PARTICIPATORY
SLUM UPGRADING
PROGRAMME

PSUP

TRANSFORMING THE LIVES OF ONE BILLION SLUM DWELLERS

NEIGHBOURHOOD PLANNING DESIGN RECOMMENDATIONS

FOR CITY-WIDE, PARTICIPATORY SLUM UPGRADING

Participatory Slum Upgrading Programme (PSUP) Recommendations for Sustainable Neighborhood Planning in slums and other informal settlement contexts

SDG 11 Make cities and human settlements inclusive, safe, resilient and sustainable.

Target 11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.

Target 11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated, and sustainable human settlement planning and management in all countries.

UN HABITAT
FOR A BETTER URBAN FUTURE

An initiative of the ACP Secretariat, funded by the European Commission, and implemented by UN-Habitat

Contents

Introduction – purpose of the quick guide

Drawing on the experience from the Participatory Slum Upgrading Programme (PSUP), international research on slum and informal settlement upgrading, this quick guide provides planning design recommendations for slum and informal settlement upgrading, building on and enhancing UN-Habitat's current five principles for sustainable neighborhood planning[1].

The guide outlines the rationale for these recommendations which aim to strengthen the implementation of sustainable design frameworks in those urban contexts with high levels of informality and slums and other informal settlements.

The proposals are meant to both guide upgrading but also prevent new slums emerging. The recommendations are thus on the one hand, a technical guide to incrementally address local planning challenges so that a path towards the sustainable neighborhood planning can be established. On the other hand, the recommendations can act as a preventative tool to analyze current planning situation in urban contexts with informality and slums, to guide specific and new 'at scale' urban upgrading and renewal processes.

Key considerations for planning in participatory slum and informal settlement upgrading

The challenges and opportunities of urban planning in slums

With an estimated one billion slum dwellers living in urban centers today[2], the challenge of urban poverty, high levels of informality and slums and other informal settlements, remains significant. A sustainable response to the 'five deprivations'[3] of adequate space, adequate shelter, secure tenure and adequate access to water and sanitation – also continues to be urgent. International laws such as the Right to Adequate Housing are a reminder of the binding obligations to address basic quality of life factors for all, under a human rights banner[4].

A key challenge for planning – both in terms of governance, spatial planning and local area design - is how it can contribute to the global challenge of slums and informal settlements given that these contexts are often reflective of ongoing deep seated governance and institutional dysfunction, weak land management and limited planning capacity. These challenges are of particular concern given that the number of slum and informal settlement dwellers is increasing and the degrees of spatial and socio-economic disparities are growing in many regions of the world[5].

A second key challenge is how planning can help foster a more positive view of slum and informal settlement dwellers as urban dwellers with rights and contributions to make. Finally, and a third challenge is how planning can help promote the spatial and social integration of unplanned areas so that all urban dwellers and locations - planned and unplanned – are connected with each other. Slums and other informal settlements for example, are often left outside of formal planning considerations because they are considered to be occupying land 'illegally'. This is despite the fact that there are often limited or no low-cost housing options for poor urban dwellers. Furthermore, there are often deeply held negative stereotypes about slum and informal settlement dwellers which undermines their active inclusion in broader planning and development processes[6].

Figure 1 below provides a graphic representation of the spatial disparities in Nairobi Kenya as a result of many of the factors highlighted above. In this graphic slum and informal settlement dwellers occupy only a small fraction of the built area and yet constitute the majority of the city's inhabitants, which makes those areas, *indicated in red*, the most dense but least serviced.

1 UN-Habitat (2014). A New Strategy of Sustainable Neighborhood Planning: Five Principles.

2 UN-Habitat (2015). Slum Almanac: tracking improvements to the lives of slum dwellers.

3 The Official definition of slums was adopted by an expert group meeting in Nairobi in 200X and has formed the basis of measuring the prevalence of slums dwellers globally, particularly in the MDG's.

4 The Right to Adequate housing is recognized in the Universal Declaration of Human Rights and the International Covenant on Economic, Social and Cultural Rights as well as in many national constitutions. See among others UN-Habitat and Office of the United Nations High Commissioner for Human rights. The Right to Adequate Housing. Fact Sheet No. 21.

5 UN-Habitat (2015). Slum Almanac: tracking improvements to the lives of slum dwellers.

6 WIEGO (2013). Men and Women in the Informal Economy – A Statistical Report. WIEGO (2014). WIEGO Working Paper (Statistics) No 2 April 2014.

