city planning and management. This will increase compliance, future legalisation, formalisation and security of tenure of the inhabitants[58]. In that respect, street-making as part of an area-base plan embedded as common practice into slum upgrading will assist in the formalisation of neighourhoods and the determination of rights and obligations in the city.

The stated approach to slum upgrading supported by UN-Habitat includes an incremental approach to land regularisation that assures the rights of individuals, groups of individuals and households. As such, streets may become pillars for new forms of collective ownership, which allow lower risk access to loans (risk spreading) while protecting against rapid sale of newly privatized land (community approval requirements). Examples include Community Mortgage Program (CMP), Manila and Bureau de Projet d'Assistance aux Collectivites pour l'Habitat Social (BAHSO), Senegal. The provision for demarcating Special Social Interest Zones (ZEIS) in Brazilian cities, as part of the City Statute provides the opportunity for favelas to be regularised, provides with services and developed according to norms and standards appropriate for each area and a plan agreed with the community. Individual property rights eventually follow re-blocking but simply being part of a ZEIS ensures a high degree of tenure securiy[59].

The participatory enumeration that initiates the slum upgrading approach lays down the elements to ensure these rights and paves the way for the issuance of land rights certificates, occupancy deeds, land lease rights and other forms of recognition that will lead to full property rights. This is a win-win situation for both residents and the municipal government and the resulted map containing all existing structures and buildings in a settlement transform itself into a platform for negotiating rights and obligations. For residents it signifies the achievement of the demarcation of their place in the city and of their rights-to-be-claimed and necessary step to secure their investment in housing improvements and property value enhancement. For municipalities and local authorities in charge of urban management, the regularisation of land tenure and delineating clear boundaries between private and public domains are important steps towards the establishment of a physical cadastre – the first base map of the settlement – that may serve as a basis for capturing property tax and user's tariffs on public infrastructure provisions, such as water, sewerage, public lighting, drainage, garbage collection, public safety and all other services inevitably linked to the opening of streets and a settlement's urban layout[60]. One should bear in mind that this is the first step of an incremental development process that initiates the citywide street-led slum upgrading approach that is advocated in this working paper. The Shack Dwellers International – SDI and the Asian Coalition of Housing Rights – ACHR are two prominent international organizations promoting enumeration as starting point of the slum upgrading process or as a tool to negotiate conditions and processes of relocation of slum dwellers from risk prone areas and from land being claimed by their owners. The experience shows that participatory enumeration goes even beyond the delineation of boundaries and buildings. It transforms itself into an empowerment tool that mobilizes the social and economic capital of slums. The approach has been analysed by UN-Habitat in a study conducted by the Global Land Tool Network[61].

'Incrementalism' critically allows policy to recognize various stages of secure tenure without implementing the formal and absolute condition of land titling with regular payments[62]. The gradual and attentive implementation of primary, secondary, and tertiary street networks, while respecting to certain degree

Figure 13: Street making and property re-blocking as part of ZEIS

Street Making and Plot Demarcation in ZEIS Rosa Selvagem, Recife, Source: Servico Justiça e Paz, 2005

the existing housing patterns and access points, directly lends itself to a phased approach to tenure security, and eventually ownership. As such, a streets-focused policy follows closely in line with the notion of a "continuum of tenure types/land rights," from perceived tenure, to customary rights, occupancy, anti-eviction movements, adverse possession, group tenure, leases, and registered freehold[63]. The recognition of a spectrum of conditions has been articulated by UN-Habitat's Global Land Tool Network as a normative approach to grapple with highly complex and multi-faceted relationships between land and informality. This directly applies to the implementation of a complete street network. By approaching this "continuum" through the practical and pragmatic tool of streets, which can be deliberated with equal credibility across decision-making scales, aspects of finance, cost-recovery, financial sustainability, post-upgrading management and maintenance of public domain can eventually be sufficiently addressed.

3.9 THE HARD PART: STREET-MAKING ALSO REQUIRES DEMOLITION AND RESETTLEMENT

UN-Habitat proposes the preparation of an area based plan, with the participation of local residents, defining a spatial structure for the settlement. This urban layout is based on the multiple functions of streets and open spaces, fulfills the requirements of mobility, accessibility, public safety and access to basic infrastructure, and enables future house improvements. Such a process of planned upgrading would, to a lesser or greater extent, require opening new streets, widening existing streets and carving out public open spaces. It is recognized that the opening of streets is central to boosting the economy of an area and integrating it into city urban management systems. The area-based plan that materialises a better urban configuration and spatial structure for the settlement, inexorably entails demolitions and resettlement. Such a plan is *sine-qua-non* condition for the future development of the slums and their transformation into neighborhoods like any other in the city.

For touching the sensitive issue of demolitions and relocation the participatory approach is most appropriate. If the community realizes the need of relocation the risk of having resistance is much less. Here the community should be put in the driving seat to identify what is feasible for demolition in exchange for better connectivity and potential development and integration into the city systems.

For a maximum impact with minimum disruption, the supply of serviced land within or near settlements is critical. The proximity of the new location is vital to prevent adverse impacts on social networks and livelihoods of residents. These networks are part of the social capital of slums and are therefore considered to be an integral part of any slum upgrading strategy. It stands to reason that land must be made available when designing a slum upgrading intervention. Different forms of compensations and swap of locations in exchange for better and secure housing should be put on the table while designing and approving the area-based plan with its street layout pattern. In the Parque Royal slum of Rio de Janeiro resettlement to apartments built by the municipality within the boundaries

of the settlement was acceptable to affected families (refer case in Annex 1) . Whenever land is not available within or nearby the settlements and all options for vertical growth and densifications have been exhausted, the options of sites & services at adequate locations should be brought to the planning table. Combining slum upgrading with sites and services projects has demonstrated the importance of providing affordable plots for resettlement purposes. The World Bank has supported 278 such projects, providing over US\$16 billion in housing-related assistance in 90 countries[64].

The Inter-American Development Bank (IDB) has provided financial assistance to 17 programmes related to upgrading in Latin America and the Caribbean between the mid-1980s and 2002, with investment totaling approximately US\$2.6 billion.The question of the limit of households that may be resettled has come up time and again during the last thirty years of IDB's involvement with slum upgrading projects. Experience has shown that the amount of relocation is context specific and has varied between 5 and 30 percent. It is more important to have targeted rather than fixed limits on relocations and to guarantee relocations that do not overly disturb local livelihoods to take advantage of the three main strengths in upgrading policies: "a) as components of strategies to fight poverty; b) as urban development instruments; and c) as important components of housing policies."[65]

With proper social coordination of slum upgrading, implementation of street improvements, supported by the right to fair resettlement advocated by international covenants can become grounds for new forms of cooperation that may even hold non-compliant, or even negligent, national and metropolitan governments accountable to the right to adequate housing for citizens. In the Indian city of Mumbai, the NGO SPARC reached out to the World Bank to support proper relocation of residents of railway side slums who had to be displaced by infrastructure improvements of a Bank financed project[66]. This cooperation, or scale-jump, between the local grassroots and global international development resulted in the World Bank making funding and technical cooperation available for a government urban infrastructure scheme conditional on fair resettlement of affected residents[67].

Another issue that needs to be considered is that opening and improvement of streets may generate market displacement and demolition and eviction by powerful groups active in slums. This needs to be placed before the community while planning upgrading and methods developed to deal with such forces.

3.10 CONTINUING AND SUSTAINING THE BENEFITS OF IMPROVEMENTS

Physical and spatial integration through streets and an area-based layout plan is not enough to secure proper maintenance, management, and repairs of streets, public spaces, squares, parks and leisure areas that have been introduced as part of the slum upgrading plan. The post-upgrading plan must be clearly drawn up agreeing on responsibilities of service providers and the local community and building their capacity to carry out

their responsibilities. Institutional financial reforms are often required to ensure priority to operation and maintenance and enable coordinated action regarding the streetscape in upgraded slums, including repair and maintenance of streets and drains, street lighting, solid waste management, maintenance and cleaning of open areas. In recent Indian participatory upgrading and renewal programmes, municipal reforms go hand in hand with settlement upgrading and involve actions such as budgeting for operation and maintenance of services, dedicated staff for maintenance, bringing upgraded slums in the tax net, setting up citizens' service centres and monitoring by CBOs [68].

The participation by residents during the various stages of specific programs and upgrading interventions in their settlements is also needed to sensitise local residents of their obligations (as much as their rights) and their commitment to manage the future of their residential areas, ensuring that public investments in their residential area are long lasting and maintained as in richer parts of the city. Addressing these two elements of the post-upgrading phase is critical for this approach to deliver the desired economic impact and urban transformation. Experiences in the past demonstrate that the neglecting this dimension results in public investments to be wasted by lack of maintenance and management of public goods.

The housing improvement process during the post-upgrading phase is a private matter that depends on the will, resources and ability of individuals and households to undertake such an endeavour. However, government support and enabling policies could be a great of help if different forms of assistance are designed to promote housing improvement through micro-loans, guaranteed micro-credits, building materials loans and on-site technical assistance. This will boost urban regeneration and support the proposed urban transformation. For example, in Rio de Janeiro the municipal government established local municipal offices called POUSO-Post for Social and Urbanistic Orientation in the settlements that were upgraded and improved by the 'Favela-Bairro Citywide Slum Upgrading Programme'. At the POUSO, residents get involved in decisions on street naming and land use planning. It is here where they get technical assistance for housing improvements, guidance in requests for building permits, and access to home improvement credits guaranteed by the municipality provided that they follow the specific land-use ordinances designed for the post-upgrading phase and complied with the minimum standards for building construction. More than 50 of these POUSOs were established with mixed levels of success due to inadequate resources, resistance of the municipal technical cadre to be posted in favelas, inadequate supervision and residents' attitude in favour of urbanistic and building freedom.

The design and enforcement of appropriate building regulations as part of the slum upgrading and urban transformation process are required so that the opportunities created by the opening of streets, perceived or de-facto or de jure tenure security and the stimulus to on-plot investment do not lead to indiscriminate

building, chaotic land occupation and worsened living conditions. Horizontal and vertical expansion and rebuilding are common features. It is often the case that additional space are created for renting, shops, workshops and growing members of the family. This invariably happens without respect for norms and regulations. In most cases slums would not be able to comply with prevailing regulations anyway, so even after regularisation, the building process continues to be informal [69]. When not guided by an area-based plan and without enforcement capacity, over time the settlement tends to evolve into a densely built and occupied neighbourhood with mixed use and inadequate street space to support the more intensive use of plots. The streets function as stimulators of congestion instead of pillars of urban transformation. It is important to design appropriate street-specific regulations in consultation with local inhabitants to agree on the limits to development of private property in keeping with street capacity. Accessibility, building density and the width and carrying capacity of streets and public spaces are important variables to be considered as part of the street-led citywide slum upgrading programme.

The rules of engagement in the post-upgrading phase should be clearly spelled out from the start of a programme and capacities to enforce them should be put in place during the implementation phase. In settlements where tenants and absentee owners are common features, a policy towards slum upgrading should be designed in such a way that it does not penalise tenants either with sizeable increases in rent or with automatic eviction by landlords who fear losing their rights and the benefits generated by slum upgrading.

' Street-led citywide slum upgrading is a practical and straightforward approach that gradually integrates slum settlements with the urban fabric of cities. It rationalises layouts and generates spatial urban patterns that transform slums into neighbourhoods. The approach builds on streets not only as natural conduits for retrofitting services and facilitating the movement of people, goods and vehicles, but as a common good, the public domain where social and economic activities are articulated, reinforced and facilitated. Streets become tools for social, economic, juridical and spatial integration of slums with the city.

B

PART B

THE PRACTICAL FRAMEWORK

4. KEY LESSONS FROM INTERNATIONAL EXPERIENCE

International experience with slum upgrading policies shows that in spite of general agreement on the approach, they also tend to face many obstacles and resistance. Overall, however, there is a wide range of examples and post-upgrading studies that cite continued success in terms of quality of life and poverty indicators. UN-Habitat's strategy of street-led citywide upgrading takes into account lessons from the vast body of international experience with slum upgrading. These lessons are captured from studies and evaluations of projects and programmes as well as by examining the role of streets in 15 specific examples from 12 different countries across the world implemented in the last four decades (Annex 1).

LESSONS FROM PROGRAMME AND PROJECT EVALUATIONS

The longstanding experience of the IDB in Latin America during the last 30 years and its involvement in the financing of more than 20 upgrading programs in different cities in the region indicate immediate results reflected in construction and amelioration in self-built housing, better health indicators and reduced vulnerability. The IDB experience directly emphasises that housing conditions and access to workplaces was immediately improved due to investment in streets and wider physical integration of these settlements, having wide implications for the long term project success. Also, the IDB expressly notes that "the result of [a] coordination of activities is that each action amplifies the effects of the others," citing how improved potable water and sewerage systems, trash collection, and environmental education all have a much more significant impact when executed in conjunction with street works[70]. The street-led citywide slum upgrading approach considers that street development has the unique ability to be coordinated with the broadest set of upgrading strategies in physical, economic, social and environmental terms if fully integrated into the urban planning process of the city and detailed planning at the neighbourhood level, and if done in a participatory manner.

Experience from the last three decades from the Latin America and Caribbean region draw lessons that have global significance: "*settlement upgrading interventions need to be integrated – covering the physical, social and economic problems of neighbourhoods – and designed and implemented with the full involvement of the community*". In the cities where they have been implemented, most importantly, these programs build citizenship[71].

In another post-occupancy study of eleven upgrading cases from around the world completed in the mid-1980s, several observations were made that apply across the spectrum of contexts and are still valid today[72]. It is overwhelmingly consistent that government investment in urban services delivered through streets triggers private investment in home improvement by residents' mobilizing of their own resources. The *de facto* tenure security resulting from the same infrastructure improvements simultaneously contributes to a significant increase in property value. Although security of tenure and regularisation of property rights were an intrinsic objective of most projects analysed, very few actually achieved this goal, a finding that highlights the intricate, time-consuming and costly legal dimensions to slum upgrading. At the community level, upgrading consistently created additional jobs and income, many of which were established around the maintenance of streets, infrastructure and associated new public facilities. Finally, several cases demonstrate that the expected gentrification that might come with increased property values, resulting from an immediate property sell-off in favour of a new informal settlement and extra liquidity, was the small exception rather than the rule (1980s upgrading projects in Calcutta and Jakarta, for example).

A global evaluation of policy responses to informal settlements and slums carried out during the 1990s for the UN -Habitat-World Bank Urban Management Programme revealed four major approaches as follows: (1) legalisation of tenure focusing on land-use and property regularisation; (2) settlement upgrading meant to achieve a rational urban layout pattern and optimal land use process which included re-blocking and densification; (3) overly ambitious settlement upgrading aimed at infrastructure provision and making up for years of neglect and poor services provision; and (4) a preventive approach that encompasses an incremental provision of primary infrastructure combined with recognition and incorporation of these settlements into formal systems, accepting a gradual compliance with norms and laws and the progressive formalisation of properties and urban restructuring[73]. These case studies demonstrate the suitability of a gradual development and servicing approach to slum upgrading but also underscore the failure of an overly-ambitious full-fledged settlement upgrading approach that intended to meet high standards of infrastructure provision, planning and legalisation of tenure via individual title. The cases also revealed that street-pavement connected to minimum standards of infrastructure and service provision proved successful. The street-led approach to citywide slum upgrading advocates phased development, incrementally executed and focusing strategically on a few streets at first to deliver higher impacts and trigger subsequent development.

Successful slum upgrading reveals three simultaneous processes over time:

(1) the slum dweller becomes a citizen;

(2) the shack becomes a house;

(3) the slum settlement becomes a neighbourhood [74].

This path was highlighted during an international policy dialogue on slum upgrading hosted by city of São Paulo involving six slum upgrading experiences from different megacities in Asia, Africa and Latin America[75]. The dialogue revealed some issues:

–   The lack of affordable housing solutions and insufficient supply of land to meet housing demand were highlighted as the greatest challenge by nearly all cities.

–   In some cities slums are relatively concentrated in some areas while in others they are dispersed over a wide territory. This influences approaches and solutions.

–   Most cities report the existence of multiple shelter deprivations and a structural problem of unemployment.

–   Institutional and human resource capacities are considered essential for carrying out successful slum upgrading.

– The availability of data and information to support planning decisions was highlighted as one of the strongest element of São Paulo's citywide slum upgrading policy and a reason for its success and scope.

Other elements underscored by participating cities include political commitment and the allocation of financial resources. **This reinforces the argument that citywide slum upgrading and prevention strategies must be an integral part of one single urban policy**.

Examples of slum upgrading

The selection of the 16 examples is not exhaustive but serves to justify the use of streets as the pillars of urban transformation and illustrate different practical issues to be taken into consideration while implementing the approach. It is expected that in the future focused research on this aspect will better inform policy and practice.

> ' *A citywide scale approach is fundamental to enhancing the economic outcome generated by the opening of prioritised and multiple streets in different slum settlements, increasing connectivity, circulation and mobility but also providing the opportunity for the ultimate physical integration of slums and informal settlements into their surrounding neighbourhood.*

Examples of slum upgrading projects/programmes by region and country (refer Annex -1)
North Africa
1. Egypt: Participatory Development Programme, Boulaq al Dakrour, Giza (Greater Cairo)
Sub-Saharan Africa
2. Guinea-Bissau: PMBB-Neighborhood Improvement Programme, Bissau
3. Zambia: Settlement Upgrading and Sites & Service Project, Lusaka
4. Tanzania: Community Infrastructure Upgrading Programme (CIUP) and Participatory citywide upgrading of unplanned and poorly serviced settlements, Dar Es Salaam
South Asia
5. Pakistan: Orangi Pilot Project, (OPP) Karachi
6. Pakistan: Katchi Abadi Regularisation Programme, Ghousia Colony, Karachi
7. India: Dharavi Redevelopment Project (alternate strategy), Mumbai
8. India: Citywide Slum Upgrading Project (CSUP), Agra
9. India: Andhra Pradesh Urban Services for the Poor (APUSP)
10. India: Slum Networking Project(SNP), Ahmedabad and other cities in India
South-East Asia
11. Indonesia: Kampung Improvement Programme (KIP)
12. Thailand: Baan Mankong, 200 cities programme
Latin America
13. Brazil: Favela-Barrio Programme, Favela Jacarezinho, Rio de Janeiro,
14. Brazil: Favela-Bairro Programme, Parque Royal, Rio de Janeiro,
15. Colombia: Integrated Programme for the Improvement of Deteriorated Neighbourhoods, (PRIMED)Medellin
Europe
16. Albania: Urban Land Management Programme of CoPLAN, Kamza Municipality, Tirana

Based on key lessons from evaluations and examples, UN-Habitat underscores that a core set of common upgrading experiences support a streets based strategy if they are integrated into the development process itself.

4.1 THERE ARE MANY WAYS TO INCLUDE AND INTEGRATE SLUMS WITH THE CITY THROUGH STREETS

The street-led approach to citywide slum upgrading intends to create a grid of settlement interventions that gradually produces a more coherent urban fabric at the scale of the city towards boosting economic and social development for all. Experience shows that this can be achieved incrementally through several strategic interventions. The Favela-Bairro programme in Rio de Janeiro, Brazil, uses a number of innovative and practical tools to convert favelas into city neighbourhoods. The naming and numbering of streets has allowed the extension of city mapping into favelas for the first time and gives these dwellings a location and identity in the city. Internal spaces of dense settlements have been re-organised, more streets opened up and accessibility improved. Opening streets has allowed policing and extension of city services into the favelas. Favelas have opened up to the city through waterfront development and sports facilities. In Medellin, Colombia, new streets and public spaces in upgraded slums on steep slopes are linked with the city transport network through an innovative system of cable cars, improving accessibility and opportunities for income generation. The example of Agra, India, shows how the presence of historic monuments in a slum was used to both open up streets for slum dwellers and create a heritage walk for tourists, also resulting in economic opportunities for residents. Widening of peripheral roads in Ghousia Colony in Karachi, Pakistan, benefited the residents in the form of better access, higher property values and prospects of commercial use of plots and provided a clear thoroughfare for city traffic. The Slum Networking approach implemented in 4 Indian cities takes advantage of the contiguity of slums along drains and streets to form a net, which links up with city networks.

4.2 TENURE SECURITY: THE GOOD IS OFTEN BETTER THAN THE PERFECT

International experience shows that tenure security is brought about through several means in slum upgrading programmes, of which property titling is just one of the options. The Favela-Bairro Programme is noteworthy as an example of slum upgrading without full land tenure legalisation and for its use of concession of right to use but not full ownership of land in order to allow this program to take place. This placed greater emphasis on infrastructural and living condition improvement rather than legalisation of land tenure. As a result, the implementation of the programme has had the effect of increasing the security of tenure of favela residents[76]. One could highlight here the importance of perceived security of tenure and perceived protection from forced eviction. Actually, the Favela-Bairro programme focused its investments on the public domain e.g. streets, pavement, drainage, water, sanitation, public lighting, public squares and public spaces, and playgrounds for children, assuming that the private housing/plot domain would be taken care by the individual households.

The Ghousia Colony study in Karachi, Pakistan, suggests that settlement regularisation is considered sufficient to realize an adequate level tenure security, which does not expose them to additional unnecessary expenditure. It was found that a significant percentage of households had not completed the process of registering their lease titles even twenty years after regularisation. The Kampung Improvement Programme of Indonesia, the largest and longest running slum upgrading programme stresses on the improvement of quality of life through infrastructure improvement. Inclusion of a settlement in the KIP is considered as a sufficient condition to increase the perceived security of tenure for household to invest on the plot. Similarly in the slum networking programme in Ahmedabad, India a 10-yaer guarantee of occupancy was sufficient for slum dwellers to invest their share of money for upgrading. An alternative for the redevelopment of Dharavi slum in Mumbai, India, proposes the incremental development of a clear hierarchy of streets and public open spaces and facilities in keeping with development control regulations while respecting the existing settlement pattern. Security of tenure is expected to follow the redevelopment options selected by residents of different neighbourhoods within the overall density norms.

These examples show that in order to ensure continuity of the improvement process, decision makers must move beyond a narrow concern with legality and illegality. The upgrading of slums should comprise a gradation of strategies that contribute to legal regulatory frameworks that are more appropriate to informal settlements[77] nurturing an incremental improvement and development process closely linked with improvements in the legal and institutional status of the settlements.