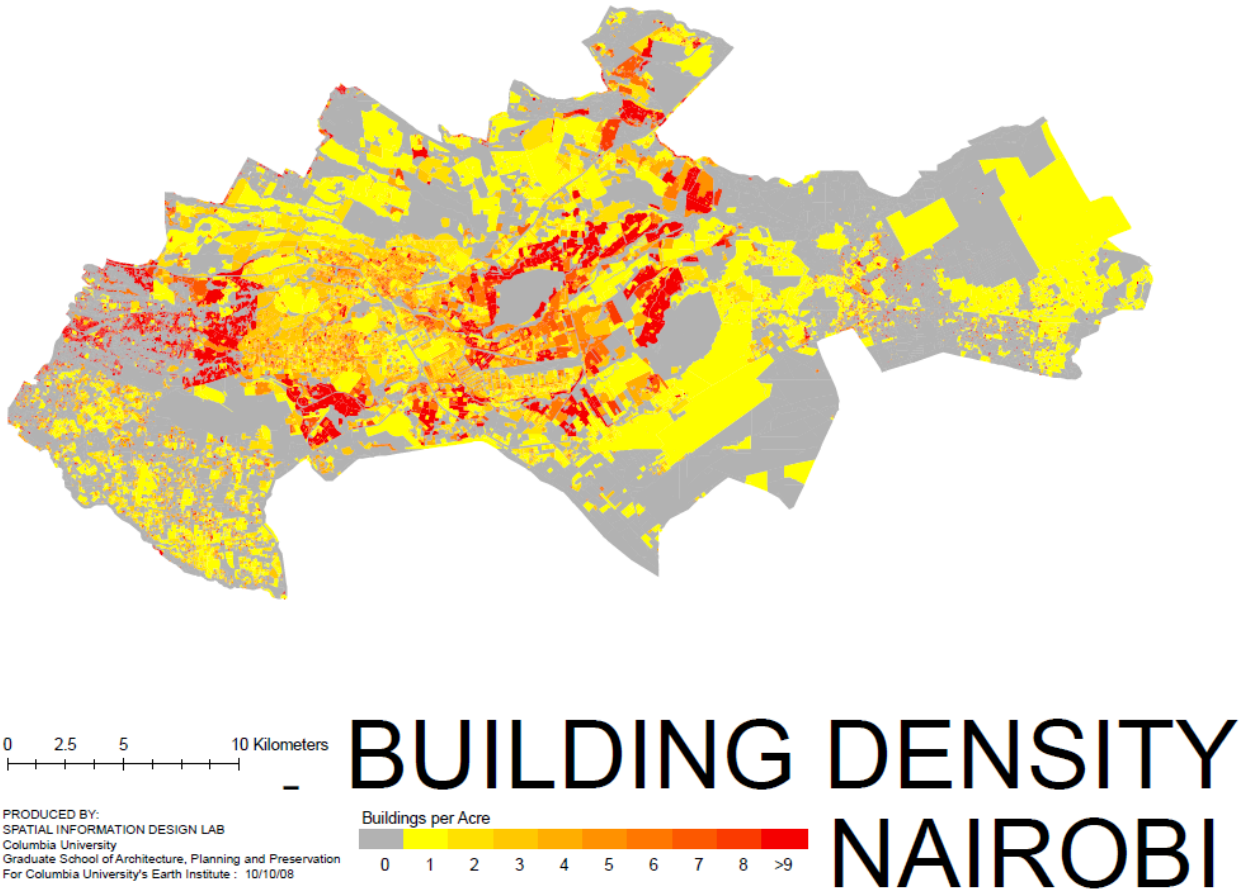


Figure I: Building density of Nairobi, Kenya. The red areas indicate more than 9 building per acre[7].

At the same time, however, and especially in context of developing countries, it is important to note that in many urban contexts, an informal 'version' of 'planning' is usually undertaken. Parallel planning systems are functioning whereby local communities (local leaders in particular) and even the private sector are making decisions about local design - the roads and the placement of plots and houses - according to local habits, cultural norms on land deemed available.

In sum, these are all challenges that local area planning and design must consider given that many urban regions, especially in Africa and Asia, have high levels of informality and slum and other informal settlement conditions (see Box 1).

7 2005 Land Use & Building Density, GIS Data: https://nairobigismaps.wikischolars.columbia.edu/2005+Land+Use+%26+Building+Density

BOX 1: Key features of urban areas with high levels of informality and slums

Slums and informal settlements have the following key features that must be accounted for in planning design:

- Many aspects fall outside formal planning systems and frameworks (land, housing design and materials, plot and street layout, building code compliance).
- Very limited security of tenure but often a dynamic mix of land use arrangements and claims.
- High levels of mixed land use and multi-function activities being undertaken in most spaces by different groups.
- Limited divisions between public and private. Spaces are multifunctional and often defined by informal economy and livelihood generation activities. Homes and streets are often used as spaces of production.
- Often highly dense and sometimes overcrowded conditions often most visibly represented in small shack houses tightly packed together made of unsafe and non-durable materials.
- Mobility spaces prioritized for walking and small carts, vending, but often not well connected with the rest of the city.
- Sometimes located on geographically hazardous land or in a climate vulnerable area.
- Limited mix of people from different socio-economic backgrounds but often a mix of people according to other identity categories (ethnicity, religion, permanent or transitory citizens).

Table 1 below provides a visual representation of the potential differences between slum and informal settlement areas and formal gated communities according to UN-Habitat's current 5 principles for sustainable neighborhood planning.