It has been shown that legalising plots prior to physical upgrading, can complicate the process of widening streets and infrastructure[78]. Dealing with the legal dimension without the area-based plans and definition of the streets pattern is counterproductive. Rushing processes to secure tenure will hurdle settlement planning, street building and re-blocking by unnecessary claims and demands for compensation. The streets-based citywide slum upgrading strategy must become the grounds for tenure regularisation, legalisation and social inclusion embedded in a social pact for development at the neighbourhood level, removing all chances for social exclusion, recognising rights where they already exist, as opposed to the much more costly opposite scenario. Thus planning, secure tenure (even if only perceived/the facto security) and peoples' participation are the three aspects that need to go together as the basis for effective upgrading. The pragmatic tool of streets is considered as an appropriate medium to bring these elements together since it is the pillar for physical consolidation and spatial transformation.

4.3 TIME GENERATES RIGHTS THAT MAY BECOME FULL LAND RIGHTS OVER TIME

Time generates rights, and precarious land claims may become full land rights over time. This basic legal principle articulated by Fernandes[79], and most famously observed through cases of adverse possession, should be taken into account during any upgrading intervention. Settlements are continuously developing and claims are continuously shifting. Streets help demarcate the boundaries of public and private domains around which claims eventually become rights. Subsequently, these rights generate demands but also obligations for both the citizenry and the State in the form of tax payments, consumer's charges on infrastructure provision and consumption which can potentially be transformed into improved service provision

and revenue generation for the city. The example of the Urban Land Management Programme in Tirana, Albania works on this principle, where forming and safeguarding streets was used as a practical strategy for the future urbanisation of the periphery. However, this is not always the case. In Ahmedabad, India, for instance, the 10-year guarantee of occupancy did not materialize into stronger claims and many slum dwellers, who were part of the slum networking progamme, were evicted for construction of roads and fly-overs. The street-led citywide slum upgrading approach builds on a symbiosis of claims, rights and obligations between the State and the citizenry which are important to consolidate long-term sustainability of the proposed transformation and inclusion of residents of slums into the political and official process of planning and decision making, and integrate their settlements into the city fabric as a fully transformed serviced, planned and managed neighbourhood. As UN-Habitat has already noted in its upgrading strategies *"…Indeed, security of tenure is one of the most important catalysts for attracting large scale capital necessary for comprehensive slum upgrading but also for the urban poor themselves to invest in their own dwelling and communities"*[80].

4.4 CITIZEN PARTICIPATION OPENS MANY DOORS

UN-Habitat is committed to the participation of slum dwellers and all other relevant stakeholders in the city to ensure responsive street-led citywide slum upgrading. Communities have been involved in many ways in the life of projects. Consultative workshops, priority setting and action planning in Dar es Salaam, Tanzania and cities in Andhra Pradesh, India proved to be effective ways of engaging with communities. In Bissau the perceived advantages of the urban layouts proposed for upgrading triggered voluntary demolition and rebuilding according to the layout plan. Strong citizen participation in Tirana, Albania resulted in safeguarding open spaces and participatory opening up streets by voluntary demolition of fences and walls and demarcating street boundaries to achieve better urban layouts. In a similar example of Ghousia Colony in Karachi, Pakistan initial resistance to opening streets gave way to community participation in street demarcation and voluntary cutting of plots and buildings for street widening. In the Favela-Bairro programme of Rio de Janeiro organised community groups negotiated to minimise relocation and when inevitable, to find relocation sites close to the settlement. The Lusaka slum upgrading programme involved residents for planning roads and decision making for implementing layouts which lead to the establishment of 'road committees' as a participatory tool to define the street pattern, demolition of houses and relocation of residents to nearby plots.

The examples of Orangi Pilot Project in Karachi, Pakistan and Baan Mankong in Thailand stand out for their community-led approach to citywide upgrading. The street-based community groups in Orangi planned, financed and implemented their low-cost sewer network and negotiated with the municipality to connect it with the city system. This network is much more cost effective and as functional as conventional sewerage. The citywide community upgrading program as part of Baan Mankong in Thailand is led by poor communities who negotiate for secure land tenure, undertake housing and infrastructure improvement in partnership with local stakeholders such as municipalities, universities and NGOs. The funding support from the programme is often supplemented by local funds

from the municipality, business houses and NGOs. Mapping and enumeration by communities forms the basis for both these initiatives as outlined in the UN-Habitat publication Count Me In (see bibliography). The Slum Networking Programme in Ahmedabad, India was implemented by a partnership between local government, private sector, NGOs and slum CBOs. Slum households contributed financially to infrastructure construction and maintenance with the help of a micro-finance institution.

Community-based and participatory slum upgrading is also essential for the post-upgrading maintenance and consolidation processes. Already in the design of the upgrading interventions the residents can state which type, quality and quantity of infrastructure they can contribute to maintain. This is especially necessary in cities where the utility companies and the municipality are rather weak and cannot maintain all the infrastructure on their own.

4.5 POST-UPGRADING MAINTENANCE IS ESSENTIAL FOR SUSTAINING BENEFITS

The maintenance and management of the public spaces, streets and urban infrastructure installed as a result of slum upgrading is often forgotten, neglected and at times totally ignored during programme design. This only becomes evident during the post-upgrading phase by the neglect of public utility companies and public works departments of municipal governments that leads to deterioration, abandonment and despair. The transformation of slums into formal neighbourhoods is therefore not automatically translated into better service provision, maintenance and management. This can be minimized and even prevented by involving residents, community groups and community leaders and public utility companies in the planning, design and implementation phases of the programme[81].

Furthermore, a key challenge is to improve implementation and management in ways that does not promote new informality[82]. Specifically, post-upgrading and regeneration strategies must be designed to ensure that local economic development and individual home improvement activities take place within a minimally regulated environment. Urban transformation (the change from slums to formalised neighbourhood) needs to be guided, monitored and managed by local governments through routine urban management procedures in partnership with local actors. The street-led citywide slum upgrading approach incorporates this dimension from the start since streets are treated as public spaces primarily planned and maintained by the public sector, but where utility companies in charge of pavement, drainage, garbage collection, cleaning, safety and public electricity must play an integral role.

The examples reviewed here in this paper show both bad and good experiences. Ghousia Colony in Karachi presents an example where much of the benefits of opening up streets are lost for lack of accompanying measures for post upgrading sustenance. Private investment on plots has led to health and safety concerns. Building regulations exist but are not followed. Another concern is the disrepair of street surfaces and inadequate arrangements for solid waste management. On the other hand, in Orangi in the same city community groups maintain sewer lines and latrines. The involvement of communities in the construction of roads and drains in the Kampung Improvement Programme of Indonesia has resulted

in community commitment to maintenance of upgraded facilities. In the case of APUSP in India, a part of the municipal budget was earmarked for operation and maintenance of slum infrastructure.

4.6 POLICY, INSTITUTIONAL AND ORGANISATIONAL FRAMEWORKS ARE CRITICAL FOR CITYWIDE SLUM UPGRADING

In order to plan, execute and manage a complex citywide programme, city governments must set-up the institutional and organisational basis that is required to effectively carry out multiple activities in multiple locations involving multiple stakeholders. Policy, institutional and organisational frameworks are fundamental to enable slum upgrading to reach a citywide scale and be sustained for multi-year periods. These frameworks should consider all necessary actors such as private builders, utility companies, NGOs, CBOs, CSOs, citizens and others. Experience in cities that pursued citywide programmes demonstrates that weak capacities and poorly conceived solutions generate a waste of resources and under-performance by the public sector. Institutions and procedures necessary to ensure the longer-term continuity of interventions are seldom put in place. Also, policy and practice treat slums as separate parts of cities and therefore fail to effectively integrate them into the urban fabric. The street-led citywide slum upgrading approach described herein has as one of its foundations the establishment of a stable, empowered and well-trained institutional capacity for all stakeholders as an environment conducive for continuous and multi-year programming.

Cooperation agreements, and institutional procedures must be created in parallel with any upgrading initiatives, with a clear project involvement that first defines and then becomes capacity. This institutionalisation of slum upgrading in the work plan, procedures and budgets of the local government and utility companies and its embedment into the institutional and organisational structures serves to protect a full carry-through in phasing as well as the establishing the basis for accountability and participation in the maintenance of infrastructure investment.

In Sindh province of Pakistan the informal settlement regularisation policy is laid down in the formal legislation and the Sindh Katchi Abadi Authority was created to implement the policy, which includes street formation as one of its major components. A flexible institutional framework of the Favela-Bairro programme allows the formation of partnerships between the municipality and a range of actors depending on different upgrading needs and strategies. The APUSP programme in India stressed on pro-poor institutional reforms in local government to improve capacities to work with the poor and deliver sustainable environmental improvement at scale. The Baan Mankong programme of Thailand channels government funds directly to poor communities for planning and upgrading their housing, infrastructure, living environments and land tenure security. The CODI, an autonomous public organization under the Ministry of Social Development and Human Security has the mission of bringing poor communities and cities together to forge citywide solutions in Thai cities. The institutional configuration of the Kampung Improvement Programme of Indonesia has evolved from a centrally managed top down national model to a decentralised participatory approach managed by local government. The slum networking programme in Ahmedabad, India has drawn attention for

its multi-stakeholder participatory structure where local government, private sector, NGOs, micro-finance institution and slum communities participated financially and worked as implementation partners. However, this arrangement could not be sustained beyond the pilot phase for its complexity, the unwillingness of additional private sector players to participate and the limited capacity of NGOs.

The street-led approach has the potential to involve different groups of stakeholders in different locations of the city, allowing real time engagement and flexibility in implementation, rather than sticking to one predetermined model, which may not work everywhere.

4.7 CAPACITIES MUST BE STRENGTHENED AND DEVELOPED FOR ALL STAKEHOLDERS

Capacities are crucially needed and must be strengthened and/or further developed. The expertise, skills and knowledge needed to address the theme of public space, street patterns and overall planning and management of the public domain within participatory citywide slum upgrading programmes needs to be enhanced, if not developed, from scratch in many parts of the world. All experiences documented and analysed underscore the human resources and institutional capacity dimensions. This targets the local governments, CBOs,NGOs, utility companies and the community's capacity and ability to plan, manage and execute complex and large scale urban regeneration processes at the settlement and citywide levels. Building the capacity of all stakeholders in the same way is of high importance and must be agreed upon in order to result in a meaningful impact within the domains of each stakeholder.

A dedicated Research and Training Institute provides training and technical support to community groups in Orangi Pilot Project; the Kampung Improvement Programme of Indonesia allows learning and capacity building on a continuous basis because of its large scale and long time frame; the urban land management programme of Tirana and APUSP rely on training of community groups and local government for planning, implementation and up-scaling upgrading; the first phase of the Favela-Bairro Citywide Slum Upgrading Programme in Rio de Janeiro, Brazil, had a capacity building and training component to strengthen project management, team building and monitoring and project impact assessment; the first phase of the Citywide Slum Upgrading Programme of Agra has been effectively used for on the job training and building an understanding of the requirements of up-scaling. The Participatory Development Programme in Urban Areas in Egypt has used a detailed empirical study of the social and economic dimension of streets to build awareness among policy makers and practitioners and stimulate a street-led upgrading pilot project.

The capacity development efforts have also focused, as in Rio de Janeiro and Thailand, on the community of planners, architects, engineers, civil servants in order to convert them into agents of change and efficient managers of citywide slum upgrading programmes. It has been recognised internationally that training and educational programmes must be designed and offered nationally and internationally. The curriculum of university education must be reformed to include the phenomenon of informal urbanisation, slum upgrading and slum prevention policies if the international community wishes to halve the number of slum dwellers by 2020 as stated

in the Participatory Slum Upgrading Program of UN-Habitat and achieve cities without slums in the 21st century[83].

4.8 UPGRADING SHOULD RESULT IN OVERALL HIGHER REVENUES FOR THE CITY

Slum upgrading is part and parcel of the inclusive city development strategy as advocated by UN-Habitat. This has an intrinsic implication for the rights but also the obligations of residents and the State alike. For example, the provision of basic infrastructure and the formalisation and ultimately legalisation of properties implies the enforcement of user's charges on the consumption of water and electricity and provision of solid waste collection, sewerage and drainage systems, and property taxes. The inclusion of these settlements into the formal registry of the city is likely to generate revenues. The revenue generated by slum upgrading and urban transformation can help justify the financing of scaled-up redevelopment, while increasing the legitimacy of slum-dwellers as contributors to state/ municipal revenues in the eyes of other city dwellers and thus increasing their right to demand good and reliable public services. This has been demonstrated by APUSP, India, where 4-5% of municipal property tax revenues are generated from upgraded slums.

It would be counterproductive and naïve to expect full cost recovery from slum upgrading, particularly if one considers the size of investments and the life span of the infrastructure networks. However, investment in infrastructure (public good) yields private investment on property development and housing improvements (private goods) making street-led slum upgrading an effective tool for increasing property valuation, wealth generation and business incomes which are likely to cause spin-off effects on the prosperity of neighboring areas. Overall this is good for the city and for slum dwellers alike.

An optimal street pattern formalised in a settlement's urban layout permits the cheapest allocation of basic infrastructure networks, which trigger increases of property value and are a source of revenue for the city. Streets also provide clear addresses and the locations necessary for metering resource consumption. In programs financed by the IDB in Latin America, it was recognised that the opening of streets generated multiple positive impacts for both the city and the inhabitants[84]. For example, in Rio de Janeiro property prices went up and 34 upgraded slums/favelas demonstrated that business and commercial activities also grew, in some cases doubling in volume, as a result of the Favela-Bairro programme[85]. A comparative analysis of 143 real estate transactions in favelas included in the Favela-Bairro Programme, and those not included in the programme, found that properties in upgraded favelas were worth twice as much as in non-upgraded favelas. The value of land situated near these upgraded settlements had increased by 20% and the dwellings by 170%[86]. In Uruguay, a survey using hedonic price techniques was carried out in nearly 850 properties spread amongst the neighbourhoods subject to interventions by the Regularisation of Informal Settlements Programme (and those with similar characteristics as control group), finding property-value increases of more than 150%[87]. A post-project evaluation of the Hyderabad Slum Improvement Project in India showed that property values in improved slums and surrounding neighbourhoods in central areas had gone up by more than 200%. The evaluation also noted that property transactions had started for the first time in many slums after upgrading[88]. The examples presented in Annex 1

show that there is considerable post-upgrading investment in housing and economic activities in the settlement, implying wealth production and revenue generation.

These findings are extremely relevant as they help confirm the argument that slum upgrading can generate wealth from which municipalities can capitalise through adequate property tax and other betterment tax instruments, contributing to the basket fund to upscale the street-led slum upgrading approach and bring it to a citywide level. This cannot be effectively achieved without an area-based plan defining the urban layout and the street pattern that forms the basis for property and land regularisation, boundary definitions and formalisation of land occupation.

A considerable amount of financial resources are required to pursue a global strategy for achieving cities without slums[89]. The Task Force of the Millennium Development Project estimates USD 670.00 per person as the average cost for upgrading slums and improving the living conditions of 100 million slum dwellers as stated in the MDG 7D. On the other hand, the Inter-American Development Bank set the ceiling of USD 2,500.00 per household to finance the early phase of the Favela-Bairro citywide slum upgrading programme in Rio de Janeiro. Subsequently this was raised to USD 4,500.00 per household to finance basic infrastructure provision, such as water, sanitation, public lighting, drainage, street pavement, public space/squares and additional housing provision to accommodate those families whose houses had to be demolished. This could range from an 8% increase per household (beginning of Favela-Bairro Programme) to a 30% (Chile) increase, during upgrading itself. The Integrated Settlement Upgrading Programme in Quito set the maximum investment per household at USD 1,000.00/household with 90% of this to be invested in infrastructure and community facilities. These figures are not financially sustainable taking into consideration the average household income in the region, the size of the problem and its ever growing dimensions[90]. Specifically designed cost recovery instruments have not been implemented except for the expectation that once regularised, residents of these settlements will start paying for services and property tax like all the other parts of the city.

UN-Habitat has experience coordinating urban finance instruments and soliciting public/private investors by leveraging a catalogue of cases where upgrading demonstrably increased household revenues and therefore also local/city government revenues as well. The Habitat Slum Upgrading Facility (SUF) has led pilot programmes in Ghana, Indonesia, Sri Lanka, and Tanzania, providing advisory services, referral functions, financial packaging, and innovative financial products between local and international partners. Amongst other methods, the SUF was able to minimize the risk associated with private loans for a community and municipality, by promoting upgrading initiatives which bring revenue to the city, in the long run. However, this programme was discontinued due to the complex banking systems and legal frameworks governing the use of seed capital for slum upgrading operations.

The Community-Led Infrastructure Finance Facility (CLIFF) programme, for example, mobilises bank loans via collaboration between Homeless International, the Cities Alliance, and local implementing partners. CLIFF is grounded in the notion that demonstrating the coherence of a community-led upgrading strategy boosts investor confidence, stating: *"loan finance…*

allows communities to demonstrate their capacity to implement financially viable projects... When financial institutions can visit and assess projects that are underway, it helps them to develop confidence in the quality that can be produced through a community-driven process."[91]

By promoting a community-led slum upgrading strategy coordinated and phased around streets, a highly coherent city/household revenue model can be designed, thereby facilitating higher levels of more diversified financing through even lower risk. This can become part and parcel of resource mobilisation for continuing citywide street-led slum upgrading programmes.

4.9 SECURED MULTI-YEAR FINANCING IS KEY TO UPHOLD SLUM UPGRADING STRATEGIES

The costs and investments required to plan, design, implement and maintain a continuum of citywide slum upgrading interventions in a given city has proved to be high if pursued as an integrated programme. The first phase of the Rio de Janeiro's Favela-Bairro Programme had a budget of USD 360 million of which 60% originated from the municipal budget and 40% from an IADB loan. This expenditure can be justified by the goal of reaching an inclusive city but also by the revenue generated by settlement upgrading and the improved connectivity with the rest of the city through the street-led approach. As such, finance must be made available both domestically and internationally, coordinated with a phased citywide programme, to consistently and effectively develop a twin-track approach to include a wide range of strategies to address both existing slums and to prevent new ones from being formed. This is a matter of housing policies which reinforce the close linkages between slum upgrading strategies and housing delivery systems[92].

Thereby the focus should lay on domestic resource mobilisation as this strategy is proven to be more sustainable, foreseeable and manageable. This means cities must organize their property tax regime, increase revenues, create guarantees and development funds, and promote savings and different kinds of community-led savings and institutions[93]. It is imperative that financing be sustained throughout the entire span of a street-based phasing of upgrading initiatives. The UN-Habitat Slum Upgrading Facility advocated that, for example, upgrading financing be tied to employment initiatives, an incremental approach, and a continuous involvement of residents in order to ensure that a project is sustained long enough to generate returns. Financing must be tied to a multi-year phased approach. Only with a clear long-term strategy can financing follow a gradual implementation. A prioritisation around streets affords this, while requiring a concerted long-term strategy to financing.

The APUSP programme in India supported municipalities to undertake reforms such as property tax improvements, earmarking funds for the poor and operation and maintenance of services in the annual municipal budget and citywide prioritization of slums for phased implementation to enable a continuous flow of local funds for slum upgrading and maintenance year on year[94]. Such an approach can ensure continuity of street-led upgrading, with higher volumes of activity when additional funds become available. Financial and institutional reforms also make municipalities credit worthy, enabling them to mobilize funds from the financial market. Increased local revenue is also important as the upgraded neighbourhoods including their maintenance costs will be included in the municipal budget whereby the expenditures will rise. For example in Indonesia up to 30% of municipal budgets are used for improving and maintaining services in kampungs.

There is a wealth of experiences which demonstrate the effectiveness of community-led slum upgrading and the growing creditworthiness of individuals and households living in slums to uphold multi-year upgrading programmes. The Philippines' Community Mortgage Program(CMP) is an example of government support to enable organized communities to access funding with support from NGO's that act as "loan originators" and provide technical assistance. This programme has gained scale and revealed low levels of default, but the subsidy to interest rates of the loans and cumbersome procedures have significantly hindered programme efficiency. The slum networking programme in Indian cities has demonstrated the ability and willingness of slum dwellers to pay for public improvements when they can save and borrow from micro-finance institutions. In 34 countries in Asia, Africa and Latin America, Slum and Shack Dwellers International (SDI) supports the establishment of community savings groups and the formation of federations of these groups. Such initiatives are demonstrating the potential for alternative modes of financing access to land and infrastructure that enable community-led slum upgrading. Governments are matching these savings with funds created nationally, and donors are further supporting international urban poor funds, enabling access to funds on a continuous basis.

The community-led Baan Mankong programme of Thailand is a long term multi-city programme and is managed by the Community Organisations Development Institute (CODI) set up by the government. CODI channels small loans and subsidies directly to community groups for upgrading, rebuilding and new housing. The combination of low cost and high speed, a process managed by the formation of small building cooperatives, collectively reduces the risk of default and propels CODI financing to large scales of intervention. These funds are supplemented by community savings, encouraged by the programme and increasingly with contributions from private foundations and religious organizations and municipal investment for infrastructure. Poor communities work in close collaboration with their local governments, professionals, universities, temples and NGOs to survey all the communities in their cites and then plan an upgrading process which

> ' *A citywide scale approach is fundamental to enhancing the economic outcome generated by the opening of prioritised and multiple streets in different slum settlements, increasing connectivity, circulation and mobility but also providing the opportunity for the ultimate physical integration of slums and informal settlements into their surrounding neighbourhood.*

attempts to improve all the communities in that city over the next few years. The community upgrading program is helping to create local partnerships which can integrate the housing needs of poor communities into city development and resolve future housing problems as a matter of course. The availability of steady funding in small packages allows relatively risk free operations over a long time period allowing the phased implementation of projects.