Table I - Applying the recommended 5 planning principles in the slum context

Principle	Indicator	Current Range
Principle I	Street land-use	0-15%
Multifunction streets		45-65%
Principle II	Population density	80-100%
Density		0-20%
	Economic use	60-90%
Principle III		10-30%
Mixed-use built space	Residential use	10-30%
		70-100%
	Single tenure	80-100%
Principle IV		80-100%
Social Mix	Socio economic diversity	0-30%
		0-20%
	Identity Mix	50-80%
		0-20%
	Single Block function	0-10%
Principle V		90-100%
Limited land-use specilaisation	Secure tenure	0-10%
		80-100%

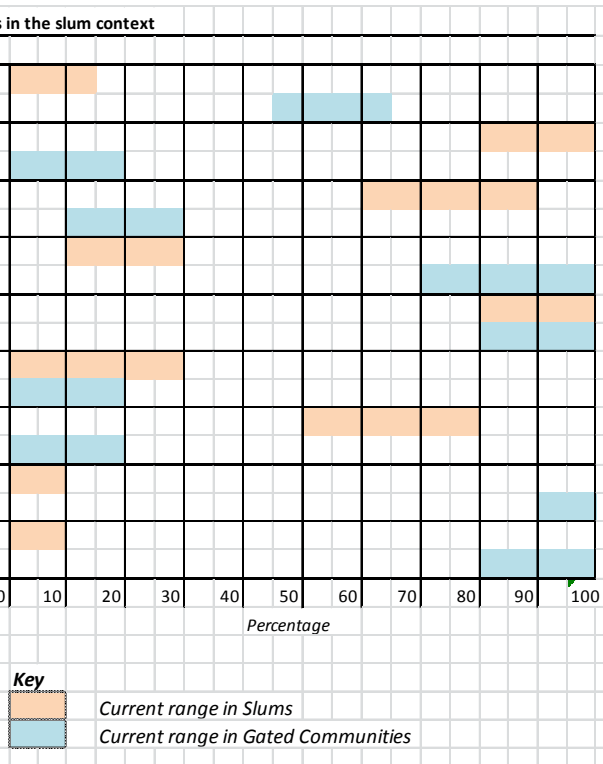


Table 1: Contrast between a slum context and a gated community within a developing country major city according to UN-Habitat's current 5 sustainable neighborhood planning principles.

Guide from Global frameworks

It is important to note that the proposed Participatory Slum Upgrading Programme (PSUP) neighborhood planning design recommendations, respond to a range of international frameworks that support sustainable and inclusive slum upgrading (such as the Sustainable Development Target 11.1), the current internationally agreed definition on a slum household (defined by deprivations in relation to water, sanitation, durable housing, overcrowding and security of tenure) and UN-Habitat's proposed New Urban Agenda which focuses on how the positive elements of urban environments can be harnessed to benefit all urban residents including slum and informal settlement dwellers.

The proposed PSUP recommendations also reflect inputs from global debates on optimum approaches to planning in less developed contexts[8] as well as the practical experience of UN-Habitat's Participatory Slum Upgrading Programme (PSUP) which is based in 35 countries around the world and 160 urban centres. Planning clearly has a key role to play in harnessing and strengthening the positive components of slums and other informal settlements and the capacity of those living there, and in integrating them back into the broader urban environment.

Ways to promote inclusion and prevent the challenges of slums by urban design

A key goal of planning in neighborhoods with high levels of informality and slums and other informal settlements, is how to integrate those living there, via participatory and inclusive approaches, into the broader urban context, while at the same

8 See for example Watson (2009) and Martin (2014) and UN-Habitat (2009).

time, help develop tangible improvements to the lives of slum dwellers via their physical living conditions.

Planning must:

- Address key practical design and context/locality issues considering broader governance frameworks such as the presence or absence of pro-poor policy, building codes versus enforcement practice, land management and institutional collaboration and capacity.

- Recognize that the divisions between the formal and informal, legal and illegal, formal planning codes and improvised planning outcomes represent blurred lines between government, market systems and the informal economy.

- Recognize the value and rights of slum and informal settlement dwellers. Slums and other informal settlements are often spaces which represent a diverse informal economy which operates in parallel with but also often aligned to - the formal economic system. Often this informal economy is closely linked to local physical spaces and dynamics and infrastructure than the formal economy, through e.g. street vending, open kitchens, home based workshops and the informal transport system.[9]

- Understand land management systems considering a continuum of land rights through the provision of security of tenure is also key in planning processes[10] - both as a direct outcome of planning (i.e security of tenure for slum dwellers often results from good planning interventions) as well as a necessary fundamental component to undertake effective planning and slum and informal settlement upgrading (so the provision of secure tenure is more likely to promote the provision of effective basic services and mobility infrastructure).

- Adopt a flexible position in what are often unpredictable planning conditions (unclear enforcement of planning regulations, complex governance arrangements), large scale informality and the impact of long-standing local cultural norms, coupled with limited planning capacity.

- Engage a broad range of stakeholders, including slum and informal settlement dwellers themselves who have a right and need to be engaged but are often not formally trained in planning or familiar with development processes.

- Adopt a focus which is orientated towards city-wide approaches to both address the immediate deprivation and livelihood issues in slum and other informal settlement contexts, but also start to facilitate integration and build prevention capacity and activity. In these contexts, planning is urgently required but needs to take on a different role than in other developed contexts (so often a stronger governance and capacity development focus rather than purely technical).

- Recognize that planning also contributes to the prevention of slums and other informal settlements, through the upgrading process. It creates the window of opportunity for change (positive mind-set towards slum dwellers and towards participatory planning) and ultimately a more preventative and forward thinking approach to urbanization. Slum and informal settlement upgrading starts to address the challenges at hand as it starts to create the necessary working relationships required for sustainable urban development as well as the governance arrangements for preventions. It also (and importantly), builds the knowledge, capacity and skills around all dimensions of planning such that urban decision makers can start to plan in advance.