4.10 RELIABLE INFORMATION IS NECESSARY FOR PARTICIPATORY DECISION MAKING

A particular problem in most cities is that the information base on slums and urban poverty is highly inadequate for planning citywide interventions. Knowledge on the numbers of the poor, the size and number of settlements, the differentiated nature of poverty, the severity of shelter deprivations, on livelihoods of the poor, on environmental conditions and even on service levels and deficiencies is incomplete or outdated and often disaggregated across institutions. Many cities do not include informal land occupations in maps and statistics. Settlements in peripheral locations are invariably left out as they are not within the city's administrative jurisdiction. As a consequence institutional responses tend to be concentrated on known needs and most pressing problems or demands within the limits posed by budgets and legal and administrative constraints[95].

The street-led approach relies on availability of reliable data, maps and information systems, which can be developed incrementally and updated periodically. Data collection cannot be neglected and is *sine-qua-non* condition for a successful citywide slum upgrading strategy. There are many ways to achieve this. Participatory enumerations, settlement profiles, use of satellite or google maps to make analysis and mark geographically different types of urban services available are just some of the forms commonly used to develop a base map of slums in a city. Formal census and household surveys are carried out by some city governments when starting with citywide slum improvement programmes, particularly in cities with well equipped institutions and trained personnel. But methods like participatory enumeration can reduce costs as explained elsewhere in this report. See the work of UN-Habitat 'Count Me In' mentioned in the bibliography.

Transparent and accessible information is critical for participatory decision-making regarding a wide range of interventions including opening of streets in the upgrading process. This is demonstrated in several ways in the examples presented in Annex 1. Street surveys involving local residents in Tirana, Albania and in Karachi, Pakistan triggered off voluntary surrender of land and demolition of property to widen streets. Mapping of slums was the essential first step in upgrading projects in Bissau, Dar es Salaam and Lusaka. In many cases like Dar es Salaam city GIS maps are first produced to identify slums. The Favela-Bairro programme of Rio de Janeiro has been building up an information base incrementally to include all favelas in the digital map of the city resulting in better quality design and improved planning responses. Good quality maps and data have facilitated participatory decision making and technical interventions in slums, particularly with regard to planning and implementation of road and street improvements. Community enumeration and mapping informs citywide strategies for upgrading and finding land for new housing in Baan Mankong programme of Thailand.

Mapping and community enumeration is used by SDI member communities to understand their own situation and negotiate with local government.

The Egyptian case demonstrates that in addition to maps and data, the knowledge of patterns of street use and associated conflicts and compatibilities is helpful for understanding the multiple role of streets in low income settlements and thus in designing street related interventions.

4.11 STREET-MAKING CREATES JOBS

The strategic opening of streets in slums and connections with city networks lead to improved economic opportunities within slums and easier access to city level income generation activities. Streets are the settings for commerce such as shops, hawking and vending as well as for economic activities like small manufacturing and repairs. All the examples documented in Annex 1 substantiate this observation in different ways. For example, the deliberate strategy to let the 'city enter' into the slums in the Favela-Barrio Programme of Rio and Citywide Slum Upgrading in Agra has created local jobs in tourism and sports; whereas the Medellin case shows better connectivity to work in the city and commercial buoyancy along the major streets opened for making room for the elevated public transport system on cable cars. The case of Bulaq al Dakrour in Egypt shows a clear hierarchy of streets consisting of commercial, mixed use and quiet residential streets for which residents have specific valuation. As earlier suggested, it is very important to undertake research that grasps the impact of streets, better accessibility and urban mobility on the labour market, job opportunities and income generation.

Land use surveys in the slum Paraisópolis in São Paulo, Brazil, demonstrate preference for commercial activities along the well-defined streets and increasing investment in shop and property improvement along side these streets. This suggests a co-relation between streets, connectivity and accessibility with job creation and income generation.

Furthermore the immense scope for employment in the construction of streets during upgrading and their maintenance later has not been overlooked. The Kampung Improvement Project of Indonesia, for instance created employment for 62,000 unskilled workers for 90 days. The street-led slum upgrading strategy promotes the incorporation of these direct and indirect employment potentials into the design of slum upgrading programmes.

4.12 SAFETY AND SECURITY ARE IMPORTANT CONCERNS OF SLUM RESIDENTS

The street-led strategy for citywide slum upgrading recognizes that well designed streets and open spaces provide the ideal conditions to fit in public lighting, drainage systems and accessibility to open spaces which improve safety and security in slums. This is more prominent when accompanied by public safety and civic engagement measures. Most impact assessments of upgrading projects report that improved safety and security in the post upgrading phase is perceived by the resident community as one of the key benefits. The implementation of the street network coupled with the execution of public lighting and better accessibility also has a very strong gender component. In cities like Medellin, Colombia and Rio de Janeiro, Brazil, safety and urban violence have been placed on top of priority concerns of residents during the last 20 years, and often associated with slums and informal settlements.

It is not a coincidence that in these cities urban safety has been associated to slum upgrading. The opening of streets in the Favela-Bairro Programme of Rio de Janeiro, Brazil, has enabled better policing of settlements to reduce the incidence of organized crime and drug trafficking[96] and has been argued by female residents to be one of the reasons for women to increasingly go out at evening hours to engage in education, economic and cultural activities.

In Medellin, Colombia, significant improvements in safety have been accomplished through interventions in the physical structure of the barrios, creating and recovering streets, improving accessibility, creating better public spaces and improved management of public spaces and social mobilisation processes coupled with civic culture and youth targeted programmes[97]. The implementation of social urbanism as part of a municipal policy towards the slums and impoverished areas of the city is credited to supply the city with an abundant amount of public spaces generated through the Urban Integrated Programmes (PUI). This also included public libraries situated in strategic locations connected to the public transport system. The success of Medellin is associated with the multi-year continuing process of citywide slum upgrading that started in 1993 with the PRIMED programme and followed by the PUIs but also because of its integrated character of combining physical improvements with social, economic, cultural and civic development oriented interventions. The role of the streets and particularly of the physical planning components as enablers of the remarkable change in safety and levels of violence experienced by the city could not be less emphasised. The connectivity via street-led intervention and urban mobility enhancement was critical for the social inclusion strategy of the municipal government.

The third phase of the Favela-Bairro Programme uses safety and security as the key drivers of public space planning and social organisation. The mix between physical and social developments is paramount in increasing safety. Evaluations of the Indian slum upgrading programmes repeatedly confirm the appreciation of safer streets by the local community, particularly for women and children.

4.13 THERE ARE LIMITS TO SLUM UPGRADING

It should be noted that slums vary in types, forms, size and location, subject to different land tenure (on private or public land, rented or invaded land, on risk areas, on steep terrain or flooded and/or disaster prone areas, etc), densely or sparsely occupied, with or without street patterns as outlined in chapter 4 of this paper. Given the vast variety of slum typologies and national and city contexts it is clear that one size does not fit all and that is the reason for different international experiences. The examples in Annex 1 show that there are potentials for as well as limits to upgrading settlements and opening streets in them. These are to a large extent determined by informal settlement development trends.

Broadly speaking two main trends can be identified. The first one is characterised by a series of individual, mostly autonomous, land appropriations and occupations followed by incremental building construction by individual households or landlords. It is easily recognisable through its irregular patterns and unplanned occupation, higher mass-to-void relationships (higher densities) with very small, winding corridors and pathways. These settlements make upgrading and service delivery very difficult and at times very costly. The second trend consists of organised and pre-planned land developments carried out by informal developers and

occasionally by organised groups of households. The 'piratas' of Bogota (Colombia), the informal land brokers of Karachi (Pakistan), the 'traficantes de tierra' of Guayaquil (Ecuador)[98] are the most notorious of these informal developers. Because land parcels are usually acquired by financial transaction, they tend to have clearer boundary delineations and better defined public and private domains and noticeable signs of urban layout planning making upgrading and service delivery much easier and more effective than in the first case. Despite having intrinsic difficulties with upgrading, the dense slums of case one may also become consolidated neighbourhoods over time, particularly when streets and open spaces are created incrementally to generate urban layouts and residents achieve security of tenure through active dialogue with governments[99].

Site conditions often determine the extent to which settlements can be upgraded. For example, houses in the barrios of Medellin subject to the interventions of the PRIMED and PUI programmes are only accessible by steps and narrow footpaths because of steep slopes on which settlements are built. This is also the case with the Favela-Bairro programme in Rio. Other locations simply do not qualify for upgrading as they lay on environmentally hazardous areas such as steep slopes, contaminated soil, besides dump sites. These locations pose a health threat to their inhabitants and cannot be upgraded and must be resettled onto safer locations. The resettlement of populations and demolition of their settlements have commonly bigger cost implications then in-situ upgrading when one includes the tangible and intangible losses in assets such as housing investments, new housing building, demolition, new infrastructure connections, loss of safety nets and social capital, increased costs with transportation, housing costs, etc.

The Island of Capri, outside Naples, Italy, one of the most expensive and exclusive tourist and residential areas in the region, is situated in a difficult topographical location with some houses only accessible on foot through long pedestrian footpath-like-stairway, based on which one can foresee a plausible future of some favelas situated in the hillsides of prime locations in Rio de Janeiro. In these locations, the area-based plan and design of the street network face limitations and physical constraints hindering the application of certain planning norms and standards applied elsewhere in the city. Some degree of adaptation to geographical and topographical constraints is necessary. Capri and the favelas of Rio and barrios of Medellin give ample evidences of that. There are obvious limits to slum upgrading. Though, both programmes in Medellin and Rio de Janeiro have used innovative methods to improve access and open up streets and public spaces and overcome these topographical constraints via different mobility strategies, street-opening, cable cars and a network of footpaths. They are also known for innovations in service delivery: for example the system of garbage collection in Rio through the cable cars called 'uphill inclined plans' and the specially designed mini tractor-pushed containers that run through the basic street network of the favelas. These two cities cross-fertilized each other's citywide slum upgrading programmes in city-to-city exchanges lending to the experiences with public transport through cable cars and urban mobility plans, integration strategies and institutional management and project implementation arrangements. UN-Habitat recognises that the large scale of citywide street-led slum upgrading programmes makes it easier to overcome

the limitations of site conditions as innovations become cost effective and institutionally viable. Further, where sites are untenable (for example, subject to disasters such as landslides, floods etc) a citywide programme provides better opportunities for resettlement to safer sites.

Legal and institutional frameworks invariably come in the way of upgrading projects. Some successful upgrading projects have simply ignored the usual legal and institutional blocks—such as building and planning regulations—and used ad hoc arrangements in project planning and implementation[100]. Such an approach is not without its risks. For example, the community-based FUNACOM housing programme in São Paulo often ignored official legal structures and created informal processes in their place. This provided the justification for a newly elected, more conservative, administration to stop the programme and attempt to prosecute several people involved in this practice[101]. A citywide approach must include the setting up of appropriate legal and institutional frameworks to support upgrading rather than bye-passing them.

Paradoxically, regularising tenure as a first step in upgrading, as is often advocated, may actually limit possibilities for upgrading. This is so especially when individual property titles/leases are given without opening streets and forming public spaces. From the examples presented here it is observed that better urban layouts, with improved living conditions and economic opportunities have become possible because street related interventions were the starting points of regularisation and upgrading.

4.14 SLUMS ARE STIGMATISED, MYSTIFIED OR TREATED AS AN OPPORTUNITY

Slums are frequently stigmatised by one group but also treated as an opportunity by others. For example, a NiMBY (Not in My Back Yard) syndrome frequently arises whenever poor families are to be settled living next door to middle and high-income residential areas. Whenever upgrading is announced vested interests from surrounding groups and neighbourhoods oppose regularisation and in-situ upgrading, fearing that negative externalities brought by the regularisation of a poor settlement next door will adversely affect the public perception of their neighbourhood and negatively influence housing and real estate prices of their properties. Preference is expressed for relocation and removal to another site instead of in-situ upgrading. In New Delhi, India, for example, there are several court cases filed by middle-class neighborhood associations near slums and 'green groups' for demolishing slums on environmental grounds[102]. In the case of APUSP, non-slum residents in some of the cities protested against improvement of slum infrastructure as they were paying the taxes but not seeing improvements in their areas, even though conditions there were only marginally better than the slums[103].

There is also a phenonmenon of opportunism related to slums whenever upgrading and regularisation is publicly announced. Just the simple announcement that a particular settlement will be included in a citywide slum upgrading programme provokes gradual densification caused by relatives, friends and opportunists finding a way into a settlement to claim benefits along with the original residents. Government recognition, de-facto or full legalisation offers a unique opportunity to find a home in the city which is an incentive for people to do the utmost to be included amongst beneficiaries of such a project.

This is a variable that should be considered when designing a slum upgrading programme. If not part of a twin-track approach that offers affordable housing opportunities at scale it is likely the densification and slum growth will occur like in the Rio de Janeiro during the implementation of the Favela Bairro programme.

The romanticism about slums sometimes promotes the idea of slums as a vibrant place that tends to overshadow the harsh conditions under which slum dwellers are compelled to live. There is a myth about people moving to cities in search of opportunities and better living conditions and the slums and rented accommodation is the first step in entering into the urban economy. But the reality in slums challenges this notion. Data from UN-Habitat suggests an urban penalty affecting slum dwellers. The urban inequality survey carried out by UN-Habitat in more than 250 cities compared for the first time slums and non-slums and rural residents. It revealed that slum dwellers die earlier, experience more hunger, have less education and less job opportunities than their non-slum in the city and rural village counterparts. There is also the notion that slums are vibrant places of economic activity that is needed in most cities. It is obvious that a place like Dharavi in Mumbai, India, provides a surmounted amount of cheap labour, a variety of cheap products produced in various workshops and informal businesses. But this does not take away the responsibilities of city governments to provide in return the benefits of urban development and make it accessible to residents of the settlement in the form of improved infrastructure, services, accessibility and a planned environment.

The street-led slum upgrading strategy as herein advocated actually provides the response to start changing these conditions for good and initiate an inclusive process of integrating slums and its population into the overall urban prosperity of cities, reconnecting them incrementally with the services and infrastructure that serves the city as a whole and bringing the benefits of urban development to the realm of the population living in slums. The street-led slum upgrading becomes the bridge between the formal and informal city. Examples from the Kampung Improvement Programme of Indonesia and Orangi Pilot Project of Karachi, Pakistan, show that areas in the vicinity of projects have actually benefited from the improved environment in terms of health indicators and property prices. On the other hand, citizens in some towns where APUSP was implemented in India have questioned the use of municipal revenues generated in non-slum areas to fund slum upgrading.

4.15 SLUM UPGRADING COMBINED WITH SLUM PREVENTION STRATEGIES: TWO NECESSARY FACES OF A SINGLE POLICY

If slum upgrading is not incrementally executed and combined with other policies that provide a wide range of housing opportunities to other social and economic segments of society, it is likely that stronger economic groups will replace the original residents. In this context upgrading generates market distortions and boosts informality elsewhere. UN-Habitat promotes policies and strategies to enable access to adequate housing by all segments of society according to their needs, capacity and ability to pay. It advocates a twin-track approach. That means in practice that the citywide slum upgrading programme is part and parcel of a housing policy

that aims to deliver housing options at scale and in variety of typologies, price, location, standard and size to all segments of the population. Thus, the twin-track approach has leg focusing on the existing stock of slums while the other leg focuses on the supply of affordable housing opportunities that can act as viable alternative to slums.

This twin-track approach lies behind the attempt to reformulate the MDG 7/11 focusing on the improvement of the lives of slum dwellers. In 2005 the Task Force of the UN Millennium Project on improving the lives of slum dwellers proposed a new formulation of target 11 as such: "*By 2020, improving substantially the lives of at least 100 million slum dwellers, while providing adequate alternatives to new slum formation."[104]* The intention is to combine slum upgrading with bringing housing solutions and alternatives to scale. A twin-track strategy makes clear the need to plan for the expected urban growth and provide alternatives to accommodate the demand for housing and serviced land in cities for the coming decades. In practice this means that next to the proposed street-led citywide slum upgrading programme focused on the existing stock of slums and informal settlements, governments and their partners from the civil society, community and private sectors must plan and develop wider access to affordable serviced land, basic services and different modalities of housing finance at scale adequate to different income groups with the focus on low-income households.

Citywide slum upgrading programmes such as in Rio de Janeiro, Medellin and Agra and multi-city programmes such as in Indonesia and Andhra Pradesh ensure the continuity of upgrading and related institutional reforms through phased implementation. World Bank funded projects for upgrading and sites and services in the 1980s in cities such as Kolkata, Lusaka and Manila applied the twin track approach on a large scale, even though not citywide. Currently not enough attention is given to the preventive aspects or to generating the supply of land and housing to accommodate future low income households. UN-Habitat's strategy on land and housing encourages governments to embark on broad housing reforms that will resolve critical bottlenecks in housing delivery and serviced land supply so that housing opportunities are scaled-up in quantity and diversity in size, layout, location, standard and price[105].

4.16 STREET-LED UPGRADING OFTEN REQUIRES DEMOLITION AND CITIZEN PARTICIPATION ENABLES PEACEFUL RELOCATION

International experiences in all regions demonstrate that the implementation of an area-base plan calls for spatial restructuring, demolitions, relocation of buildings and families and redefinition of plot boundaries and properties and the opening and/or consolidation of streets and pathways. The establishment of a street network and the realisation of an urban layout configuration as part of the physical and spatial integration strategy unquestionably require demolitions, relocation of residents and re-blocking and housing (re) construction. This may bring unrest within the realm of the population if not done through a consultative and transparent process. Top-down approaches have not been successful in these situations. When forced evictions have been carried out, more problems than solutions arose. This should be discouraged in favour of negotiated resettlement and relocation following due

process e.g. participation, notification, compensation when needed, provision of alternative housing nearby the previous location are encouraged based on the principles of Habitat Agenda and international instruments[106].

The street-led strategy to citywide slum upgrading is consistent with these instruments. While it recognises the need for relocation in order to provide room for better and more optimal settlement urban configuration, it is also unwaveringly grounded in the rights of individuals and households through participatory enumerations and solid community involvement. This strategy addresses the need to provide accessible and well-designed public spaces which are important elements of the agenda to improve quality of life and social interaction within the public domain. International examples show that it is feasible to implement this strategy and the demolitions and relocations required for this purpose can be undertaken through processes of community mapping, enumeration and participatory planning. In Ghousia Colony, Karachi, Tirana, Albania and Bissau, Guinea-Bissau once the advantages of street widening were discussed, people cooperated in conducting the survey and demarcating new street boundaries. They voluntarily gave up portions of their plot and demolished and reconstructed the affected portions. Relocations were also carried out in the Karachi case without any resistance. The favela-Bairro Programme of Rio also involves considerable amount of relocation for opening up streets using a criteria defined jointly with the Inter-American Development Bank for the purpose of defining the acceptable amount of demolition and relocation and the threshold for financing housing reconstruction. The strategy is to keep relocation to the minimum necessary to realize the urban restructuring of the settlement and to locate resettlement areas as close to the original settlement as possible in order to minimize adverse effect on social and safety networks of residents. In Lusaka road planning groups drew up and presented to the community alternate alignments of roads for settlement upgrading, clearly showing the demolitions required. Once the plan was agreed, relocations were accommodated. A negotiated process of demolition and relocation in Medellin, Colombia provided room for urban regeneration and clearing rights of way and station space for the 'metrocable' system. Those affected were supported to relocate to new housing within the area or outside by choice. Compensation was based on the amount required to buy a house, but lower than the cost of new social housing.

> ❝ *The street-led approach to citywide slum upgrading is based on phased development, incrementally executed and focusing strategically on a few streets at first to deliver higher impacts and trigger subsequent development. Successful slum upgrading reveals three simultaneous processes over time: (1) the slum dweller becomes a citizen; (2) the shack becomes a house, and (3) the slum settlement becomes a neighbourhood.*

5 URBAN PRINCIPLES - THE STREET AS TOOL FOR PRACTICAL IMPLEMENTATION

The strategy for citywide slum upgrading that has the street as the cornerstone, serves as the practical tool for implementing a number of principles of urban planning and transformation. These principles promote inclusive development within a framework of economic growth, human rights and sustainable environments. The urban principles have been articulated by UN-Habitat in recent years through policy guidance, implementation support and capacity building of wide-ranging urban institutions across a large number of countries. Citywide slum upgrading demands critical measures outside the domain of slum settlements as well as within. The street network becomes the binding element of these two domains, reinforcing their interconnections and interdependencies and creating value additions in both the city and the upgraded slum in a number of practical and symbolic ways. Thus streets facilitate the operationalisation and implementation of some of the key principles of urban planning and slum upgrading.

5.1 PROMOTE INTEGRATED CITYWIDE PLANNING

Principle: Integrated citywide planning includes slums physically in overall city planning; financially in the budget of local/central government organisations and cross subsidy arrangements; and administratively in the work plan of government organisations responsible for service provision, user's charges collection, property tax and street addressing. It is about fostering an inclusive approach to city development, in which slums become an integral part of the city and slum dwellers are not discriminated against in access to civic services. As a long-term strategy it requires regulatory, institutional, organisational, and policy reforms. Citywide strategies should have clear targets and involve all of the city's service providers, and must be accompanied by effective land management policies to manage future growth and to prevent the formation of new slums. Integrated planning provides a framework for complex contemporary practices of citywide slum upgrading programmes, comprised of multiple and simultaneous projects aiming at the legal, social and physical integration of different slums into the official systems of planning and urban management.

Link to streets: Streets are the starting point for a physical integration of slums and new extension areas into the formal and official systems of planning and urban management that govern a city. UN-Habitat upholds that participatory street-led citywide slum upgrading is a simple and straightforward approach that rationalises the layout of settlements and generates spatial urban patterns that essentially transform slums into neighbourhoods and connected economies through a process of physical integration with the larger urban area, where streets, and public space, act as the primary conduits for social and economic transformation that benefit the city as a whole. Streets become the foundation for one's address in the city and to access every single service provided by the city government, representing the stepping stone for the full integration of slums into the city administration system.

Streets are the first step to integrating the economic resourcefulness of slum dwellers into wider urban and national markets. Security of tenure follows street patterns and the formalisation of a settlement's urban layout and physical mobility and economic access are dependent on streets. This full integration strategy uniquely benefits from the coordination of upgrading policies with an overall urban development strategy. It provides a framework for citywide slum upgrading programmes, which can trigger urban transformation and impact the overall urban spatial structure of cities.

5.2 ENABLE IMPLEMENTATION IN PHASES

Principle: An incremental process of implementation takes into account the financial, logistical, planning and managerial capacity and constraints of city governments, local priorities for slum improvement and the peculiarities of particular sites. Ideally it starts with the present capacity of local government and builds up gradually in the form of a multi-year programme that links up with budget cycles. Thus a phased programme does not overburden institutions and allows learning and course correction. Generation of revenues from tariffs and taxes can be used for improving services in subsequent phases and consolidate the citywide programme. Additional resource mobilisation to enlarge the coverage of the programme is part and parcel of an incremental development process. Demonstration of early successes can mobilize financial, political and community support which can be easily integrated in the gradual scaling up.

Link to streets: The UN-Habitat street-led approach to citywide slum upgrading advocates phased development, incrementally executed and focusing strategically. This is translated into street-based upgrading starting with the opening and/or improvement of prioritised streets to deliver higher impacts and trigger subsequent development. The selection of streets for the initial improvement is based on local requirements and careful analysis of existing patterns of streets, circulation, social uses and urban configurations. Most likely streets are prioritised to bring the highest outcome

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> **Box 5: 14 key urban principles: implemented through streets as a practical tool**

1. Integrated citywide planning
2. Implementation in phases
3. Improved urban mobility and connectivity
4. Fostering economic growth
5. Creation of citizenship
6. Development through strategic participation and partnerships
7. Optimisation of density and promotion of mixed uses
8. Enable urban layouts through land readjustment
9. Laying the basis for the provision of security of tenure
10. Supporting safer cities
11. Providing alternatives to 'forced' relocation
12. Planning for disaster risk reduction
13. Ensure a steady flow of funds from a variety of resources
14. Making slum upgrading responsive to gender and youth as well as to children, the elderly and the disabled

in terms of development opportunities, accessibility, urban connectivity, efficiency, poverty reduction, optimisation of land use and generation of urban and property value. Resources will determine which and how many streets will be opened, improved and consolidated based on the principles outlined above for citywide planning. The participation of residents is key to increase local ownership and support to its implementation and maintenance.

5.3 IMPROVE URBAN MOBILITY AND CONNECTIVITY

Principle: Mobility and connectivity are critical for cities to grow and prosper. The primary role of streets in human settlements is to allow mobility of people and connect places and uses. Establishing a coherent network of roads and streets both in new extension areas and already urbanized areas constitutes a key task for city planning. A mix of approaches from laying new streets to adapting the street layout to the local uses and traffic management are deployed to meet the mobility needs of cities. A citywide scale approach is fundamental to increasing connectivity, circulation and mobility in slums thus reconnecting areas previously secluded from the rest of the city by non-existence of streets, access roads and transportation.

Link to streets: The strategy for street-led citywide slum upgrading maintains that mobility of slum dwellers towards social integration and physical connectivity with the formal city is achieved through a pattern of streets and public spaces providing links within the slum itself and linking the slum with the rest of the city. Enabling physical and spatial integration and creating a continuous urban fabric through streets is thus essential to achieving greater mobility of people, goods, jobs and capital. This approach allows improved mobility within slums and improved access to workplaces while increasing capillarity and accessibility within the city as a whole. The provision of a key street network alone is allowing public transport to enter the area and making the slum accessible for residents of other areas which at the same time increases the recognition of the area.

5.4 SUPPORT ECONOMIC GROWTH

Principle: Inclusive economic growth is a key issue in cities that are increasingly faced with skewed economic development and are growing predominantly informal. This form of urbanisation may counter-intuitively undermine the ability of cities to generate wealth, prosperity and economic and human development. There is a remarkable social capital in slums that is manifested in inventive entrepreneurship, shops, workshops, small-scale home-based enterprises and a buoyant informal economy providing business opportunities and income for a large number of people living in slums. Promoting these business initiatives through strengthening shopping streets, consolidating existing clusters and foster gradual formalisation through street and area-based plans will strengthen the position of slum dwellers and their business in the city. Connecting street-led citywide slum upgrading with additional local economic development programmes to assist marketing their products and services, professionalize the management of their assets and strengthen the informal business chains will gradually enable them to find their way into other customers and consumers in the city and thus reconnecting slum upgrading with a viable income generation programme.

Link to streets: Streets play a vital role in generating inclusive urban economic growth and increasing productivity of slum dwellers. This is achieved by the urban layout of a settlement, connected with the citywide urban spatial structure through its network of streets and mobility patterns which facilitates access to jobs and economic hubs in the city. Such spatial structure promotes greater integration and mobility throughout the city and creates opportunities for economic growth and integration. In addition to supporting economic growth through allowing transport of people and goods, streets trigger economic activity, attracting shops, workshops and services. Opening streets enhances property values, which in turn can be captured to generate local government revenues. Investment on basic infrastructure takes place along the streets and major access roads as well as public open spaces which trigger economic value and local economic development processes.

An incremental street-led slum upgrading offers the choice of particular streets, followed by others incrementally, to maximise the economy of those streets as a function of slum upgrading that is likely to propel development and income generation activities. Experience shows that once formalized, paved and improved, streets trigger significant domestic investment in housing and property improvement. This is key for future property-led revenue generation for local governments via taxes and fiscal instruments. But it also stimulates local businesses and thus creating jobs and income.

5.5 CREATION OF CITIZENSHIP

Principle: Citizenship is the basis of every society and the respect for citizenship rights lays the basis for human development. With the recognition of these rights by the State and its institutions as duty bearers comes the citizenry with the notion as claim holders exercising their rights to demand equality in public service provision. This is notorious in slums whenever community builders manage to mobilize residents around common problems. Street-led slum upgrading can foster a rights-based development process. In Rio de Janeiro, for example, during the 1980s the favela residents' movement closely associated the recognition of their citizen rights with the inclusion of their settlements into the city map with a street address. In the subsequent decade the Favela Bairro programme introduced the street addressing as one of its programme component and the participatory process that precedes the decision about the name significantly enhances this notion of citizenship. Nurturing respect for citizenship also brings with it the notion of rights and obligations. Slum upgrading provides for improved basic infrastructure and access to public services, ensure security of tenure and inclusion into the city's urban management systems. This is the ultimate recognition of people's rights for an adequate standard of living. While formalisation compels residents to start paying for these services it also encourages them to demand good quality and reliable services. This gradually changes the state-citizen relationship in these areas. Respect for and enhancement of the notion of citizenship amongst slum dwellers is critical for street-led citywide slum upgrading and this becomes strategic when linking to participatory planning, design of the programme, budgeting and prioritisation.

Link to streets: The street-led process adds value to upgrading through its intrinsic ability to connect people and places and start the trajectory of transformation of slum dwellers to citizens, shacks to houses and slums to neighbourhoods.

The street-led citywide slum upgrading process integrates physically the slum into the city and transforms from secluded to included settlement and from living in an undefined cluster of shacks to living in a house with an address, a number and a street name.

Upgrading of slums through the street-led citywide slum upgrading strategy is carried out with the full participation of slum communities, ensuring their voice in decision-making and their choice of the development approach. Slum upgrading with improved public spaces and the provision of streets, squares and other amenities is key to improving quality of life of slum dwellers. Street-led development as core of a settlement's urban layout configuration creates the necessary conditions for accessing the right to water and housing which raises the status of citizens. Empowering communities to organize themselves and create positive experiences during successfully implemented slum upgrading interventions will have positive long-term effects on the community in terms of organization, self-esteem, self-organisation and responsiveness to local area-based development processes.

Another element of the street-centred approach advocated by UN-Habitat is the creation of street addresses that validate the location and the existence of slum dwellers. An address brings the symbolic attainment of citizenship rights and inclusion in the city. This transformation helps slum residents finally obtain the official recognition of their residential areas that a street name and address brings with it. Their participation in decision making over the street naming is key to bring local ownership, identity, build self-esteem and citizenship building.

5.6 DEVELOPMENT THROUGH STRATEGIC PARTICIPATION AND PARTNERSHIPS

Principle: Involving local stakeholders and fostering a variety of partnership agreements are necessary to effectively design, plan, implement and manage citywide slum upgrading programmes. This should not be seen as a straightforward process. Efforts to mobilize and include different stakeholders should be part of the genesis of the programme which tends to benefit from the knowledge, skills and resources that these different actors bring to the programme realm. Stakeholders' participation will only succeed if the benefits of their involvement are clearly outlined. A proper stakeholders' analysis will provide the programme with a clear map of convergent and divergent interests and the level of interests at stake if slums are upgraded and consolidated in particular areas of the city. It will also unfold the value chain that connects residents to it. The residents of slums and their community-based organizations are the ones who have the highest interest in the delivery and maintenance of all public goods that are brought by slum upgrading e.g. street pavement, public lighting, water, drainage, public spaces which will link them for good with the rest of the city. Therefore their views, opinions and priorities must be part and parcel of this participatory approach. The street-led citywide slum upgrading approach that is promoted herein by UN-Habitat considers stakeholders' participation and the direct involvement of residents as a *sine-qua-non* condition for successful settlement upgrading.

Link to streets: The street-led citywide slum upgrading strategy builds on the practical and symbolic role of streets as the key to linking up neighbours, businesses and economic activities situated adjacent to each other and sharing the common public space provided by the streets. This entails the active participation of the residents and their grassroots organisations

in a simple and practical participatory process to rationalise the urban structure of these settlements through an area based plan and street pattern. This participation continues through the formulation, prioritisation, implementation and post-implementation phases of settlement upgrading. Different tools and participatory planning instruments should be used to maximize resident's contributions to the process.

In addition to residents, the involvement of NGOs, municipal departments, private entities, academic institutions and civil society organisations is considered critical to the success. As the upgraded settlement also gives a boost to the local economy, commercial interests need to be included, as well as others who could act as donors/investors with special attention towards the ones which will later draw financial advantages from the upgrading. Utility providers like the water and electricity suppliers as well as garbage collection companies have an interest in participating to ensure that the services that they provide meet the needs and demand, are paid for and that maintenance requirements are embedded into the upgrading plan. These utility companies have a specific consideration for tariff setting and cost recovery. This inclusive approach increases confidence amongst all parties involved and ensures full ownership of the process and does make stakeholders more open for similar projects in the future. It is important that such a multi-dimensional participatory process is professionally guided in all its stages commencing with a thorough stakeholder analysis.

5.7 OPTIMIZATION OF DENSITY AND PROMOTION OF MIXED USE

Principle: Densification of cities is a strategy to reduce urban sprawl, to optimize the use of service infrastructure (costs per head/km), reduce transport costs and minimize the adverse impacts of urban growth on urban mobility, green house gas emissions and energy consumption. Compact cities strategy takes advantage of economies of agglomeration and helps to mitigate the conversion of valuable and fertile agriculture land into urban use. This can be achieved through redevelopment of existing low density built-up areas, promoting higher floor area ratio per plots and ensuring higher density in new development. Slums that are upgraded and regularised often go through processes of densification by vertical growth, re-utilisation of land parcels and redevelopment in spill areas nearby. This may lead to congestion and over-occupation if not properly guided by an area-based plan and by the implementation of a settlement street network plan that is connected to the surrounding neighbourhoods. Home-based enterprises, shops and workshops functioning hand in hand with residential uses materialize functional and population densities that may turn improved slums into vibrant neighbourhoods in the future. But there is a risk of congestion if not guided by a plan. This needs to be understood and promoted whenever and wherever possible. This is likely to create increased social control of public space which has positive impacts on crime prevention. As elaborated by Jane Jacobs in "The Death and Life of Great American Cities" mixed use areas are safer and allow social relations to flourish and should be promoted as a deliberate strategy.

Link to streets: The opening of streets is vital for the improvement of quality of life in slums, particularly in densely occupied settlements where congestion, over-occupation of land and the inadequacy of streets and squeezed spaces

for circulation and accessibility are the sources of multiple problems faced by slum dwellers. The choice of the first street to be consolidated will determine the future changes in accessibility and connectivity to slums since it will have to overcome the spontaneous, unplanned and haphazard land occupation that characterizes these settlements. Streets will pave the way for urban transformation and future land regularisation and will inexorably produce higher population densities. Interventions that leave intact the existing spatial and urban layout configuration of slums are counterproductive and should be discouraged. A laissez-faire attitude of city governments triggers uncontrolled building activity by which settlements evolve informally and spontaneously into densely built and haphazardly occupied neighbourhoods without space for amenities such as schools, dispensaries, playgrounds as well as inadequate street space to support the more intensive use of plots. This is likely to produce congestion, over-occupation and secluded settlements. This process of regularisation and upgrading and consequent densification is irrational in the long run and adversely affect the productivity and competitiveness of cities..

The street-led approach rationalises the settlement structure through an area based plan and street pattern which provides space for streets, open spaces, amenities and infrastructure networks in a way that supports higher densities and mixed use. The implementation of the street network will inevitably lead to negotiations about housing relocation, making space available for social services like schools, daycare centers and clinics and generate mix-use settlements.

5.8   ENABLE URBAN LAYOUTS THROUGH LAND READJUSTMENT

Principle: Land readjustment or plot reconstitution enables the materialisation of settlement configurations and urban layouts in existing settlements as well as new areas by the reconstitution of parcels and boundaries of privately owned land through negotiation with land owners/occupiers and their re-conversion into plots for residential and/or commercial uses, streets, land reserves for public uses and social housing and open public space safeguarded for the future. Land readjustment is a negotiated process to facilitate urban redevelopment and the implementation of new settlement layouts that does not require expropriation. Land sharing solutions for slums situated on private land configures a type of land readjustment where the private owner, slum dwellers and municipal governments accept a total reconstitution of land parcel boundaries. This has been widely used in Thailand and India.

Link to streets: The street-led citywide slum upgrading approach is an appropriate method for negotiating urban layouts with land readjustment. Prepared with the participation of local residents, the layout not only determines the future spatial configuration of a settlement but also redefines the pattern and hierarchy of streets that guides the overall land readjustment process in a transparent manner. In this approach, new boundaries of public and private domains are clearly outlined as well as areas for circulation, leisure, vehicular and pedestrian accessibility and for the execution of basic infrastructure networks such as water supply, electricity, drainage, sewerage and other amenities.

The opening of streets and their subsequent pavement in line with the urban layout plan defines the future urban configuration of the settlement. The street network provides a strong spatial frame to deal with the complexities of settling claims and entitlements in the negotiated layout formation process.

5.9   ENABLE SECURITY OF TENURE

Principle: Slum upgrading must result in greater security of tenure and assurance of land and housing rights as fundamental conditions to trigger private investment in housing improvement, wealth production and property development. Security of tenure gives the necessary protection and stimulus for individuals and households to invest in building improvements and housing rehabilitation which in itself will generate wealth and urban value. However, full regularisation of tenure rights is rarely accomplished since conventional land and property registration is complex, time-consuming and costly for the inhabitants. The recognition of a spectrum of conditions has been articulated by UN-Habitat through the Global Land Tool Network as a normative approach to grapple with highly complex and multi-faceted relationships between land and informality, recognizing a continuum of land rights.

Link to streets: The street-led approach to citywide slum upgrading includes an incremental approach to land regularisation following the establishment of the street network that assures the rights of individuals, groups of individuals and households. The legal approach to security of tenure should be developed during the early stages of the programme formulation and consolidated during the determination of the area-based plan and the street pattern of the future. As such, streets may become pillars for the establishment of new forms of land ownership that is incremental, community-oriented, easy-to-set and financially low-risk.

Paradoxically, regularising tenure as a first step in upgrading before the street network and the urban layout plan have been adopted, with the argument to counterbalance threats of eviction, as is often advocated, may actually limit possibilities for upgrading and jeopardize the positive outcome of the settlement plan. This is so especially when individual property titles/leases are given without opening streets, defining the public and private domains and forming public spaces.

The opening and consolidation of streets lays the basis for legalisation and regularisation of land tenure as part of the future urban configuration of settlements, rather than carrying the burden of ad hoc informal settlement configurations. The phased implementation of primary, secondary, and tertiary street networks and delineation of public and private domains, while respecting existing housing patterns, directly lends itself to an incremental approach to tenure security. It starts with street-based participatory enumeration which paves the way for establishing claims and rights, which can later materialize into land rights certificates, occupancy deeds, land lease rights and other forms of recognition that will lead to full property rights.

For residents, enumeration and street addressing often translates into sufficient security for household investment in housing improvement and economic activities, even without legal security of tenure. Street addresses provide the evidence that the slum population permanently resides in the neighborhood and is formally recognized by the city authorities and thus

forms a stepping stone for them to move from their precarious and unrecognized status to occupancy rights as citizens of their city. As such, a streets-focused strategy can usefully put into practice the notion of a continuum of tenure types/land rights, being advocated by UN-Habitat's Global Land Tools Network. An incremental approach to street-based land tenure regularisation also ensures that costs and finances are kept within affordable ranges for both governments and residents.

5.10 FOSTERING SAFER CITIES

Principle: Urban violence, safety and security in cities are growing concerns worldwide, a phenomenon that has been often associated with slums and informal settlements leading to further social exclusion and spatial, economic and cultural segregation. Governments have often neglected slums and in the absence of the state and the rule of law parallel power structures established by criminal organizations and drug dealers have emerged and imposed even harsher conditions onto slum dwellers and their living space who live in constant fear and state of insecurity. Slum dwellers become victims or offenders creating a domino of escalating violence and impunity. This situation must be addressed by the street-led citywide slum upgrading approach. The safety and well-being of slum dwellers should not be taken as incidental consequence of settlement upgrading but it must be regarded as an explicitly planned outcome of street-led citywide slum upgrading. Crime prevention and mitigation of violence of any kind should be an integral part of the package of public investments and policies embedded in the slum upgrading strategy.

Link to streets: The street-led approach to citywide upgrading contributes to the development of urban safety and social cohesion. The introduction of street paving, public lighting and mixed use along a street is likely to bring more usage and social interactions amongst residents that create more social control of public spaces with positive impacts on the sense of public safety. Opening streets allows greater state presence for policing, waste collection etc. enhancing safety and security of public spaces. The presence of corner shops and activity areas in neighbourhoods have the same effect. Furthermore, physical integration, spatial connectivity, greater circulation and accessibility are paramount to create capillarity in the city's urban fabric towards a safer urban environment. But physical interventions only do not address the problems of safety, insecurity and violence. It is necessary to integrate a series of measures, programmes and strategies to increase urban safety and reduce, prevent and mitigate the adverse impacts of crime and urban violence.

The Safer Cities Programme of UN-Habitat, in its fifteen years of operation, has focused on urban management and vulnerabilities regarding urban violence and public safety at a local level. It has developed specific tools and strategies to address urban vulnerabilities vis-à-vis violence and offences.

5.11 PROMOTE ALTERNATIVES TO FORCED EVICTION

Principle: International experiences in all regions demonstrate that the establishment of a street network and the realisation of an urban layout configuration as part of the physical and spatial integration strategy unquestionably require demolitions, relocation of residents and re-blocking and housing (re)construction. Top-down approaches have not been successful in these situations. When forced evictions have been carried out, more problems than solutions arose. This should be discouraged in favour of negotiated resettlement and relocation following due process e.g. citizen participation, prior notification and consultation, compensation, and livelihood support prior, during and after relation, and provision of alternative housing based on the principles of the Habitat Agenda and international instruments. UN-Habitat promotes a rights-based approach to slum upgrading consistent with the promotion of the progressive and full realisation of the right to adequate housing as formulated in the international instruments and the Habitat Agenda. The street-led citywide slum upgrading approach identifies and promotes alternatives to forced eviction such as in situ upgrading and negotiated resettlement.

Link to streets: The street-led strategy to citywide slum upgrading is consistent with these instruments. While it recognises the need for relocation in order to provide room for opening streets and better settlement configuration for effective accessibility and connectivity to the city, it is also unwaveringly grounded in the rights of individuals and households thorough participatory enumerations and planning. The principle of 'free, prior, and informed consent' (FPIC) is part and parcel of the street-led strategy. The focus on streets brings an intrinsic resident participation in all phases of the slum upgrading process which strengthens negotiations and prevent forced solutions for those who need to relocate. The aim is to minimize relocations and arrive at consensus based solutions through discussion and negotiation about which structure must be removed, which streets to open and/or widen and where relocated families should be housed. For the purpose of these relocations, and having a maximum impact with minimum disruption, the supply of serviced land within or near settlements is critical. The proximity of the new location is vital to prevent adverse impacts on social networks and livelihoods of residents. It stands to reason that land must be made available when designing a slum upgrading intervention. Citywide planning for slum upgrading must consider making land available for resettlement and new housing most preferably be within or nearby the existing settlement in order to minimize the disruption of social networks and safety nets that are crucial for slum dwellers living in the edge of economy. Provision of land and housing opportunities are also part of the twin-track approach to slum and housing supply.

5.12 PLAN FOR DISASTER RISK REDUCTION

Principle: Many cities have initiated measures for climate change adaptation and mitigation as well as disaster management. Because of their hazard prone location and poor housing and infrastructure conditions, slums and informal settlements are vulnerable to multiple disasters such as floods, fires and landslides which are likely to be exacerbated with climate change. Special mitigation and adaptation measures and disaster management arrangements must be enforced to address this physical and environmental vulnerability. Street-led citywide slum upgrading should not disregard settlements located in risk prone areas and occupation of unsuitable land that are likely to cause losses of human lives. On the contrary, it must make land available for relocation, sites and services and new housing to enable the supply of adequate housing to those residents subject to relocation. Whenever in-situ upgrading is a suitable solution, one must incorporate risk reduction, environmental vulnerabilities and mitigation

measures to enable sustainable development during the post-upgrading phase.

Link to streets: Streets are key elements in planning for natural disaster: Physically the street pattern, surface material and design can assist in reducing the effects of natural disasters: e.g. the natural flow of the water during heavy rains/floods can be influenced and ease flow of transport of people and goods. Preventive measures for earthquakes can be implemented, green urban design can reduce the effects of heat/drought, streets can break wind patterns. Streets provide access for emergency vehicles and space for fire-fighting equipment and can help evacuate people during emergencies. The organization of community groups per streets and geographical addresses, as outlined in the street-led citywide slum upgrading strategy, can enable the population to react faster to sudden events, especially if they are trained.