9 The significance of the informal economy and its laborers was confirmed in 2015 by the International Labour Organization during the 104th session on 12 June 2015 in Recommendation No. 204 concerning the Transition from the Informal to the Formal Economy (Conference, 2015)

10 (UN-Habitat, Secure Land Rights for All, 2008), http://www.gltn.net/index.php/land-tools/gltn-land-tools/continuum-of-land-rights

PSUP key neighborhood planning recommendations for transforming slums incrementally and sustainably

In light of the discussion thus far and in view of UN-Habitat's commitment to promote participatory, incremental, city-wide slum upgrading, the following PSUP recommendations are suggested for sustainable neighborhood planning design.

1. Planning Design Recommendation 1:
   Give more recognition and emphasis to the provision of multi-dimensional public/common good space for socio-economic development (for livelihoods, cultural expression and social networks), provision of utility and waste management infrastructure and mobility.

   - Strengthen the link between roads, sidewalks and utilities infrastructure (as opposed to highlighting just streets, sidewalks and recreation spaces) as well as the connections points for formal and informal public transport systems.

   - Highlight the space for community /social services and space for recreation, public gathering and cultural activities.

   - Recognize and preserve the flexible, multi-use nature of these spaces.

2. Planning Design Recommendation 2:
   Recognize overcrowding in many slum and other informal settlement contexts but in the context of the broader urban environment for equitable development.

- Recent data shows that the average density in large urban areas worldwide is between 4,000-10,000 persons per square kilometer (51.4%). Additionally 18.3% live in slightly higher density urban settings (10,000,20,000 persons per square kilometer – of which most tend to be in developing country urban areas[11]. The key consideration in slum and informal settlement upgrading in regard to density, is to reduce overcrowding and start to promote a city-wide approach to density that ensures a more equitable distribution of the urban form which doesn't fall unfairly on the most vulnerable or privilege certain groups according to their socio-economic status.

- To promote equitable development, consider the density of people per km² alongside considerations of both the building coverage (say of >50 per cent) with a FAR (say of 1.5 plus). This can help balance vertical and horizontal building distribution – if applied at a city-wide scale.

- Promote a minimum of 2-storey development in slum and other informal settlement areas. These neighborhoods are often naturally dense, however, they are often not so dense in terms of the horizontal built-up area and lack vertical development.

- Consider the development of a density range (so both a minimum and maximum) and the importance of and its application across the whole urban context to achieve equity and sustainability.

3. Planning Design Recommendation 3:
   Recognize and preserve the already existing mixed land use in slums and other informal settlements.

- Give greater emphasis to preserving the existing mixed land use and facilitate security of tenure, to strengthen livelihood and informal economy activities in slums and informal settlements. Aligning principles 1 and 3 will help facilitate this.

- Emphasize a mix of uses within the urban built up space including residential, livelihood activities and other economic use recognizing that in some areas the percentage of residential might be slightly higher or lower depending on the dynamics of the area and the current regulations.

- Combine preservation and upgrading with mechanisms to integrate the slum and informal settlement activities into the broader urban fabric.

- Where feasible and safe, preserve and facilitate mixed use within the home space, i.e preserve the overlapping uses of livelihood/economic and residential with some facility to ensure a safe and not over crowded residential component.

- Discourage any area that is 100% residential.

4. Planning Design Recommendation 4:
   Recognize and preserve the current social mix and diversity in slums.

11 Dempgraphia (2016). World Urban Areas. 12th Annual Edition: 2016-04.

- Promote social mix in slums and other informal settlements to foster inclusion and diversity.

- Promote the availability of houses in different price ranges and tenure types accommodate different income ranges and socio-economic diversity

5. Planning Design Recommendation 5: Recognize the multiple land uses of slums and informal settlements and the rarity of single function blocks/land-use specializations.

- The multi-dimensional activity on blocks should be understood and preserved as positive elements both within slums and other informal settlements and in terms of contributing to the dynamism of the broader urban environment. This principles also contribute to Principle 3 and 4.