5.13 ENSURE A STEADY FLOW OF FUNDS FROM A VARIETY OF RESOURCES

Principle: Evidence from generations of slum upgrading projects suggests that guaranteeing sources of finance is *sine-qua-non* for long-term programming and a fundamental condition for success. Central and local governments in partnership with private, civil society organisations, NGO's and the international community represented by donors and funding institutions must work together in order to guarantee long-term financing. Slum dwellers and their grassroots organisations must contribute to this effort as well. This concerted action is crucial in order to guarantee long-term programming and multi-year commitments and policy continuity. Although initial funding might come from a onetime project fund the finances for the incremental citywide upgrading have to majorly come from internal resources, mostly by changing the national and local money flow. Tax revenues, municipal earmarked development fund, revolving type of basket funding, savings mobilisation, land-based finance and different forms of financing instruments must be devised.

Link to streets: Slum upgrading which incorporates the opening of streets based on urban layouts and the materialisation of street address as the basis for tenure security and service provision creates the sound conditions for public investments as well as private investment complementing the phased implementation of streets. Formalisation and regularisation of slums and their subsequent transformation in neighbourhoods officially connected to the city planning and governance systems create the basis for capital investment. Street addressing, as advocated in the street-led strategy, makes it easy for service providers to set and collect tariffs for services. Conversely, on the long-term the formalisation of slums and their full integration into the city through streets and cadastre generates new sources of finance for the city.

5.14 MAKING SLUM UPGRADING RESPONSIVE TO GENDER AND YOUTH BUT ALSO CHILDREN, THE ELDERLY AND PEOPLE WITH DISABILITIES

Principle: Violence against women and women's feeling of insecurity are major concern that must be addressed in slum upgrading. One of the outcomes of street-led citywide slum upgrading is to make the space and physical environment gender-friendly and also user-friendly for young adults, children, the elderly and people with disabilities. An important task is to identify and address through planning, design and urban management all factors contributing to this feeling of insecurity in the public space such as absent lighting, lack of urban signage, narrow alleys and dangerous passages, aggressive behavior and uncontrolled occupation of land and vacant space.

Link to streets: Tools such as women's safety audits can be instrumental to street-led citywide slum upgrading given that it enables participation and empowerment of women in the definition and decision over the urban environment and spatial configuration of their residential space and immediate surroundings[107]. The street is the common denominator that assists in making accessibility and social control of public spaces a real gain in slum upgrading with direct benefit for these social groups. Streets are the locus where children play nearby their home; it is the locus that women use to interact with neighbors about their household needs and establish social networks; it is the place where young adults meet their peers and do joint activities. It is commonly the place where the elderly place their chairs to observe and be part of public life. The design of the street, the street network and the settlement urban layout will provide the slum with an orderly urban environment, with more discipline in building and land occupation, and a planned framework for its future development and transformation into a neighborhood fully integrated into the city while creating the spaces for amenities for children e.g. playgrounds, public squares, sports facilities as well as easy access for on-foot circulation by the elderly of the community.

The street-led citywide slum upgrading approach is ideal for the participation of a variety of community groups who engage and contribute by articulating their needs and voicing their dreams during the process of design, planning, implementation and management of slum upgrading activities. The incremental approach allows for lessons learned to be incorporated into subsequent actions and ongoing settlement improvement processes. This grassroots participation is likely to lead to creativity and innovation in slum upgrading.

> *The area-based plan, the effective secure tenure and peoples' participation are three aspects that need to go together as the basis for effective slum upgrading. The pragmatic tool of streets is considered as an appropriate medium to bring these elements together since it is the pillar for physical consolidation and spatial transformation.*

6. DO'S AND DON'TS OF STREET-LED CITYWIDE SLUM-UPGRADING

Thematic areas	Do	Don't
Urban Planning and Management	1. Integrate slum upgrading in city planning and management 2. Design area-based plan introducing urban layout with street networks based on priorities of communities and city development 3. Adopt an incremental and phased approach to slum upgrading and prioritised street opening 4. Connect the street network in the slums with the overall city street plan and urban mobility networks 5. Plan urban layouts with appropriate norms for rationalising densities and minimizing relocation 6. Design, plan and execute slum upgrading programmes in a participatory and consultative manner 7. Make land available for relocation within or nearby the upgrading site for new housing construction 8. Make use of appropriate tailored communication tools to increase lay residents' understanding of slum upgrading actions 9. Design slum upgrading interventions on the basis of reliable data collection and mapping 10. Investigate peculiarities of each slum area, their population and the physical and environmental context in which they are located	1. Isolate slum and implement piecemeal upgrading projects 2. Improve infrastructure without making urban layout plan and street network 3. Attempt to implement the plan and execute all streets at once 4. Implement piecemeal project-based slum upgrading intervention on single slums 5. Impose unrealistic standards and regulations 6. Implement top down approaches to programme design and settlement planning 7. Initiate programme implementation without certifying legal status of land tenure and property rights 8. Take for granted the ability of residents to understand technical designs & plans 9. Underestimate the need for proper mapping and baseline information about the slum population 10. Carry out a "one size fits all" solution 11. Underestimate NIMBY attitude 12. Disregard disaster management and possible impacts to the environment
Urban Economy	1. Strengthen existing economic activities through opening streets in slums that connects with the city networks 2. Provide for mixed land use to enable shops, commerce and home-based income generation activities 3. Develop multi-year (long term) financing strategies using combination of municipal revenues, external funding and residents contributions for upgrading and new housing 4. Improve tenure security to enable private investment in home improvement, business development and income generation activities 5. Establish property tax regime, users' charges and cost recovery tools as part of integration and self-financing strategies for sustainability of the programme 6. Execute strategies beyond the ability to pay of slum residents and foster regular allocation from municipal revenues to support long-term continuity of the programme 7. Mobilize seed capital to kick-start with the key streets in key slums to demonstrate the viability of the programme approach 8. Integrate job creation and vocational training to support entrepreneurship and small-scale enterprises during and after the upgrading process 9. Develop trust fund type of finance with the city/local business sector to support innovation and business incubation programmes connected to slum upgrading	1. Disregard connectivity of street networks of slums with shopping streets and main arteries of the city 2. Discriminate the informal economic sector and home-based enterprises 3. Separate slum upgrading from investment planning and urban management of the city 4. Underestimate the role of property rights and documented security of tenure in boosting business investment in slums 5. Rely only on state budget allocation and government subsidies to finance programme implementation 6. Assume the full-cost recovery from slum residents and disregard their ability and willingness to pay for slum improvement 7. Attempt to mobilize finance for the whole programme at once without having a demonstration project 8. Disconnect local economic development strategies from street-led citywide slum upgrading programme 9. Neglect long term financing strategies to promote business and income generation activities and jobs for slum dwellers within the realm of the programment

	Do	**Don't**
Basic Infrastructure	1. Use streets as basis for incrementally executing and providing infrastructure networks in prioritised streets in the slums that are part of the citywide street-led slum upgrading programme 2. Enhance the benefits of streets by combining their improvement with public lighting, drainage system and garbage collection 3. Involve residents in setting priorities, design, implementation, operation and maintenance of infrastructure 4. Design streets and infrastructure networks to maximize usefulness of public space for residents 5. Use street addressing to set consumers' metering and users' charges on infrastructure provision to generate revenue for self-financing 6. Involve all vulnerable groups, youth, women and the elderly in the decision about types and norms of basic urban infrastructure provision 7. Upgrade infrastructure in the slums according to the overall norms, standards and level of infrastructure provision found elsewhere in the city 8. Revisit technical standards for infrastructure and adapt to circumstances found in the different slums 9. Design infrastructure investment programme in connection to street-led citywide slum upgrading 10. Build synergies between infrastructure investments in slums and municipal finance and property tax.	1. Be ambitious about the ability to implementing all the infrastructure networks at once. 2. Provide infrastructure and services that are not affordable and cannot be sustained by the city government 3. Disregard residents' participation in the early stage of planning for infrastructure improvement as condition for sustainable maintenance in the future 4. Ignore the role of pedestrians and street fronts in fostering secure public spaces and economies for new and existing housing 5. Disconnect slum upgrading from the costs of infrastructure provision incurred by public utility companies 6. Ignore the gender dimension and the role of other groups in infrastructure design and use 7. Upgrade infrastructure in slums above overall infrastructure level of the city that may cause gentrification and distortions 8. Impose technical norms onto informal contexts of slums 9. Forget the need to incorporate operation and maintenance of infrastructure networks, facilities and services from the very beginning of the programme
Governance, Legislation and Participation	1. Institutionalize street-led citywide slum upgrading into existing local government structures and public policies 2. Establish institutional and organisational set-up prior to commencing the programme 3. Include civil society organizations, the private sector, academia, service providers and other relevant stakeholders in planning, implementation and maintenance 4. Build local capacity and partnerships for street-led citywide slum upgrading 5. Institutionalise the relation of the street-led citywide slum upgrading programme with all strategic plans of the city 6. Prepare post-upgrading legislation and guidelines 7. Include public tendering, bidding and transparent procedures for programme implementation 8. Institutionalize the participation of citizens in upgrading, including mapping and enumeration; planning and management of streets and public spaces 9. Institutionalize slum upgrading on local government level 10. Create a forum for participatory decision making 11. Build community awareness of the right to adequate 12. housing and the right to water	1. Create ad-hoc project groups to plan and manage citywide street-led slum upgrading programming 2. Underestimate the organisational basis and institutional capacity to design and delivery the programme 3. Disengage local groups 4. Disregard existing legal and urban regulatory frameworks and the overall capacity for programme management and implementation 5. Exclude legislators, councillors and other institutional, policy and strategic frameworks guiding the city development 6. Exclude post-upgrading mechanisms to sustain maintenance and consolidation; 7. Create government monopoly in programme design and implementation 8. Manage slum upgrading on central government level far away from the project site
Tenure security	1. Use streets to form new legal boundaries for public and private domains 2. Look at the continuum of land rights and decide which one is appropriate 3. Ensure secure tenure, consolidate occupancy rights 4. Design and negotiate relocation plans when required for settlement layout and opening streets 5. Include regularisation and formalisation of housing and buildings on land that is regularised as part of slum upgrading 6. Use urban layout to create base map for property rights registration 7. Register urban layout and street addresses in state / public registry	1. Disconnect street making from defining plots, boundaries, public and private domains 2. Discriminate against any tenure security options rental 3. Promote single tenure options 4. Dissociate property regularisation from security of tenure 5. Regularise or privatise land before the urban layout has set street-based plot definitions and boundaries 6. Promote single plot regularisation 7. Ignore citizens property rights and compensation claims in case of relocation and demolitions

	Do	Don't
Rights based approach	1. Recognise participatory enumeration and other forms of documented rights to define entitlements of the resident population in street-led citywide slum upgrading 2. Include residents and their legitimate grassroots organizations in decision making about programme design and implementation 3. Accept legal pluralism and customary rights when designing the area-based plan defining the urban layout and street networks in slums 4. Design and negotiate relocation plans when required for settlement layout and opening streets 5. Implement demolitions and relocation of residents to resettlement sites based on the principle of due process e.g. participation, prior notification and consultation, compensation, provision of alternatives, support to livelihoods prior, during and after relocation.	1. Disregard any form of security of tenure and property rights that empowers slum dwellers in their claim for in-situ upgrading 2. Discriminate anyone from participating in the slum upgrading process 3. Adopt one single tenure security option 4. Adopt forced-evictions and top-down resettlements for street making 5. Relocate haphazardly and to far away sites without respect for citizenship.

Bird's eye view of Gleba K in Heliopolis, Sao Paulo.
Source: Municipality of Sao Paulo

❝ Street-led citywide slum upgrading strategy presents the argument that streets, by being natural parts of city networks and urban layouts, are a potentially vigorous tool to achieve physical improvements in slums as well as to integrate slums into the city, to regularise land and security of tenure, and set the basis for sustained citywide transformation and local economic development.

7. CONCLUDING REMARKS

This paper built the case for a street-led citywide slum upgrading strategy drawn on a wealth of experiences and examples. The conceptual framework outlined in the part A presented the evidence-based argument that streets, by being natural parts of city networks and urban layouts, are a potentially vigorous tool to achieve physical improvements in slums as well as to integrate slums into the city, to regularise land and security of tenure, and set the basis for sustained citywide transformation and local economic development.

The Part B of the paper drew lessons from international experience demonstrating the strength of a street-led approach which has been widely used throughout the world without necessarily being called as such. It becomes clear that street-making opens rich opportunities for citizen participation and on the one hand for regularisation of property rights in favor of its inhabitants and on the other for property tax collection and revenue generation by the city. Ultimately, this part of the paper made an unequivocal argument that streets are vital for the transformation of slums into future vibrant and included neighborhoods of the city.

It goes without saying that the problem of informal urbanisation and the multiplication of slums need to be addressed at its deep-rooted source. The scarcity of serviced land and the lack of affordable housing opportunities become a stimulus for people to resort to informal and illegal access to land and housing. Even those who have an income are pushed to urban informality. This creates an uncontrolled and unplanned process of urbanisation that clearly threatens the prosperity of a city and its ability to maximize its role in economic development.

Given current rates of slum formation, it is evident that large part of the population is not capable of accessing affordable and adequate housing opportunities. Data collected by UN-Habitat suggests that nearly 40% of the population living in slums is non-poor. This implies that associating slums with poverty may be misleading. It is already observed that slums situated in prime locations, nearby jobs and public amenities, are increasingly going through a process of gentrification and displacement of resident population by economically stronger groups. This reinforces the argument that slums are not the result of poverty only.

National and city governments must develop approaches and policies to deal with the phenomenon of informal urbanisation in a consistent, coherent and sustained form. A twin-track approach must be pursued which combines the improvement of the existing stock of slums through street-led slum upgrading with the provision of adequate alternatives to slum formation that involves the supply of housing opportunities at scale in a planned environment to accommodate urban growth. Slum upgrading and the supply of affordable housing are part and parcel of a one single housing policy that must be executed simultaneously.

Regarding the one track of this approach, this paper advocates for fundamental shifts in addressing slums. A first shift is from project-based and piecemeal upgrading of a single settlement to a citywide programme policy addressing multiple settlements in a continuous and long-lasting public policy. A second shift is to place streets at the core of the slum upgrading intervention based on the assumption that streets will leverage the necessary physical changes necessary to kick-off the full integration of slums into the social, economic, spatial, fiscal, planning and legal frameworks that govern the development of the city.

Living conditions in slums are inadequate because of poor housing and the lack of public spaces, accessibility, streets and public services and its exclusion from the overall city networks and urban management systems. Growing income inequalities are also creating an urban divide. This should be addressed without delay and the approach outlined in this strategy paper provides a straightforward and practical strategy of street-led citywide slum upgrading that integrates physical, social, economic and environmental dimensions in one coherent policy.

One of the fundamental conclusions brought forward by this paper is that citywide slum upgrading programmes that deliver a pattern of streets based on an incremental development strategy with strong residents' participation are likely to create the necessary physical conditions for promoting local economic development processes. This will define the future urban configuration of settlements and provide room for the implementation and coverage of basic infrastructure networks while also creating the platform for slum dwellers to exercise their full citizenship and their right to the city. This will support the achievement of the MDG target on slums but also contribute to improving the quality of life in cities.

In an ideal situation, multiple street-led slum upgrading interventions in different slum locations are likely to create the capillarity and connectivity between formerly excluded areas of the city and ultimately transform slums from secluded to included zones within a functional urban spatial structure of the city through a network of streets and urban mobility fabric.

Nevertheless, despite the fact that there is a wealth of global experience and sufficient know-how in in-situ slum upgrading, there are still many obstacles hindering its implementation. The lack of political will to tackle the problem of slums at scale hampers the design and implementation of citywide slum upgrading that further hinders the legal, physical and social integration of the slums and slums dwellers into the formal city. Therefore, strong political commitment and broad support from civil society will be needed to realize citywide slum upgrading and inclusive, high-quality public space. Thus slum upgrading can be seen as a viable business proposition for its potential to transform the entire city and make it attractive for living and generate business opportunities.

The opening of streets and the creation of public spaces in slum upgrading offers a tremendous opportunity to explore and demonstrate alternative forms and combinations of mixed land uses, housing typologies and tenure systems promoting compact cities, at a maneuverable scale. Furthermore, these public spaces have great potential to become the site of innovative built environments created with green building materials, technologies, industries and livelihood activities and alternative water, energy and sanitation systems.

This paper advocates the development of capacity, knowledge and expertise backed by sufficient evidence drawn from slum upgrading experiences carried out during the last 50 years by municipal governments, NGO's, central government and specialised upgrading agencies. Lessons learned must be incorporated into action and lead to the development of guidelines to design, implement and manage citywide slum upgrading with the street as its central component.

ANNEX 1: EXAMPLES OF SLUM UPGRADING PROJECTS/PROGRAMMES

The annex shows 16 examples from different parts of the world to substantiate the conceptual underpinnings of the street-led citywide slum upgrading strategy.

North Africa

1. Egypt: Participatory Development Programme, Boulaq al Dakrour, Giza (Greater Cairo)

Sub-Saharan Africa

2. Guinea-Bissau: PMBB-Neighborhood Improvement Programme, Bissau
3. Zambia: Settlement Upgrading and Sites & Service Project, Lusaka,
4. Tanzania: Community Infrastructure Upgrading Programme (CIUP) and Participatory citywide upgrading of unplanned and poorly serviced settlements, Dar Es Salaam

South Asia

5. Pakistan: Orangi Pilot Project, (OPP) Karachi
6. Pakistan: Katchi Abadi Regularisation Programme, Ghousia Colony, Karachi
7. India: Dharavi Redevelopment Project (alternate strategy), Mumbai
8. India: Citywide Slum Upgrading Project (CSUP), Agra
9. India: Andhra Pradesh Urban Services for the Poor (APUSP)
10. India: Slum Networking Programme(SNV), Ahmedabad and other cities

South-East Asia

11. Indonesia: Kampung Improvement Programme (KIP)
12. Thailand: Baan Mankong and 200 cities programme

Latin America

13. Brazil: Favela-Barrio Programme, Favela Jacarezinho, Rio de Janeiro,
14. Brazil: Favela-Bairro Programme, Parque Royal Upgrading and Resettlement, Rio de Janeiro,
15. Colombia: PRIMED-Integrated Programme for the Improvement of Deteriorated Neighbourhoods, Medellin

Europe

16. Albania: Urban Land Management Programme of CoPLAN, Kamza Municipality, Tirana

Egypt

1. SETTING: GIZA (GREATER CAIRO), BULAQ AL-DAKROUR

Participatory Development Programme in Urban Areas (PDP),

Rationale: PDP (1998- 2012) is an Egyptian-German development measure implemented by the Ministry of Planning as the lead executing agency with technical assistance from GIZ,and financial assistance from the Germen Federal Ministry of Economic Cooperation and Development (BMZ). Implementation in the Governerates of Cairo, Giza and Qalyubeya is informing national policy for informal settlements, which house about 17 million people in and around Egyptian cities. Since the 1990s the Government of Egypt has been upgrading such areas with basic services and opening streets in them.

Example: Boulaq al-Dakrour with its 250,000 inhabitants is one of Greater Cairo's informal settlement on agriculture land. It consists of residential buildings 5-7 floors high and some 12 floors high, on plots of 60 to 100 sq m along long and narrow streets. Even though tenure is legal, building on agricultural land is not allowed. There are hardly any open spaces and lack of light and ventilation is an issue. PDP has been working since its inception with the inhabitants of Boulaq al-Dakrour, local NGOs and local government to assess local needs, support local initiative projects and develop participatory tools for upgrading.

An empirical study of daily life sponsored by PDP in 2008 (Shehayeb, 2008) highlighted the role of streets in generating spatial characteristics and residents' perceptions that support positive aspects of the residential environment, such as walkability, self-sufficiency in terms of daily needs, convenience and home-work proximity, safety and resident participation in the provision of public amenities and regular upkeep. For instance narrow residential streets restrict the movement of vehicles and strangers and are controlled by residents, who also take collective responsibility to clean and maintain them. They are safe for children and women and function as social spaces. The study also showed the importance of neighbourhood planning where street layout and distribution of commercial activities promotes sustainability. The Action Guide for Maximising Use Value of available streets and open spaces through a process of participatory action planning builds on these findings and advocates a street-led strategy for upgrading informal settlement in Egypt. In addition the study of user groups, traffic levels and local economies on Hemsfirst Street became the basis for targeted enumeration strategies and, eventually for forming co-operative housing and finance mechanisms.
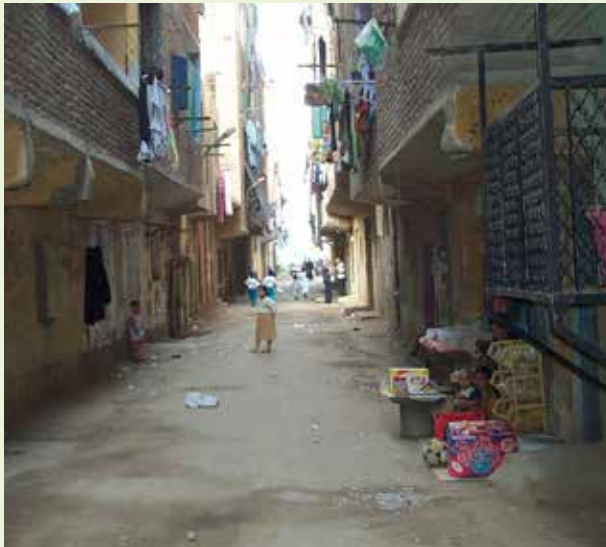
Experience:

The thorough empirical study linking the development of social and spatial patterns with streets and establishing residents' preferences in the choice of neighbourhoods has informed the development of an action guide as a training and advocacy tool. It has also resulted in a local initiative project for a particular street. In high density settlements with very little public open space, streets serve as multifunctional spaces with changing use through the day and seasons. An understanding of the dynamics of this process is essential for all stakeholders for planning layouts and streets and to enable and regulate activities in a way that maximises benefits for residents and promotes their participation.

Text:

- Shehayeb, D. & Sabry, S. (2008). "*Living in Informal Areas: Advantages and disadvantages-Shiakhat Boulaq Al-Dakrour.*" An "unpublished" background study for GIZ towards a presentation in the International Seminar "Exchanging Global and Egyptian Experiences in Dealing with Informal Areas within the Wider Urban Management Context", 14-15 October 2008 organized by GIZ, Cairo, Egypt.

 - Shehayeb, D. (2009). "Advantages of Living in Informal Areas, "in R. Kipper, M. Fischer, *Cairo's Informal Areas Between Urban Challenges and Hidden Potentials: Facts, voices, visions*. GIZ: Cairo, Egypt: pp. 35-43. http://www2.gtz.de/dokumente/bib/gtz2009-0424en-cairo-informal-areas.pdf

- PDP (2011). Maximising Use Value: Action Guide for Informal Areas, GIZ

An informal street in Boulaq El-Dakrour Giza, Egypt
Photo: David Sims
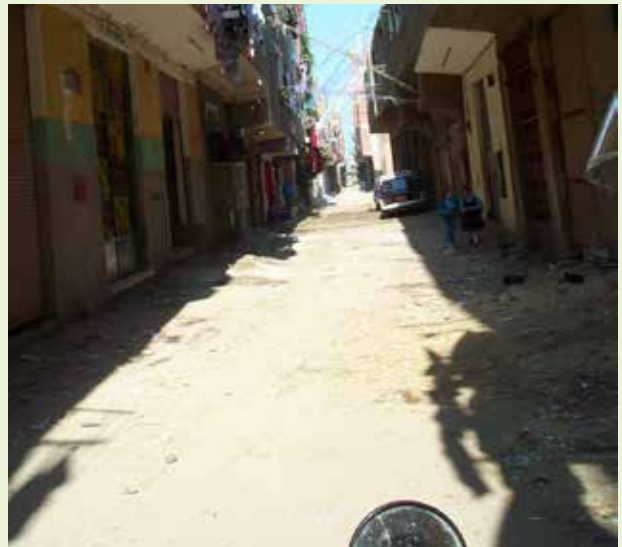
Street pattern in Boulaq El-Dakrour_Giza, Egypt
Photo: David Sims
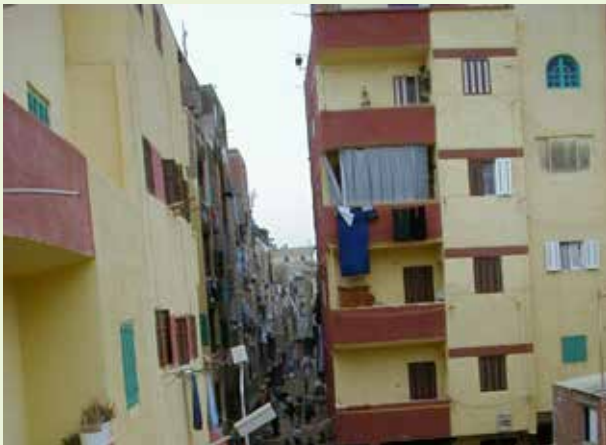
Street Improvement in Boulaq El-Dakrour Giza, Egypt
Photo: David Sims

Mixed Use in Boulaq El-Dakrour_Giza, Egypt
Photo: David Sims

Multiple use in Boulaq El-Dakrour Informal Settlement, Giza, Egypt.
Photo: David Sims
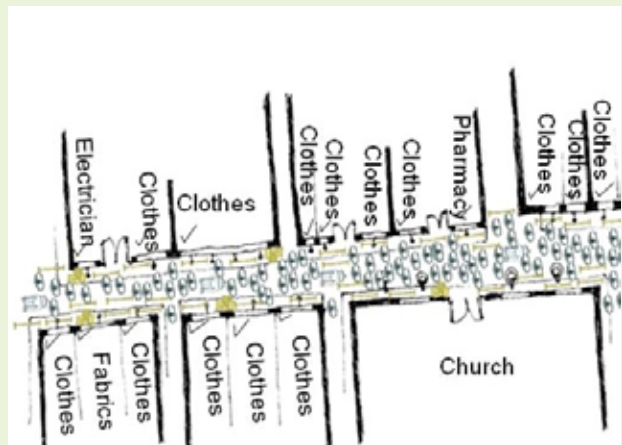
Photo: Dina K. Shahayeb and Suzan Sabry, GTZ & Shahayeb Consultants, 2008.

Guinea-Bissau

2. SETTING: GUINEA-BISSAU, BISSAU

PMBB-Neighborhood Improvement Programme

Rationale: Funded by the Netherlands government with counterpart contribution from the Government of Guinea-Bissau, the PMBB-Neighborhood Improvement Programme of Bissau, capital of Guinea-Bissau, promoted the restructuring of the urban configuration of the neighbourhoods as a way to trigger better accessibility, better flow of the rain water drainage and to promote assisted self-help housing development processes. The approach was applied as a demonstration project in 3 neighbourhoods of the city during 1989-1992 period and later replicated in 11 different neighbourhoods of the city.

Example: The project broke new grounds in the country by introducing participatory settlement planning processes, home improvement making use of self-made sun dried adobe technology, cost-recovery mechanisms through rental units and on-site sanitation solutions via double pit latrines.

Through the assisted self-help housing programme linked to the neighbourhood upgrading projects, residents were able to demolish and rebuild their houses according to the urban layout plan, freeing the streets from obstacles and opening up space for the implementation of basic infrastructure networks e.g. water supply and drainage systems.

Experience: The design of the street network took into account the existing practices, the location of poor housing subject to demolition, and the suitability for an open air rain water drainage system

Text:

- Acioly Jr., Claudio (1992). "Settlement Planning and Assisted Self-Help Housing: an approach to neighbourhood upgrading in a Sub-Saharan City." Delft: Publikatie Bureau, Delft University of Technology.

- Acioly Jr., Claudio (1993). "Planejamento Urbano, Habitação e Autoconstrução: experiências com urbanização de bairros na Guiné-Bissau." Publikatieburo, Faculty of Architecture Press, Delft University of Technology.
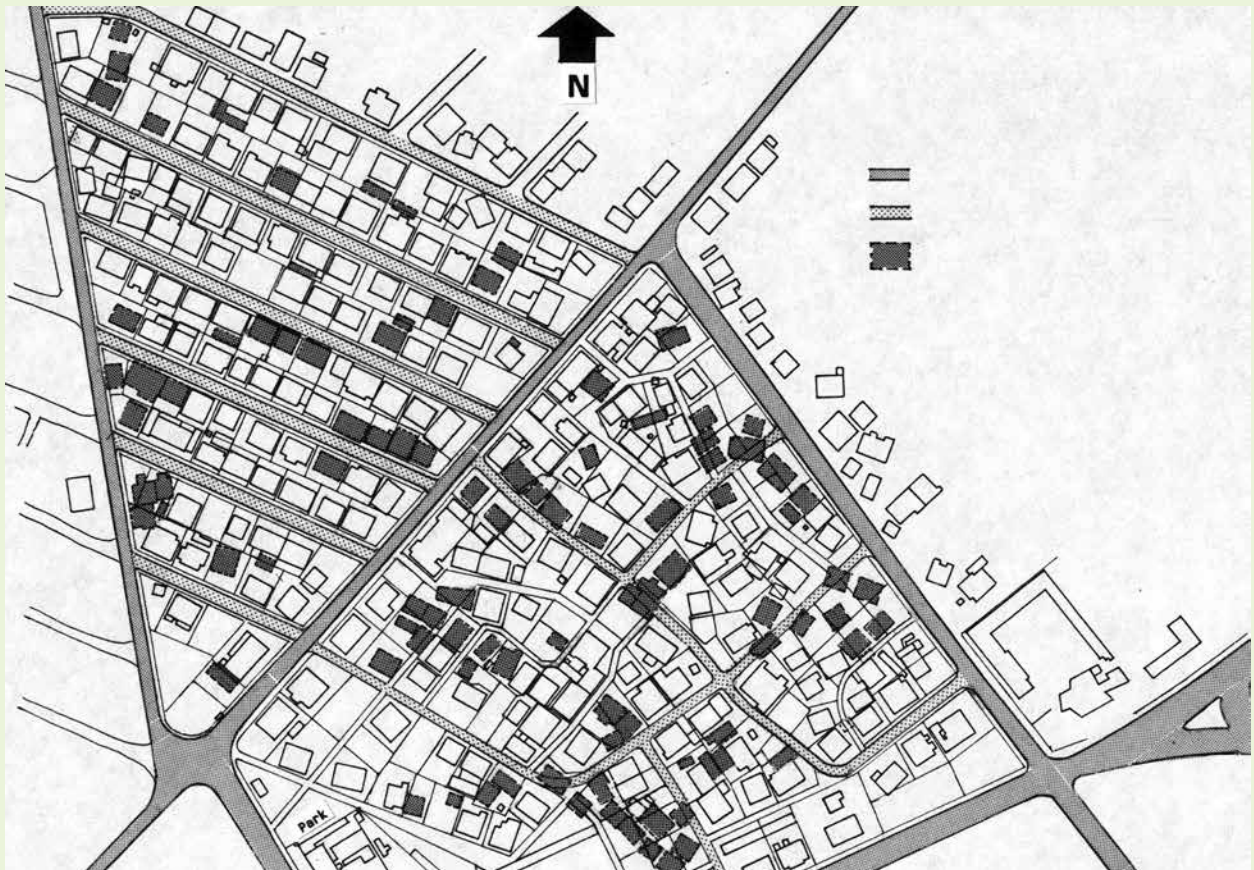
Layout Plan and Houses to be relocated, Cupilom informal settlement neighbourhood, Bissau, Guinea-Bissau
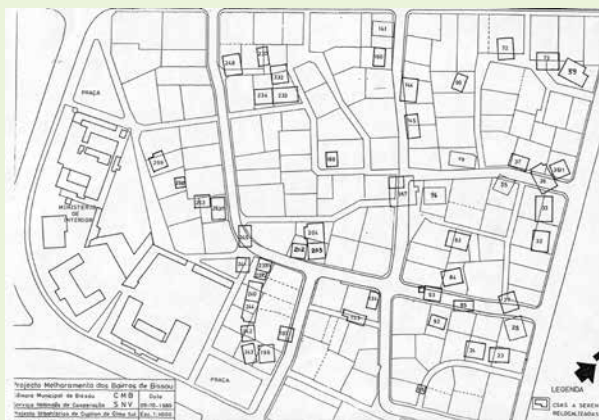

Cupilom Before Street Making

Cupilom after street making

New street layout in Cupilom, showing houses to be demolished and rebuilt.

New Street Layout in Cupilon Informal Settlement, Bissau, Guinea-Bissau

Zambia

Lusaka Sites and Services and Squatter Upgrading Project

Rationale: As early as 1973, the National Housing Authority and Lusaka city council started the design of a project to upgrade the informal settlements of the city. The project was part of a loan request to the World Bank. The project was comprised of several components: squatter upgrading, sites and services, building materials loans, primary (off site) infrastructure, community facilities, technical assistance and land acquisition. The critical housing backlog in Lusaka was one of the greatest motives to design and implement the project. It intended to provide services and housing improvement opportunities to circa 18,000 houses in Lusaka's three largest squatter complexes with a population of 130,000 inhabitants.

Example: The upgrading of these settlements was combined with a sites & services area in order to allow for the resettlement of households whose houses had to be demolished for the implementation of the upgrading plan. Provision of land tenure via land lease on upgraded, overspill and site & services plots. The project provided serviced sites in overspill areas adjacent to the squatter settlements (8,000 plots) and in new areas (4,400 plots). The planning, design and implementation of the new street networks was carried out in a very innovative form. Planning sessions in the project office involved the technical cadre and community leaders as well as residents. Before implementation, 'road commissions' were setup and with the technical cadre circulated within the settlements to decide which street to prioritise and which houses had to be demolished. Residents participated in the decision and were responsible for demolishing their houses. Guidelines were developed and a lot effort was done on project communication to inform well the residents.

Experience: Decision-making on the routes of the main streets and the overall urban layout of the settlements involved residents, road planning groups and on-site visits and reality checks to assure the best options were taken. The success of the project generated a number of subsequent initiatives and multi-year programmes to improve the life of inhabitants of these settlements.

Text:

- Pasteur, David (1979). "The Management of Squatter Upgrading." United Kingdom: Saxon House.

- Martim, Richard (1983). "Upgrading" in *People Poverty and Shelter. Problems of self-help housing in the third world*, R. J. Skinner and M. J. Rodell. London: Methuen & Co. Ltd.

Planned and unplanned urban configurations in Lusaka, Zambia
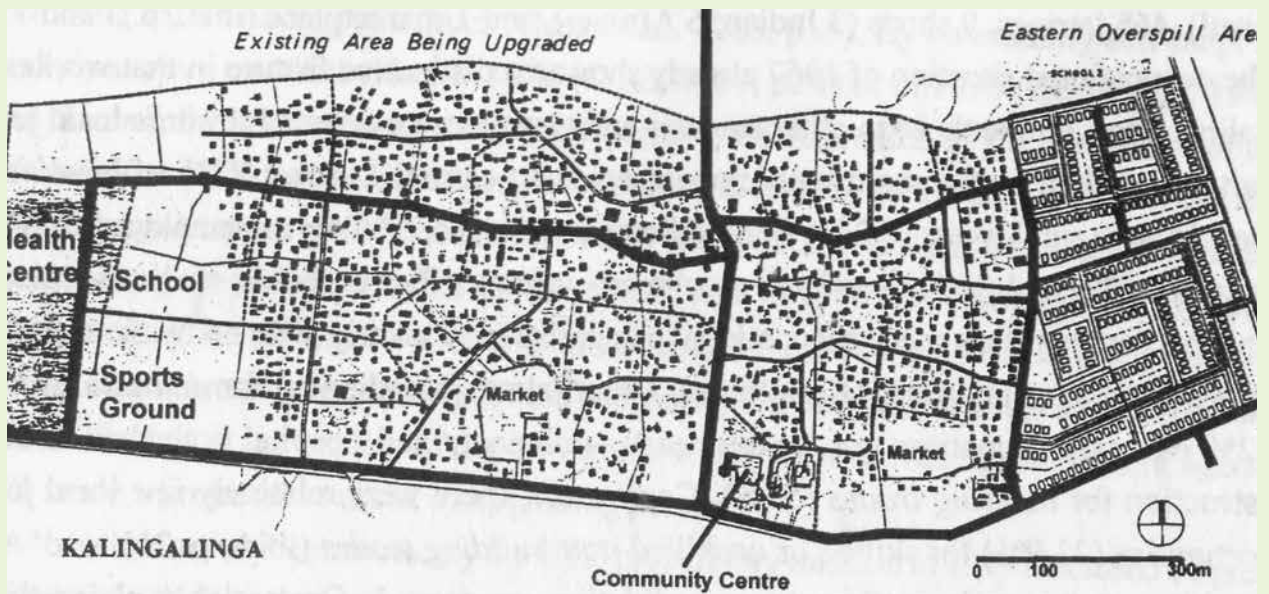
Kalingalinga informal settlement and sites & services resettlement area, Lusaka. Source: GRZ Survey Department and Goethert/Oestereich, 1987.

Road Planning Group discussing proposals, Lusaka, Zambia.
Photo © Richard Martim (1983).

Residents demolishing their houses for making room for streets, Lusaka, Zambia. Photo © Richard Martim (1983).

Tanzania

4. SETTING: TANZANIA, DAR ES SALAAM

Community Infrastructure Upgrading Programme (CIUP) and Participatory citywide upgrading of unplanned and poorly serviced settlements

Rationale: Dar es Salaam is Tanzania's largest industrial, commercial and public administration center where 10% of the country's total population lives. It grows 4.3% per year. The city is responsible for 40% of the country's GDP and it contributes to 80% of the country's revenue. It has nearly 4 million inhabitants. Critical problems identified by the municipality are: growing unplanned settlements where 70% of the population lives, lack of roads between arterial roads and poor accessibility, flooding and inadequate drainage system, a growing informal sector and low level of revenues from property tax. The lack of connecting roads was considered critical for the municipality. An infrastructure development plan of USD 375 million identified roads and streets as top priorities next to community infrastructure upgrading-CIUP. The World Bank finances CIUP and focuses on the main arteries where pavement, drainage and street lighting are implemented.

Example: UN-Habitat assists the Municipality of Dar Es Salaam in preparing a participatory citywide upgrading of unplanned and poorly serviced settlements, co-sponsored by the Cities Alliance. The process started in 2005. GIS maps were produced to identify all settlements that should be subject to upgrading. Consultative workshops were carried out, working groups were established and priorities were set. An action plan document was formulated that prioritised land, basic services and housing with the aim of upgrading 50% of all unplanned and unserviced settlements.

The approach was to focus on the restructuring of each neighbourhood where CIUP intervened so that a concentration of interventions would be achieved. CIUP would create the main streets while the action plan would promote reblocking and land regularisation with occupancy certificates.

Experience: The initiative links participatory slum upgrading with the citywide improvement of arterial roads, thereby improving linkages as well as enabling internal improvements in unplanned and underserviced areas through street improvements, reblocking and land regularisation.

Text:

- UN-HABITAT (2010). *Citywide Action Plan for Upgrading Unplanned and Unserviced Settlements in Dar es Salaam.* Nairobi: UN-HABITAT.

Slum, Dar es Salaam

Aerial view of informal neighbourhood, Dar es Salaam

An inner neighborhood access street showing the difficulties for pedestrians

Informal neighbourhood, Mazese, Dar es Salaam

An inner neighborhood access street showing the difficulties for pedestrians

An inner neighborhood street being paved by CIUP

Pakistan

Orangi Pilot Project (OPP)

Rationale: 60% of Karachi's 12 million people live in "katchi abadis," which are informal settlements on government land subdivided by illegal developers. Orangi is the largest "katchi abadi" established in 1965 and with more than 1.2 million inhabitants. It was listed for regularisation in the 1980s but the critical problem of inadequate sanitation and water supply was not solved. In 1980 the NGO OPP was established with membership from local residents and professionals and started to address priorities set by residents e.g. lack of sanitation, poor health conditions. Residents were aware of these problems but did not have the means to afford conventional sewerage solutions nor the technical skills and organisational capacity to develop low-cost and appropriate solutions. In 1988 OPP-RTI (Research and Training Institute) was set up to provide training, research and technical support for housing, sanitation and education.

Example: OPP played a facilitating role in organizing meetings per street involving 20-25 adjacent houses. Residents living in a contiguous lane or street reached agreements and committed their labour and savings to improve the infrastructure networks, particularly sanitation, drainage and water supply. The street was not only the basic unit for community organisation and physical identity but also the departing point for mapping neighborhoods, execution of work and subsequent maintenance.

RTI provides technical assistance and training to local residents to build internal sewage networks, which are connected with the external network built by the Karachi Municipal Corporation. Because of the inter-connectivity of the network and the streets, if one group of residents in a street failed to accomplish their part of the network, the entire system would halt. OPP had to boost solidarity and commitment amongst residents but also convinced people and government about the potential of "component-sharing" between state and residents. A micro-credit programme of Orangi Charitable Trust enables families to pay for sewerage.

Using low cost technology and the natural drainage pattern to lay sewerage line, the entire internal sewerage of Orangi cost US$1.4 mill, as against government. estimate of 10.5 mill. Starting with few neighborhoods, OPP has scaled up to cover 6600 of the 7615 streets in Orangi and has been replicated in 279 katchi abadis of Karachi and 13 other cities, in which OPP-RTI is supporting CBOs and NGOs to develop partnerships with local government.

Experience:

- This example demonstrates the role of streets as the organizing principle for community mobilisation for building, financing and maintaining sewerage lines and on-plot latrines, and for developing and executing low cost technical solutions for sewerage and drainage.

- The main roads were used for laying out primary and secondary lines by local government, to which the community financed and built internal network along smaller streets and lanes was connected. The component-sharing concept clearly shows that where government partners with the people, sustainable development can be managed through local resources.

- The phased and incremental approach allowed learning and capacity building and mobilisation of funds.

Text:

- Hasan, Arif (2006). "Orangi Pilot Project: the expansion of work beyond Orangi and the mapping of informal settlements and infrastructure." Environment & Urbanisation, 18(2): 451–480.

- Gateway to Urban Planning and Management in Asia The Orangi Pilot Project in Karachi Pakistan, The Best Practices Initiatives Human Settlements in Asia http://www.hsd.ait.ac.th/bestprac/orangi.htm

Orangi town map showing streets, sewerage and drainage system

A recently completed lane sewer in Gulshan-e-Zia residential area, Orangi. Photo: Orangi Pilot Project.

Construction of a self-help lane sewer in Gulshan-e-Zia. Street scene: during laying of sewerage pipe on self-help (background: OPP-RTI technical advisor supervises). Photo: Orangi Pilot Project.

Pakistan

Regularisation of Ghousia Colony as part of the Katchi Abadi (squatter settlement) Regularisation Programme of the Provincial Government of Sindh in Karachi

Rationale: Katchi Abadi Regularisation in Karachi: Katchi abadis or squatter settlements accommodate approximately 6 million people, a little under half of Karachi's inhabitants. Katchi Abadi Improvement and Regularisation Programme was started in 1978 under Directorate of Katchi Abadis and Evaluation (DKAE) of Karachi Municipal Corporation to formalise settlements on government land by granting 99 year leases of occupied plots and upgrading services, based on a regularisation plan and payment of specified charges by plot holders. The Sindh Katchi Abadi Authority (SKAA) was created in 1987 to facilitate the process under the Sindh Katchi-Abadis Regularisation Act. The programme was partly supported by the World Bank and Asian Development Bank in the initial stages.

Ghousia Colony: Ghousia Colony is a typical inner city katchi abadi, which originated in 1947. It occupies an area of 18.5 acres with about 1300 plots. The average plot size is 48 square yards, ranging between 20 and 100 square yards. The population was about 10,000 in 2000 and 95% of the households were owners.

Example - Upgrading of Ghousia Colony: Ghousia Colony was listed for regularisation in 1982. A regularisation plan was prepared by DKAE according to its policy of keeping demolitions to a minimum. Even so, widening two major roads to 30 feet required the demolition of 200 houses and their relocation. 30 others were partly affected. All the remaining streets and lanes also had to be widened in to the minimum standard width of 8 to10 feet, specified for katchi abadi regularisation. After initial objections to the plan, people actually cooperated with DKAE in conducting the survey and demarcating new street boundaries. They voluntarily gave up portions of their plot and demolished and reconstructed the affected portions. Relocations were also carried out without any resistance.