6. Planning Design Recommendation 6: Promote climate resilient design.

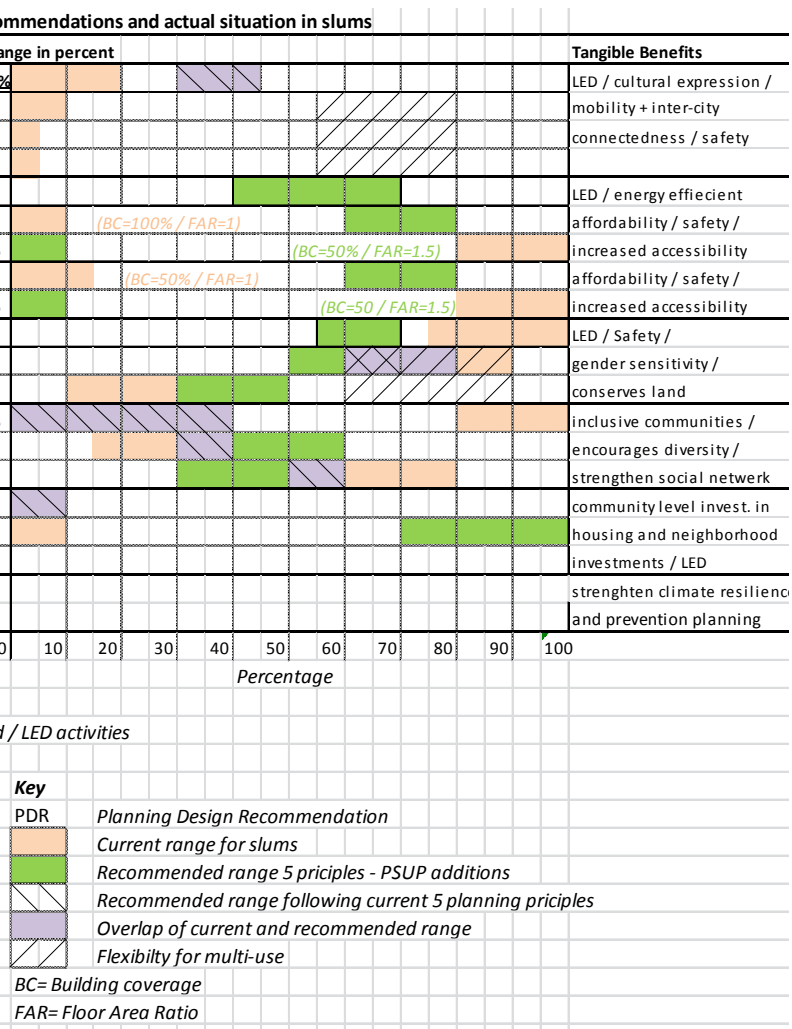
- Encourage the enactment or incorporation of climate resilient features in the local planning design and housing structures.

- Facilitate the development of zoning laws, detailed planning regulations and land-use plans ensure that housing is only built in non-hazardous areas (environmentally and geographically).

Table 2 below provides a summary of the recommendations for neighborhood planning design in slums.

Table II - Detailed additional planning recommendations and actual situation in slums

Recommendation	Indicator	Current range in percent	Tangible Benefits
PDR I	**Street & Land-use Recommended range: 30-45%**		LED / cultural expression /
Multifunction streets	mobility *(sidewalks / roads / streets)*	0-10%	mobility + inter-city
(unbuilt space)	utility *(sewege/ streetlight etc.)*	0-5%	connectedness / safety
	public services (hospitals, parks etc.	0-5%	
	High Density / Recommended range	40-70%	LED / energy effiecient
Planning Design	Slums: *vertical*	80-90%	affordability / safety /
Recommendation II	*horizontal*	80-100%	increased accessibility
Density	Informal Settlement: *vertical*	0-15%	affordability / safety /
	horizontal	80-100%	increased accessibility
Planning Design	**Recommended Mixed-use range: 55-70%**		LED / Safety /
Recommendation III	economical use / informal economy	60-90%	gender sensitivity /
Mixed-use built space	residential use (exclusive)	10-30%	conserves land
Planning Design	**Single tenure**	80-100%	inclusive communities /
Recommendation IV	**Socio-economic diversity**	15-40%	encourages diversity /
Social Mix	**Identity Mix**	50-80%	strengthen social netwerk
PDR V	**Single Block Function**	0-10%	community level invest. in
Limited land-use	**Secure tenure**	0-10%	housing and neighborhood
specilaisation			investments / LED
PDR VI			strenghten climate resilienc
Resilient Design			and prevention planning



** recognizing that residential spaces are also used for livelihood / LED activities*

Table 2: PSUP recommendations for sustainable neighborhood planning design[12].

12 Thanks to Katharina Manecke for her substantive technical inputs into this document. Hanne Vrebos also made inputs into an early version of the document.

Concluding comments

Slum and other informal settlements are different from formal urban areas. While they are often considered deprived spaces and clearly lack many basic and essential infrastructure and services, they also contain elements that can be preserved and that indeed, could add a dynamic dimension if incorporated into the rest of the urban environment. Slum and informal settlement dwellers arguably have a right as well as capacity, skills and knowledge that can be harnessed through such city-wide integration efforts. Local planning and design can be an important step to facilitating those connections.

The recommendations for upgrading projects outlined in this document, are aimed to guide technical practitioners as well as urban managers – including those community leaders who are often on the ground in local neighbourhoods making key design decisions. They provide guidelines which support and promote improve local amenity, physical design as well as key socio-economic and cultural outcomes – strengthened economic development, safety, the functional provision of basic services and improved mobility.

The table in the following pages outlines the rationale behind the recommendations. It draws on the experience from the Participatory Slum Upgrading Programme and outlines some observations for each proposed recommendation as well as facts and figures from urban centres in developing country contexts. Column three re-states the PSUP recommendation including broad and specific guidelines and column four then proposes some associated urban planning implementation actions.

Table 5: Rationale behind the development of the PSUP neighborhood planning design recommendations.

The table also provides suggestions for associated implementation actions.