An evaluation study (Richartz, 1988) shows that people saw the regularisation plan as a means of getting secure tenure and services, for which they had no hopes till the settlement's recognition. They also realised that two wide main roads meant better accessibility and wider inner streets would lead to a better environment and higher land values. By 2002 no more than 75% households had obtained lease title of their plot. The rest were not interested in the lease as they did not want to sell or mortgage the property. The residents have private water connections, piped sewerage, electricity and gas connections. Street lights are present on the main roads. There is substantial investment on plots, but no encroachment of the street surfaces, even though upper floors are overhanging. All construction is done without any building permission. Peripheral roads are in workable condition and provide clear thoroughfare for city traffic and opportunities for income generation for local residents through commercial use of plots and vending. Internal roads and streets are paved but require renovation and improvement. Similarly several of the back-lanes are paved or tiled. In spite of a short-lived NGO initiative for garbage management, waste is dumped on streets.

Experience: The street-led process of regularisation of Ghousia Colony shows that planned street making and improvement has resulted in shelter consolidation and opportunities for income generation, in spite of some loss of plot area. The voluntary cutting of plots is exceptional and triggered by the expectation of higher security of tenure and land values. The example also shows that relocation must go hand in hand with slum upgrading and that road widening as part of the process can benefit both slum dwellers and the city. In people's perception tenure security is related with the planned layout of streets and plots, but formal titles are useful for property transactions. Post upgrading maintenance of streets is an unresolved issue.

Text:

- Richartz, Rob (1988). *Improvement of an Inner-City Basti of Karachi: the Second Evaluation Survey in Ghousia Colony, Amsterdam*: Free University, 132 pp. (Urban Research Working Papers, No. 17) Sindh Katchi Abadis Authority.

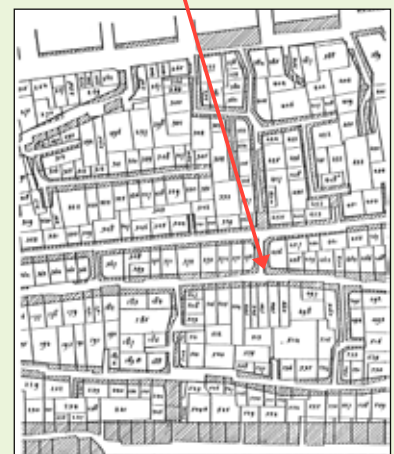- www.urckarachi.org/SKAA%20Presentation.pps (accessed on 3/3/2012)

- Ghousia Colony Case study. www.globenet.org/preceup/pages/ang/chapitre/capitali/cas/pakist_b.htm (accessed on 3/3/2012)

Internal Streets

GHOUSIA COLONY

PRISON

30 peripheral road with mixed use

Part layout showing road cuttings

Photos: Saeeduddin Ahmed

7. SETTING: INDIA, MUMBAI, DHARAVI

Dharavi Redevelopment Project (DRP)

Rationale: 65% of Mumbai's 12.4 million population lives in slums, of which Dharavi is the largest with anything between 700,000 and a million residents, more than 5000 businesses and industries, several markets, schools, dispensaries and thousands of home based economic activities, all in an area of about 212 hectares. In 2004 the Government invited private developers through open competitive bidding to redevelop Dharavi, in accordance with the Government's Dharavi Redevelopment Project (DRP) to be implemented by the Slum Rehabilitation Authority (SRA). The project would be self financing, with the sale of 35% land for profitable uses cross subsidizing high rise apartments for all eligible residents on the remaining land. A higher Floor Space Index was expected to be an incentive for developers to participate. The project cost was estimated as US$ 2.2 billion with net profits amounting to about US$ 1.2 billion.

Example: The main aim of the DRP is to improve the living conditions of the residents of Dharavi, who live in 85 nagars or neighborhoods, and integrate them with the city's infrastructure in a way that attracts private investment. The DRP proposes the division of the slum into five sectors, defined by the existing main roads. It also proposes opening new roads to improve accessibility. Even though the implementation of the DRP is delayed, Society for Promotion of Area Resource Centres (SPARC) and Kamla Raheja Vidyanidhi Institute of Architecture (KRIVA), who have long experience of working with CBOs in Dharavi, have developed a detailed plan for Sector 4 as an illustration of an alternative redevelopment approach.

The plan is anchored on the improvement of the street network for greater accessibility, upgrading of existing open spaces and organization of amenities around them as points of departure for settlement development. The street network defines manageable clusters that can take decisions about their own redevelopment, making it possible for different models to be adopted. Alternative scenarios have were drawn up and implications discussed with communities to check the practicability of the approach.

Proposals for the street network followed a detailed analysis of existing density, floor space index, livelihood, housing typology and land ownership patterns. The existing pedestrian movement and neighbourhood boundaries determined a hierarchy of roads in accordance with the development control rules. Primary roads of nearly 30 mts. are the major vehicular transport roads. Secondary vehicular streets of 18 mts are for smaller transport like hand carts, cars and rickshaws, but not heavy vehicles; Major pedestrian/partly vehicular roads are proposed to be 12 m in width. The road network would be developed in a phases along with the redevelopment of clusters.

Experience: This plan illustrates a street-led approach in which strengthening the existing street network and public spaces and developing a hierarchy of primary and secondary roads and pedestrian paths serves as a grid for redevelopment. Residents of each cluster can then select a suitable redevelopment model based on their collective preference. The streets and open spaces are according to the requirements of the development control regulations and will be developed in phases corresponding with the redevelopment of clusters. The example shows how the existing urban configuration can determine the upgrading approach in a way that can incrementally achieve standards of development similar to the rest of the city.

Text:

- Slum Rehabilitation Authority (2004). Dharavi Redevelopment Plan, Govt of Maharashtra, Housing and Special Assistance Department, www.dharavi.org.

- Society for Promotion of Area Resource Centres (SPARC) and Kamala Raheja Vidyanidhi Institute of Architecture (KRIVA) (2010). "Reinterpreting, Reimagining, Redeveloping Dharavi," Mumbai.

- ICICI Property Services (2009). "Dharavi a Realty Story 2025." July 20, 2009, download from Facebook.

- Royal University College of Fine Arts (2008). "Dharavi. Documenting Informalities." Stockholm: Royal University College of Fine Arts.

Slums, Dharavi, Mumbai, India. Source: SDI, www.sdi.org

Slum, street rail pipe, Mumbai, India

Street layout (Nagars) in Dharavi, Mumbai, showing the street network and pathways for circulation. Source: Dharavi, Documenting Informalities. The Royal University College of Fine Arts, 2008.

India

Citywide Slum Upgrading Project (CSUP), Agra

Rationale: Agra is a city with world heritage monuments and other historic buildings. It also has 423 slums and low-income settlements that house 0.8 million people or about 40% of the city. CSUP is being implemented by Agra Municipal Corporation (ANN) in partnership with the NGO Centre for Urban and Regional Excellence (CURE) since 2005 with financial support of Cities Alliance and USAID and technical inputs from the Water and Sanitation Programme (WSP) of The World Bank, National Institute of Urban Affairs (NIUA), New Delhi and Water Trust UK. CSUP was shortlisted for the UN-Habitat Best Practices Award in 2008.

Example: CSUP aims at implementing slum upgrading on a citywide scale by engaging local stakeholders in a bottom-up planning and implementation process. Present administrative and capacity constraints are addressed through institutional reforms and capacity building.

The current Phase 1 with 4 slums and 1800 households will be scaled up in the next two phases to include all the 423 slums, for which funding from 2 national programmes is already available. Phase 1 slums have been prioritised based on poverty, infrastructure deficiency and local economic development potential of the city Ward in which they are located. In Kutchpura for instance upgrading includes basic services for inhabitants as well as a heritage walk, taking advantage of monuments in the settlement to link slum streets with the city, generate local employment in tourism and improve the slum's image. This has also generated a partnership between the CBO, tourism industry and ANN. This phase has provided opportunities for building local capacity to undertake participatory slum upgrading and appreciate the complexities of scaling up.
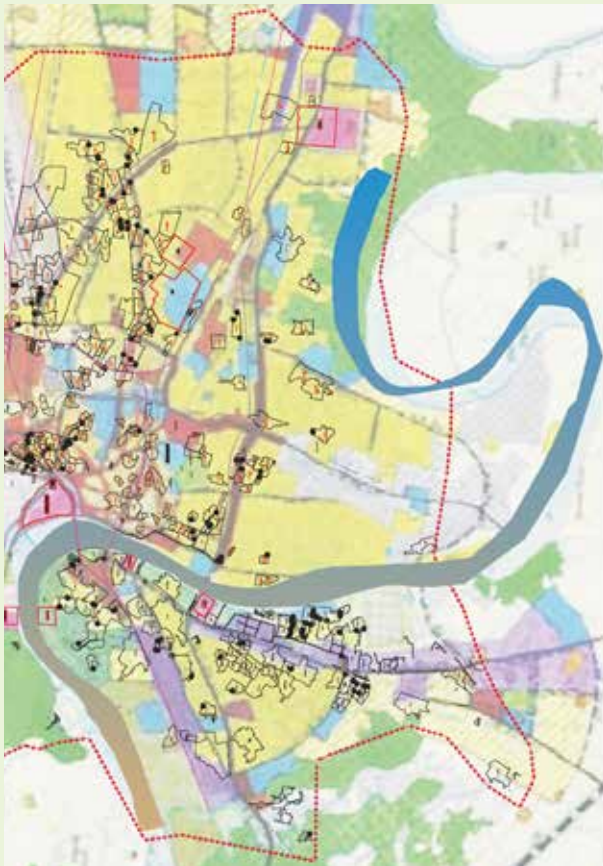
CURE has mapped all city slums with spatial boundaries and has digitised these on a city base map using GIS. Total Station Surveys of each settlement integrated with the GIS provide information on slum topography, streets, service networks, land uses, housing typologies, local heritage resources etc. Trunk infrastructure maps are overlaid on slum maps to determine connectivity solutions. Geo-spatial and socio-economic data is shared and verified with local communities and used as a base for participatory planning in slums and municipal wards.

Housing typology, land tenure and tenability status studies have helped understand land-based challenges of slums. Slum development models proposed for CSUP are (1) in-situ upgrading with incremental housing through self-investment, especially where people are the owners of the properties; (2) redevelopment with land pooling arrangements for areas that are congested and where plots are too small; and (3) resettlement in new housing where slums are untenable or on infrastructure development corridors.

Experience: A phased programme has provided opportunities for learning and building on success. Good geo-spatial and socio-economic data has helped participatory planning and integration of slum streets and services with the city. Linking up monuments in the slum through enhancing the street pattern is an innovative approach to upgrading in a heritage city.

Text:

- Khosla, Renu (2011). "Inclusive Neighbourhoods Make Inclusive Cities: Design and Planning of Slums in Agra," National Seminar on Design and Planning for Sustainable Habitat, July 15-16, New Delhi, IDRC and Government of India, Ministry of Housing and Urban Poverty Alleviation.

- "Reforming Agra by Re-imagining through Slum Up-gradation" http://www.indiaurbanportal.in/Bestpractices/Bestpractices103/Bestpractices103589.PDF accessed on 5/2/2012.

- "A Citywide Slum Upgrading Programme and CDS in Agra, India" http://www.citiesalliance.org/ca/node/2696 accessed on 5/2/2012.

Slums in Agra City Master Plan
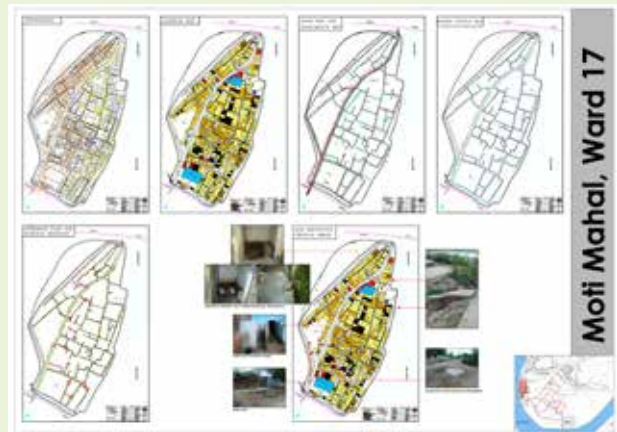
Layers: Total station survey of slum

Prioritisation of streets & services

Total station survey plan

Agra slum. Photo: Regina Busse, Flickr Creative Commons

Street making

Main square

Maps and Photos: CURE

63

9. SETTING: INDIA, 42 SECONDARY TOWNS IN ANDHRA PRADESH STATE

Andhra Pradesh Urban Services for the Poor (APUSP)

Rationale: The APUSP program was implemented by the Department of Municipal Administration (DMA) of the Indian state of Andhra Pradesh (AP) between 2000 and 2009 with a grant of GBP 94.4 million from DFID. The project was implemented in 42 secondary towns with a combined population of about 16 million, of which 30% were below the official poverty line. APUSP was aimed at sustainable poverty reduction through slum upgrading, municipal reforms to undertake and sustain poverty reduction, and strengthening civil society to invigorate the interaction between poor people and the municipality and to stimulate policies in favour of the poor. The Municipal Action Plan for Poverty Reduction (MAPP) prepared by each municipality with participation from town stakeholders forms the basis for funding. A state level programme unit in DMA coordinated the programme and provided support to participating municipalities.

Example: Municipalities undertook strategic reforms and capacity building to improve service delivery to the poor; earmark funds in the municipal budget for implementing and maintaining slum infrastructure (including connections to city systems); plan in consultation with local stakeholders; and work in partnership with slum dwellers, government and civil society organisations for poverty reduction and tenure regularisation. This includes working with and strengthening the existing representative organizations of poor women, consisting of Resident Community Volunteers (RCV), elected by 20-30 slum families in a street/cluster to represent them in Neighborhood Committees (NHC), which are then federated into the Community Development Society (CDS) at city level.

At city level the MAPP defines reforms; priority slums for upgrading and social and economic programmes for poverty reduction. The preparation of MAPP is a cyclical process, which begins with a basic action plan with a few performance improvement measures and a few slums, in consideration of limited municipal capacity and lack of data. It evolves to a much more complex and comprehensive planning process with strategic institutional and financial reforms and citywide slum upgrading linked to a Critical Infrastructure Plan (including roads). The prioritisation of slums for phased implementation is based on poverty and infrastructure deficiency ranking by a multi-stakeholder working group with representation from CDS, municipal engineers and elected councillors and NGOs. Slums are mapped on the city landuse plan. Slums in risk areas and in the pathway of trunk infrastructure are indicated.

The NHC leads the process of micro-planning in each prioritised settlement, with technical assistance from a multi-disciplinary municipal team. RCVs take the lead in preparing simple street maps, indicating the status of infrastructure and future requirements. These are consolidated into a slum level micro-plan by the NHC, which forms the basis for technical proposals, including road widening and paving, by municipal engineers, endorsed by the NHC. The NHC is involved in monitoring and quality control of works and, in some cities, in taking up community contracts for building roads and drains. Some slum women's savings groups have municipal contracts for garbage removal using tempos and tri-cycles on the newly constructed streets.

Experience: The MAPP was an effective participatory tool for citywide prioritisation of slums for phased implementation, their connections with city systems and linking reforms with sustained poverty reduction. The street-based micro-planning in slums ensured demand based service delivery and opening streets. The MAPP has been replicated in all 136 cities in AP and 56 cities in two other states. The main drawbacks were that in some towns slum infrastructure became better than town infrastructure and raised questions from tax payers on grants and earmarking of funds for slums; secondly, several slums were excluded because of land issues or not being officially recognised. These were invariably the poorest and most deficient.

Text:

- Government of Andhra Pradesh (2004). MAPP Guidelines, Directorate of Municipal Administration

- Banerjee, B (2002). "Mainstreaming the urban poor in Andhra Pradesh, India" in Westendorff, David and Deborah Eade, *Development and Cities*, Oxfam GB, pp 204-225.

- Banerjee, B (2006). "Giving Voice to the Poor in Municipal Planning in Andhra Pradesh" in Rao, PSN, *Urban Governance and Management : Indian Initiatives*, 2006, IIPA, New Delhi.pp.213-235.

Street before and after upgrading. Photo: Banashree Banerjee.

Different slums, different priorities: 1. High density squatter area between sea and river, Kakinada
2. Illegal subdivision, Qutbullapur. Photo: Banashree Banerjee.

Excluded slum on disputed land. Photo: Banashree Banerjee.

Road and drain making with community contracting. Photo: Banashree Banerjee.

10. SETTING: 4 CITIES IN INDIA: AHMEDABAD, INDORE, VADODARA, BHOPAL.

Slum Networking Project (SNP)

Rationale: Slum networking is a method for rejuvenation of the entire city using slums as an urban net and not as isolated islands. The spatial spread of slums over a city together with contiguity between slum settlements gives an opportunity to strengthen the city level infrastructure networks. There is a close correlation between slum locations and the natural drainage path of a city. This helps to build up low cost service trunks, particularly for gravity based systems of sewerage and storm drainage, together with environmental improvements such as creation of fresh water bodies, cleaning up of polluted rivers, development of green pedestrian spines and restoration of waterfront structures. The service infrastructure is simplified and modified so that individual services (instead of shared facilities) can be offered to slum families at low costs. At the same time the maintenance burden is reduced and can be shifted from the local government to individual householders. Slum networking was pioneered in the city of Indore, India (1.4 million inhabitants). Its success led to replications in 4 Indian cities: Indore, Ahmedabad, Vadodara and Bhopal.

Example of SNP Ahmedabad: City Population: 5.5 million; Urban density: 18,400 persons/Km Sq; Slum population: 1.5 million. The objective of SNP Ahmedabad is to provide a package of physical improvements (individual water supply, individual sewerage connections, individual toilets, storm water disposal, paved roads, street lighting and solid waste management), and community development initiatives (assistance in the formation of community based organizations, increasing access to primary health care and education, support for income-generating activities, etc.) to slum households. The program is implemented through a partnership between Ahmedabad Municipal Corporation (AMC), slum dwellers, community based organisations, NGOs, the private sector and a community based financial institution (SEWA Bank). The premise is that services should be provided on demand expressed through contribution of a certain proportion (approximately 13%) of the cost of infrastructure and services provided. The assurance of AMC for not evicting residents for a period of 10 years following the implementation of the project provides a strong incentive for slum dwellers to invest in improving their living conditions. The NGOs are responsible for community mobilisation, capacity building of CBOs and implementation of social, livelihood and health programmes. SEWA Bank offers housing microfinance products to enable the beneficiaries to save the contribution amount – an overwhelming majority of participants are able to save the required amount, but loans are also available for those who are unable to save. During the pilot phase, the private sector (Arvind Mills) contributed almost one third of the total costs and participated in the implementation of the project. Now, the role of the private sector is confined to financial contribution only.

Experience: The design of SNP incorporates several infrastructure, financial and institutional innovations. The Ahmedabad example provides lessons in institutional design and the partnership approach to basic service provision, even though the arrangement was difficult to sustain. The amount of contribution required was low enough for beneficiaries to save and not require loans. The presence of a community based financial institution, SEWA Bank, was critical in the success of the program since it was able to provide a savings facility to slum dwellers. While the program has faced constraints in scaling up (only 10,000 households in 45 slums in 10 years), it has achieved a certain degree of success in a sector where improvements are extremely hard to bring about. The linkages between slums and city through interventions related to sewerage in slums, which then lead to cleaner of water bodies and the possibility of waterfront development, benefit all citizens. A key aspect of the slum networking approach is that it does not focus exclusively on the slum area but integrates slums and wealthier zones of the city to provide better infrastructure and improved quality of life for both. The premise is that by providing decent roads, streets and pathways within and on the perimeter of nearby urban areas, it becomes possible to complete linkages within the city's road and street network. The high quality of street paving provided multi-use open spaces and all weather mobility, much appreciated by residents.

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SNP Ahmedabad: Maladi Nagar. Photos: Ahmedabad Municipal Corporation

Before

After

Slums, Indore Slum Networking Road

Slums, Indore Slum Networking, street making

Indonesia

Kampung Improvement Program (KIP), Neighbourhood Upgrading and Shelter Sector Project (NUSSP)

Rationale: Since its inception with two cities in 1969, KIP has spread to 800 cities in Indonesia to benefit more than 30 million people. Between 1974 and 1988 World Bank/UNDP project assistance of US$ 168.9 million was used at a low cost of US$ 118 per person in Jakarta and US$28 in smaller cities. In 1996 it was declared as a national programme and linked with Integrated Urban Infrastructure Development Programme (IUIDP). Between 2005 and 2009 ADB loan of US$ 126 million for NUSSP.

Example: Kampungs constitute up to 60% of the population of Indonesian cities and consist of informally developed layouts in or adjacent to the city. A kampong typically has low-rise dwellings in a variety of materials – usually a mix of brick and timber walls and tile and galvanized iron roofs. Between the houses are pathways of varying sizes (larger ones used by vendors and motor bikes). 55% plots are < 45 sq m and 31% > 100 Sq m. The average density in kampungs in Jakarta is 600 people per hectare.

The main feature of KIP and NUSSP is the improvement of the quality of life through improved access to urban infrastructure – water supply, sanitation, solid waste collection and drainage and road networks. Concrete pathways (mostly elevated) are considered as the central feature of KIP. They have improved mobility and safety by providing all weather access with lighting and have provided space for drainage and water supply networks. An evaluation in the mid 1990s found that kampungs and surrounding areas benefited from improved infrastructure in terms of shelter consolidation (with or without legal tenure) and better health indicators. However, road construction had caused water logging in several places, in the absence of linkages with city drainage. Later KIP/NUSSP was made a component of IUIDP and integrated with main roads and flood protection and drainage systems as part of a city infrastructure and spatial plan. Starting with site to site approach in the 1970s, centrally managed by a project unit, the current programme is decentralised at local government level with extensive community participation. Up to 30% of municipal budgets are used for improving and maintaining services in kampungs. Although there are variations, as can be expected in such a large programme, in many cities beneficiary communities develop neighbourhood upgrading plans, which also consider relocation necessitated by realignment of roads or construction of drainage works. Road construction contracts have created employment for 62,000 unskilled workers for 90 days. In addition, community members participate in the construction of roads and drains as their in-kind contribution. This involvement has led to community willingness to maintain streets and common facilities.