Observations from country level work on public space and common areas	Some examples	PSUP Implementing Recommendations for sustainable, participatory, city-wide slum upgrading and prevention and the development of a n'hood design plan	Associated Urban Planning implementation actions
Slums are often lacking in adequate space for public / common good activities. This includes space for livelihood activity, meeting space, cultural expression and recreation. It also includes adequate space for mobility and inter urban connections represented in a shortage of roads/street, sidewalk as well as space for public utilities. All these spaces and their uses require attention in planning and design. Public space often plays multiple roles in slums where public and private dimensions overlap. Depending on the time of day and day of the week, common areas are used for mobility, livelihood generation, utility functions, both individual and collective and recreation. The multi-dimensionality of public space should be understood and the positive elements – especially in relation to livelihood generation, recreation and safety - preserved. 'Public space' can be a contentious term in slums. The division between the 'public' and 'private' is often flexible compared with other urban areas and spaces are also contested and appropriated. Public space tends to be understood more in terms of its 'use value' than as a fixed entity in its own right. Land for public space is also highly contested and symptomatic of broader political interests and land management dysfunction. The governance arrangements around land must be clearly connected with planning design proposals in slums in relation to public/common space. Most slum dwellers tend to walk and don't own/ use private cars. The road/street, sidewalk configuration must consider all uses– especially livelihood generation - and thus what mobility structures are appropriate and will connect to the rest of the city. Prioritizing one type over the other should be avoided. Space for utility and service infrastructure is often missing in slum environments (representing some of the key deprivations). Streets should further be understood as 'facilitators' for effective utility and service infrastructure so that a widened road network is also perhaps better accepted in slum upgrading activities. Consider an incremental approach including a lawful relocation process if necessary. 30% for streets/roads/sidewalks alone is a 'big jump' – in terms of cost, disruption, management of a process - for governments and other stakeholders in slum upgrading projects.	Nairobi: Core: 11,5 % with 7,3 km street/km^2 Nairobi: Total: 3,8 % with 7,3 km street/km^2 Kibera: 3% of land allocated to streets/roads. Limited space allocated for sidewalks. Bangui overall: 6%1 Dakar: Core: 8.0 % with 7,7km street/km^2 Medellin: Core: 25,2 % with 18,1 km street/km^2 Medellin: Total: 16,6 % with 11,9 km street/km^2 Sao Paulo: Core: 19,5 % with 16,1 km street/ km^2 Sao Paulo: Total: 14,5 % with 12,0 km street/ km^2 Lagos: Core: 14,0 % with 13,5 km street/km^2 Lagos: Total: 10,0 % Manila: Core: 15,2 % with 19,5 km street/km^2 Manila: Total: 10,0 % with 12,8 km street/km^2 Cairo: Core: 15,7 % with 15,7 km street/km^2 Cairo: Total: 11,0 % with 11,0 km street/km^2 Conclusion: Slum contexts, alongside other urban areas in many LDC, struggle to fulfill any public space/common area requirements and have on average 10% for roads and streets. These contexts require the promotion of all forms of public space.	**1. Provide (public/common good) multi-use space for socio-economic development (for livelihoods, cultural expression and social networks), spaces for utilities and basic infrastructure and mobility** **Broad recommendations:** Recognize that slums are often common area/public space deficient. Recognize the many different land-use activities which take place in the public /common areas of slums so a range of spaces required (streets, sidewalks, spaces for markets, stalls, etc). Recognize that the division between public and private spaces in slum contexts is not defined and that many activities, especially those related to livelihood and economic development, depend on this flexibility and the fluidity of the common areas. Support multi-functional common areas in slums that support many different activities which are both time and day dependent: Recognize the gender dimension to public space as women fulfill both caring and family related and livelihood activities. Many slums have significant proportions of female headed households which must be accounted for in planning for public space and a certain interface with residential especially for women. Promote common space connections and links via streets, sidewalks, livelihood infrastructure (market places) to the rest of the urban environment. Such linkages are critical to improving the lives of slum dwellers. Link public/common space with a range of basic infrastructure development required in slums (consider in terms of the 5 deprivations – access to improved water, sanitation facilities) and in terms of how it is linked with other broader urban infrastructure. For example, link utility infrastructure with sidewalk/street/roads, should incorporate drainage for storm water and sanitation, water, the provision of electricity and street lightning. This which would also facilitate the discussion and decision making around street width and trunk infrastructure connections for optimal integration to the broader urban fabric. Consider the different mobility requirements of slum dwellers in the short term (less car focused, connections between main and secondary roads) as well as the long term mobility requirements for broader urban integration (capacity for range of vehicles to pass through). Security of tenure and land governance arrangements for public space must be considered and factored into all stages of planning and design processes. Specific recommendations: Promote the current principle 1 in terms of the multiple activities being undertaken in those spaces. This will highlight the importance of common good areas and utility/prosperity functions that they engender/result in. Consider revising the current 30% space designated for streets and an efficient street network - to include all common spaces. The gap between current practice in urban areas with a high incidence of slums and informality and the current principle, suggests that 30% is even a significant jump from the current practice (10%) indicated in column 2. Consider designating 20% for streets, sidewalks including provision for drainage channels (utility functions), with an emphasis on additional spaces for livelihood generation and local economic development. Consider designating 10% for recreation/ community space/services/facilities. Consider preserving an agreed % of the current access configuration to preserve existing livelihood generation activities and to preserve access to homes as appropriate. Consider a regulation that provides a common space within higher density buildings for trading and livelihood generation.	Undertake an inventory of public spaces including informal livelihoods via a participatory enumeration process. Give priority to understanding the gender dimensions and the ways that youth are engaged. Use observation techniques. Map the status of utility, infrastructure conditions and options to link slums with broader urban infrastructure. Use a participatory planning process to understand the history around space for community activities to inform planning and explore options exist for lawful relocation. Prioritize securing common spaces for the community as an entry point for slum upgrading activities. This promotes the value of socio-economic activities in slums and the 'common good' for sustainable urbanization, promotes consensus building, builds capacity in local communities and other stakeholders. Review plans to ensure how key transport networks and basic service infrastructure can be connected to slum and informal settlement contexts for city-wide integration.