Experience: KIP has evolved from a site to site incremental approach to an integrated citywide approach in which streets have played a central role in improving mobility, safety, quality of life, stimulating private investment in housing and generating employment. The long term and large scale programme has allowed learning and capacity building. The evolution of the programme also follows political and functional decentralisation in Indonesia as well as the concern for community participation. The strategic focus has been on basic services improvement at low cost within kampungs and making them work with citywide linkages. The World Bank project evaluation recognised that "road and footpath improvement increases the mobility of kampung inhabitants both socially and economically" and justified 88% of project funding going towards physical development.

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Kampungs in Jakarta. Photo: Marc Jansen

Street before upgrading. Photo: Marc Jansen

Street after upgrading. Photo: Marc Jansen

a. school
b. health center
c. mosque

0   50m
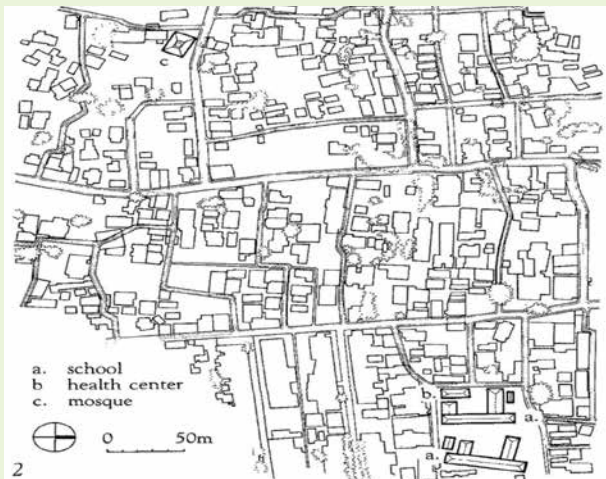
Street pattern. Source: Kampung Improvement Project

Street construction by residents. Photo: Asian Development Bank

Shelter improvement by owners. Photo: Marc Jansen

Community managed infrastructure. Photo: Marc Jansen

Thailand

12. SETTING: THAILAND, 200 CITIES

Baan Mankong

Rationale: *Baan Mankong* ("secure housing") programme, a national slum and squatter settlement upgrading programme launched in 2003 by the Government of Thailand, operates not only in large cities but also in most of Thailand's smaller urban centres. The program channels government funds, in the form of infrastructure subsidies and soft housing and land loans, directly to poor communities for planning and upgrading their housing, infrastructure, living environments and land tenure security, and administrative support grants to local supporting institutions. The programme covers 300,000 urban poor households, in 2,000 poor communities in 200 Thai cities and towns. Baan Mankong is implemented by the *Community Organizations Development Institute* (CODI), an autonomous public organization under the Ministry of Social Development and Human Security with the mission of bringing poor communities and cities together to forge citywide solutions to problems of housing, land and basic services in Thai cities.

Example: Poor communities work in close collaboration with their local governments, professionals, universities, temples and NGOs to survey all the communities in their cites and then plan an upgrading process which attempts to improve all the communities in that city over the next few years. Once these citywide plans are finalised and upgrading projects are selected, CODI channels the infrastructure subsidies and housing loans directly to the communities. Pilot projects play an important catalytic role in building community confidence and in forging partnerships, which are instrumental in scaling up to city level.

Households in illegal settlements can get legal land tenure in several ways. They can negotiate to buy the private land they occupy (with soft loans from CODI), to get a long-term community lease where the land is publicly-owned, to relocate to another piece of land provided by the same agency on whose land they are now squatting, or to redevelop their housing on a portion of the land they occupy now and return the rest to the land owner, in exchange for secure tenure on their portion. Four main strategies are used: upgrading by providing basic infrastructure; re-blocking by realigning the layout to install sewers, drains, walkways and roads, while moving as few houses as possible; land sharing by returning a part of the land to the original owner; and reconstruction with long term lease or outright purchase. Relocation maybe nearby or to more distant locations.

Local governments are increasingly adding value to projects by using their own budgets to bring access roads and other services into upgraded or relocated communities. The commitment of the central government to decentralize the solution finding process to cities and communities is a major breakthrough in a country which was used to centralised decision-making.

Experience: By creating space for poor communities, municipalities, professionals and NGOs to look together at all the housing problems in their city, Baan Mankong is bringing about an important change in how the issue of low-income housing is dealt with: no longer as an ad-hoc welfare process, but as an important structural issue which relates to the whole city and which can be resolved. The community upgrading program is helping to create local partnerships which can integrate poor community housing needs into the larger city's development and resolve future housing problems as a matter of course. Streets play an important part in this by linking settlements with the city and by improving the quality of life for poor communities.

Text:

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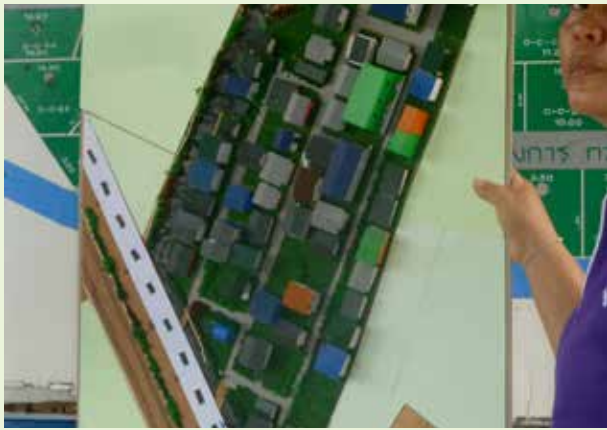
Chareonchai NImit Mai7. Photo © Adrienne Acioly.

Chareonchai NImit Mai8. Photo © Adrienne Acioly.

Chareonchai NImit Mai9. Photo © Adrienne Acioly.

Chareonchai NImit Mai12. Photo © Adrienne Acioly.

Hua Hin community effect of high speed train
Photo © Adrienne Acioly.

Hua HIn participatory mapping DPU community leaders2.
Photo © Adrienne Acioly.

13. SETTING: RIO DE JANEIRO, FAVELA JACAREZINHO

Favela-Bairro Programme

Rational: Jacarezinho is a densely occupied slum (favela) situated within an industrial area in the northern zone of Rio de Janeiro. With an estimated population of 40,000 people, it shares a boundary with the General Electric Factory and is surrounded by industries like the Glass Factory Cisper and the Nova America Textile Factory. Jacarezinho has been a source of labor for these industries and due to its location Jacarezinho has always been well served by public transport like buses and the next door railroad line. It is one of the largest favelas in the city. People seeking residence closer to their place of work started to settle on the site in the beginning of the 1940s, the majority low-income residents. During the 1960s when the city government pursued a slum clearance policy, Jacarezinho was one of the few favelas that was not threatened by eviction. On the contrary, it actually received investments in public works and upgrading of basic infrastructure which made the place very attractive to newcomers who gradually built and occupied all available vacant land. Without land for expansion Jacarezinho witnessed continuous and uncontrolled encroachment onto public spaces that resulted into streets being transformed into narrow alleys and pathways.

From 1980 onwards, without other options for growth, Jacarezinho grew vertically consolidating a high density urban structure characterized by poor infrastructure and restricted accessibility and mobility. Consequently, housing situated on the ground level suffers from very poor ventilation and weak natural lighting making living conditions critical for the residents. The site is predominantly flat but the extent of the street network is short, cumbersome, winding and with low degree of permeability towards inner areas of Jacarezinho. Nearly 95% of the internal access roads have been transformed into narrow accesses and pathways that hinder significantly mobility and the access of vehicles and services like gas, taxi and ambulances.

Example: At the end of the 1990s the municipal government launched a slum upgrading programme to tackle the large favelas (Programa Grandes Favelas) which included the upgrading project of Jacarezinho. The goal was to reorganise the internal space of the dense settlement, open more streets and widen accessibility, and define public open spaces for social interaction, leisure and sports. The opening of the General Electric Street (Via GE) was a critical element of the slum upgrading important strategy to increase mobility, accessibility and permeability for the community. The GE Street was the result of a negotiated land readjustment between the municipal government and the GE Factory, actually the first public-private partnership implemented in such conditions, resulting into the enlargement of the alley alongside the wall of the factory bringing it from its original width of 1.2 mts to 12 mts. The wall was demolished and rebuilt 9 mts away from its original location in order to make room for the GE Street (Via GE). Most houses were kept at original location and only a few were demolished. This would ease access for both vehicles and people and create an axis of accessibility along the length of the favela making it possible the establishment of easier perpendicular accesses to its inner areas. With 1.3 km, the street reconnected Jacarezinho with the surrounding neighbourhoods but the underground connectivity to surpass the obstacle created by the railroad was not implemented. The new street, now with a length of 800 mts, has become animated and safe. There is an evident change from residential use to commercial activities in a number of buildings. The wall and the space along its length was subject to a landscape architectural intervention, trees were planted and it has become an attractive area for the population who lacks similar spaces within the settlement.

Experience: This example demonstrates the need to make use of negotiation tools within a slum upgrading strategy (e.g. PPP and Land Readjustment), in order to make room for opening streets that reconnect the favela with the rest of the city. In this case, the GE Street was a strategic vehicle for urban transformation and the physical, economic and social integration within the Jacarezinho community and between Jacarezinho and the rest of the city. The changes already observed in terms of commercial activities flourishing alongside the GE Street reinforce the important role of streets in triggering economic activities and income generation, in addition to increase accessibility and mobility. The example of Jacarezinho makes evident the need to demolish houses and buildings to create more public spaces and the need for a phased approach to street making, public space planning as part of an area-based plan that envisions greater mobility and accessibility to reconnect slums with the surrounding neighbourhoods.

Text:

- Project, text and photos by 'Arqui Traço Cooperativa Ltda', Rio de Janeiro, Brazil.

Jacarezinho 1, the GE Street before the slum upgrading intervention: The alley along side the walls of the General Electric Factory enable only footpath accessibility. Photo © ArquiTraço.

Jacarezinho 2, the GE Street after upgrading. The improvement of the public space generated by the street invertention and its connectivity with the rest of the neighbourhood is significantly improved.   Photo © ArquiTraço-Solange Carvalho.

Favela do Jacarezinho Col, Aerial View including street interventions. Photo: Arquitraço

Favela Jacarezinho, aerial view. Photo: Arquitraço

Favela Bairro

Rationale: Parque Royal is a settlement situated at the seaside of the Guanabara bay in Rio de Janeiro. Migration and densification has led to high population growth. In 1996, more than 4,000 people lived in 1,000 shacks and brick houses. Nearly 150 families built their houses on stilts (palafitas) over water resulting in expansion towards the bay. The lack of physical connectivity of the settlement with the nearby urban areas due to limited accessibility, roads and pathways and absence of paved accesses next to risk-prone expansion over the water, and poor infrastructure provision were considered to be the most critical problems. The presence of drug dealers, poor public lighting and environmental degradation were critical as well.

Within the framework of the Favela-Bairro Citywide Slum Upgrading Programme, a settlement upgrading plan was formulated and implemented during mid 1990s.

Example: The upgrading plan provided greater physical integration of the settlement with the adjacent neighbourhoods and significantly improved access to basic infrastructure and public services such as water, electricity, drainage and sewerage.

A new street network has been implemented comprising of 22,000 m^2 of paved roads, accesses and pathways. The opening of roads and the removal of those families who were living at the seashore required the resettlement of a number of families and the provision of new housing for the relocated families. Families were transferred to apartments built by the municipality of Rio de Janeiro within the boundaries of the settlement. This process of relocation was facilitated by the transfer of land ownership from the Federal to Municipal government. Families were transferred to housing built within the boundaries of the settlement which helped to boost social cohesion.

Income generation activities coupled with support to sports and culture were two complementary components of the slum upgrading project in Parque Royal.

Experience: Families relocated from new street alignments, planned open spaces and risk areas were relocated in apartments within the settlement. The favela was opened up to the city through waterfront development and sports facilities.

Favela Parque Roya before slum upgrading, Rio de Janeiro, Source: Municipality of Rio de Janeiro

Favela Parque Royal before relocation and street making, Rio de Janeiro. Source: Municipality of Rio de Janeiro

Favela Parque Royal after relocation and street making, Rio de Janeiro. Source: Municipality of Rio de Janeiro
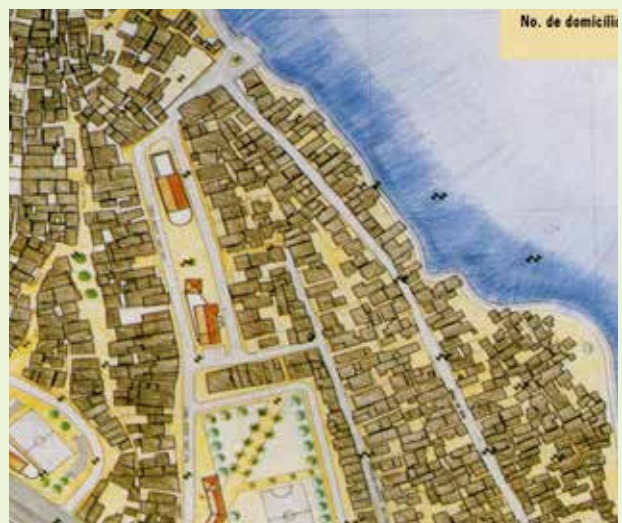
Favela Parque Royal urban layout plan after slum upgrading, Rio de Janeiro. Source: Municipality of Rio de Janeiro.

Favela Parque Royal after slum upgrading, Rio de Janeiro. Source: Municipality of Rio de Janeiro.

Colombia

INTEGRATED PROGRAMME FOR THE IMPROVEMENT OF SQUATTER AREAS IN MEDELLIN (PRIMED)

Rationale: In Medellin, Colombia, the municipal government's policy towards slums and informal settlements focused on reversing the process of social and spatial exclusion of the inhabitants of these barrios.

PRIMED was managed by the mayor of Medellín and aimed to integrate neighborhoods in the high-risk zones into the city. PRIMED coordinated planned territorial investment of financial and technical resources provided by German development cooperation, the entities of the nation-state and municipality, the private sector, NGOs, universities, grassroots organizations, and the self-help efforts of citizens; it thus orchestrated multiple interests. Medellin is a rapidly growing city. In 2005 more than 60% of the city population of 1,324,804 lived in informal settlements. Medellin is known for violent crimes but also for its employment potential in the region, even though the rate of unemployment is high.

Example: The slum upgrading strategy was based on the Integrated Urban Project approach that had the following components: public space and mobility, collective urban services (e.g. daycare centres, libraries, schools, etc.), housing consolidation and environment.

The innovative public transport system based on cable cars (metrocable) linked these areas to the metro and municipal public transport systems. This physically connected these settlements with the rest of the city, improved accessibility and mobility significantly, and created areas of regeneration with an increasing mix of commercial activities, housing improvement, and good public services.

From their perspective and from visual evidence, it is clear that the target areas were incorporated better into the city via streets and paths. The local infrastructure improved significantly. Open spaces were created and public facilities and institutions developed or improved. Many households were able to improve their houses and legalise land tenure - even if this meant incurring debt and new monetary obligations.

Experience: The opening of space for achieving greater accessibility via metrocable made the provision of good quality streets, public spaces possible, as well as the provision of schools, public libraries (see photo at the bottom). A negotiated process of demolition and relocation provided room for urban regeneration and building the metrocable. Those affected were supported to relocate to new housing within the area or outside by choice. Compensation was based on the amount required to buy a house, but lower than the cost of new social housing.

An impact assessment study showed that the upgrading increased the pedestrian infrastructure from a coverage of 40% to 60% (compared to the average of 90% for the rest of the city); brought the infrastructure of streets to 80% of the area (close to the 90% level of coverage for the rest of the city). A high percentage (70%) agreed that their travel time had decreased, that access to transport had improved (92%), and that they were better linked to the city (91%). The increased presence of the state was recognized by 76%.

Perhaps the major shortcoming was in the issuance of land titles. The process proved too complex and the target too high. The aspect of inter-institutional cooperation became very complex and time consuming with many partners and elements. Initial difficulties came from resistance from armed groups demanding payments (e.g. vacunas) and from changes in the armed groups controlling the settlement. It also came from community disagreements on approaches to the solution of environmental and other physical problems. Unexpected factors included incomplete information, technological difficulties related to the steep and unstable terrain and the difficulty of involving local organizations. Even so, political will, civil society involvement and external funding led to the success of the citywide programme.

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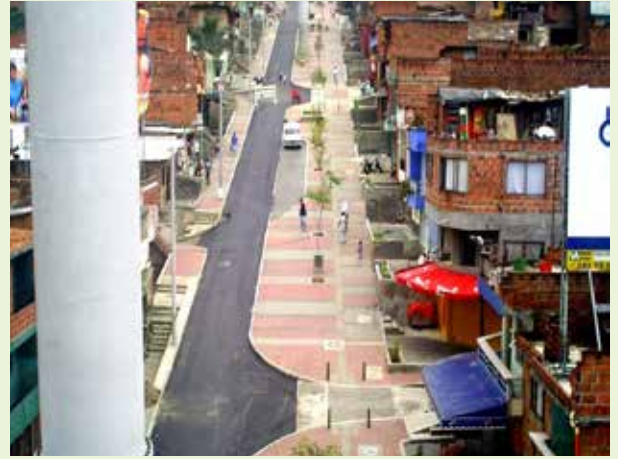
Combining street making, mobility and public transport in slum upgrading in Medellin, Colombia

New street and pedestrian pathways in Medellin slum upgrading, Colombia. Source: Municipality of Medellin

Albania

Urban Land Management Programme

Rationale: From 1990 onwards, Tirana has undergone a rapid transformation of its peripheral areas and inner city core. After the fall of the communist regime, restrictions to free mobility of people were abolished resulting in a remarkable influx of migrants into the city.

The village of Kamza, situated at the periphery of Tirana saw its land rapidly converted from rural to urban use by a wave of informal land occupation and illegal buildings. In a span of 10 years, the population jumped from 6,000 to 60,000 inhabitants. This process took place on collective farms, public land and land which had not been given any specific use.

Twenty years later, a national programme of regularisation revealed 270,000 self-declared illegal buildings of which 30% were in Tirana. The village was transformed into a municipality and the problem of informal settlements started to be tackled during the 1990s with the support of a NGO called CoPLAN. This process proved so successful that it inspired a World Bank sponsored programme called Urban Land Management Programme aiming at the provision of basic infrastructure in these areas.

Example: In Breglumasi and later in Bathore, two areas illegally developed in Kamza, Co-PLAN pursued demonstration projects with very strong citizen participation aiming at the safeguarding of public space.

In practice, public space meant streets and pathways.

This was done through direct negotiations with occupants about the change of boundaries and demolition of walls, fences and at times part of their constructions in order to make space for streets. The "demarcation" of the street was collectively agreed upon and physically defined by gravel and stone pavement. This was not always easy and serious conflicts with residents had to be resolved by persuasion and continuous negotiations. The goal was to prepare the area for future urbanisation, set contingency plans and guide future occupants, squatters and land subdivision. Safeguarding the streets was seen as key for the future urbanisation of Kamza.

Experience: Opening up and safeguarding streets and open spaces became possible with the NGO working with local residents through a process of conflict resolution and negotiation. Safeguarding street space was used as a practical though difficult strategy to guide future occupants, squatters and land subdivisions.

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Peripheral informal development Kamza Municipality, Tirana, Albania

Peripheral informal land development Kamza Municipality, Tirana, Albania

Street layout system in Bathore informal settlement, Tirana, Albania. © Coplan.

Defining the public space allocated to streets in Bathore informal settlement through gravel pavement, Tirana, Albania. © Coplan.

Residents working on paving and laying down the street space in informal settlements in Kamza, periphery of Tirana, Albania . © Coplan.

Residents organize themselves with support from the NGO CoPlan in the execution of their street plan using gravel pavement and compacting. A successful practice in the informal areas of Tirana, Albania . © Coplan.

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15. *(1) For instance, the absolute numbers of squatters in Delhi, the capital city of India, almost doubled between 1991 and 2006 with no change in area (DDA, 2007). The additional* population invariably consists of informal renters in cities like Dhaka (Herrmann, Michael and Svarin, David. 2009).
    (2) 20% of Metro Manila's slum population lives in risk areas (Banerjee, 2010)
    (3) Villages and small towns in metro regions are expanding into dormitories for the poor (Banerjee, 2010)
    (4) Slum cities are typically located in countries where poverty is endemic, urban infrastructure is absent, housing is inadequate overall or conditions have deteriorated because of political instability and conflict. Slum cities are growing in poor countries like Chad and Tanzania in Africa, Bangladesh, Pakisan, Afghanistan and Iran in Asia and Nicaragua and Bolivia in Latin America (UN-HABITAT, 2010)
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51. *Thinksoft Consultants, 2005 for APUSP; Martin, 1983 for Lusaka; Acioli, Claudio, Besnik Aliaj and Flamur Kuçi (2003) for Tirana; Hasan, Arif, 2006 for Orang Pilot Project.(double in, Claudio?)*
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65. *Such transformations or upgrading process can particularly be observed in Latin America, where social organizationis strong and effective in defending the security of tenure. Those infrastructures, community and public spaces are often maintained by the neighbourhood community members, who feel a great level of ownership because they were involved at the early stages of the decision process and beyond.*
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104   *Illegal land subdivision is a common land supply system in many parts of the world. Each city calls it a name. The pirate subdivisions of Bogota (Colombia), the informal land brokersof Karachi (Pakistan), the land trafficking dealers of Guayaquil (Ecuador), the clandestine and irregular settlements of Rio de Janeiro, the land parceliing (loteos) of several parts of LatinAmerica are examples of this phenomenon. Chiefs and customary land owners in African cities are increasingly acting like these informal land entrepreneurs.*
105   *Such transformation or upgrading process can particularly be observed in Latin America, where social organization is strong and effective in defending the security of tenure. Those infrastructures, community and public spaces are often maintained by the neighbourhood community members, who feel a great level of ownership because they were involved at the earlystages of the decision process and beyond.*
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