Observations from country level work on public space and common areas	Some examples	PSUP Implementing Recommendations for sustainable, participatory, city-wide slum upgrading and prevention and the development of a n'hood design plan	Associated Urban Planning implementation actions
Observations from country level work on density and compactness	Some examples	Implementing Recommendations for participatory, city-wide slum upgrading and prevention	Associated Urban Planning implementation actions
Many slums and informal settlements are already naturally dense environments and provide an example of the benefits of high density living for the rest of the urban context. However, some slums are also not vertically dense and this causes severe over-crowding (at the horizontal level). Furthermore, over-crowded slums are often in stark contrast to the low density in other parts of the urban environment.	Nairobi: Kibera: 108,000 people/km2 Les Cayes, Haitii3: City : 7,985 people/km2 Slums: 53,288 people/km2 Antananarivo, Madagascar4 City:15,441 people/km2 Studied slum: between 33,140 – 89,252 people/km2 Dakar, Senegal5 City:29,700 – 55,530people/km2 Studied slum: between 220,246 people/km2 Conclusion: many LDC cities are already way above the recommended minimum density so this indicator becomes less relevant to them.	2. Ensure equitable and efficient multi-level density and compactness <u>Broad recommendations:</u> The key consideration in slum upgrading in regard to density, is to 1) reduce overcrowding and 2) promote a city-wide approach to density that ensures a more equitable distribution which doesn't fall unfairly on the most vulnerable. More discussion might be required on understanding optimal density ranges and would suggest that these must be accompanied by considerations of equity. Re-visit question of density ranges considering city-wide density distribution and latest figures on city urban density. Current figure is less relevant in some slums (at least 15,000 people/km2) but both a minimum and maximum density range would be useful to develop. Review density in slums in terms of broader urban density norms. Promote equitable density across the whole urban context, considered at the city-wide scale to manage over-crowding in slums. <u>Specific recommendations:</u> If the density of 15,000 people per km² is agreed, include considerations of both the building coverage of >50 per cent combine with a FAR of 1.5 plus as the urban density formulation. This can help balance vertical and horizontal building distribution if applied at a city-wide scale. Promote vertical density both in terms of floor area ratio (2 plus for vertical, slum deprivation definition of overcrowding might be useful to manage unsustainable density/). Promote 'building coverage' of around 60% which includes private and public space). Recognize that slums are already often using small plot sizes and are also considered overcrowded so the slum definition of overcrowding must also be discussed alongside any plot size figure. A dwelling unit figure at the neighborhood level might be useful. Consider the agreed slum deprivation definition to reduce overcrowding in slums (no more than 3 persons to share a room).	Undertake participatory enumeration to understand housing density types, household configurations (intra-household relations) and thus actual slum dweller numbers and density dimensions. Compare current slum density with city-wide densities and projected population growth to inform future planning. Collate and report figures highlighting any current density divides across the urban area city to inform planning. Map cultural norms in relation to building designs, usage of rooms, land and security of tenure to inform density discussions.

Observations from country level work on mixed land use	Some examples	Implementing Recommendations for participatory, city-wide slum upgrading and prevention	Associated Urban Planning implementation actions
Slums are already often very mixed in terms of land use although the spatial/physical arrangement is often not organized and might mask the range of activity being undertaken. Basic services and security of tenure are often missing in slums and provision for them almost non-existent. In many slums, residential housing exists alongside local economic development and livelihood initiatives or contains enterprises within the home space. The land-use in slums is seldom static and often changes rapidly, even depending on the time of the day. In many instances, the capacity for flexible mixed land use is an asset as it responds to people's needs, particularly in relation to livelihood generation and economic development.	Aroromi, Akure, Nigeria : 28% residential, 15.6% commercial, 51.7% mixed, 5.4% public, 0% open6	3. During slum upgrading preserve existing mixed land use including the informal economy activities, and facilitate security of tenure and access to basic urban services to integrate them into the broader urban fabric. <u>Broad recommendations:</u> Give greater emphasis to preserving the existing mixed land use and facilitate security of tenure, to strengthen livelihood and informal economy activities. Combine this with mechanisms to integrate slums and the activities, into the broader urban fabric. Where feasible and safe, preserve and facilitate mixed use within the home space, i.e preserve the overlapping uses of livelihood/economic and residential with some facility to ensure a safe and not over crowded residential component. Closely aligned with principle 1 and 3 because in slum and informal settlement contexts the division between the external/internal/public /private is often blurred and the use of space connected. The lively, productive elements should be understood and preserved. <u>Specific recommendations:</u> Promote multiple land use and mixed use activities within the 30 to 50 per cent built area percentage. Dissuade the development of areas into mono functional spaces. I.e that there should never be 100% residential and the division between residential and economic flexible and legitimately overlapping in some circumstances.	Map formal and informal land use and compare with livelihood activity. Compare with n'hood and city-level data to understand needs for further planning. Promote building types which facilitate a mixed use with special attention towards the provision of space for small businesses close to or within the home sphere/space (in recognition of women's duel role as principle livelihood generator and involvement in care work in many slum ad informal settlement contexts).
Slums often exhibit high levels of diversity across different identity categories. Diversity in slums is not based solely on income levels. They often contain a mix of ethnic groups and tenure security types, household compilations and sizes for example (though these usually fall outside of the current legal framework). This natural diversity promotes a degree of social mix. However, cities with a high proportion of slums often reflect deep socio-economic and spatial segregation. There is also very little mixing of low cost housing in the more affluent areas to facilitate mixed areas.	In Kibera, 10 %7 and in Kiandi, 4% owns their house or shop8 Tribe mix in Nairobi's Kibera: Luo tribe (50.2%), Kisiis (15.8%), Luhyas (15.1%), Kambas (9.8%) and Kikuyus (5.7%)9 Most slums show that the majority of dwellers have very limited or no security of tenure.	4. Preserve the current social mix and diversity in slums and promote social mix in future planning projects across the broader urban context such as in urban infill. <u>Broad recommendations:</u> Social mix must be considered in a multi-dimensional manner – and include considerations of other types of categories beyond income status. For example, tenure types, identity and household size and compilation are also useful indicators of social mix. Preserve the positive elements of diversity and inclusivity in slums that already exist across different categories (culture, age, religion, ethnicity, disability). Understand the likelihood of female headed households as a key feature of that social mix. Promote public infrastructure and services that represent multiple identities and needs. Facilitate and promote the integration of this diversity into the broader urban context. Consider the impact of forced evictions, relocation and gentrification on social mix in any proposal (particularly in terms of skewing the socio-economic background of residents). Mix social housing with other forms of housing to avoid clear intra-neighborhood spatial segregation particularly in infill projects. <u>Specific recommendations:</u> Ensure a proportion of low cost housing across the whole urban context (% proportion?). Ensure the preservation of cultural heritage, both in physical forms and in-terms of local art/ market activity etc and housing design type through heritage overlays and via the specification of land use rights that promote land remaining in local hands and thus the preservation of local cultural heritage.	Undertake participatory enumeration to understand various identity categories and compare these to known city-wide categories Promote the integration of slums dwellers through livelihoods, promoting inclusive public spaces, housing mix. Translate knowledge into building codes and planning regulations.

Observations from country level work on mixed land use	Some examples	Implementing Recommendations for participatory, city-wide slum upgrading and prevention	Associated Urban Planning implementation actions
The politics around land in urban contexts with high levels of informality pose enormous challenges to planning in slums. Land titles and security of tenure are often unclear and contested. Slums represent a gross miss-match between current formal land systems and informal land rights and security of tenure systems which often undermine the needs and rights of the poor. These needs and rights are compounded by legal systems that give no flexibility to different security of tenure models and also entrenched cultural norms around land ownership as the most viable option for security of tenure. Most slums are not accounted for in formal zoning plans or regulations or are deemed to be something else. While some slums might appear to have single block functions this is not related to a single use activity. Rather, there is more likely to be wide range of activities being undertaken in any physical block.		5. Ensure adequate blocks and preserve multiple land use. Broad recommendations: Promote and preserve adequate block sizes in slums (define adequate). Preserve multiple block functions and the current mixed land-use activity within those blocks in slums to promote livelihood generation, economic development, social and cultural activities and safety measures. Specific recommendations: Promote mixed land use zoning as per principle 3. Single function blocks should cover less than 10 per cent of any neighborhood.	Use participatory tools to understand the neighbourhood land and tenure situation such as the Social Tenure Domain Model and participatory enumerations.

Observations from country level work on mixed land use	Some examples	Implementing Recommendations for participatory, city-wide slum upgrading and prevention	Associated Urban Planning implementation actions
Climate change and the impact of environmental conditions have a significant impact on some slum contexts and many slum dwellers. Local planning design could help strengthen resilience to climate change through the consideration of climate impact and natural hazards in the upgrading phase and in the development of the city-wide slum upgrading strategy. Focus could be on two levels. The local environment/ neighbourhood level and improvements to the physical structure and design of the house. The neighborhood level Slum upgrading in Small Island States require particular attention to this challenge.	Small Island States in the Pacific and Caribbean (Haiti) are part of the slum upgrading programme in UN-Habitat and are utilizing local materials and designs to improve infrastructure and housing resilience.	6.Climate compatible slum upgrading and prevention Broad recommendations: Consider resilience in terms of 1) improvements to housing structures and 2) improvements to local communities and neighbourhoods. Install zoning laws & regulations and land-use plans to prevent that housing is built in exposed and hazardous areas [12] Develop relocation policies and strategies that prevent forced evictions. Use well known approaches such as the "Build Back Better" to guide upgrading. <u>Specific recommendations:</u> <u>Housing design:</u> Consider key aspects which promote climate resilience: Suitable site topography (not on steep or unstable ground) building orientation (East-West axis where main facades face North-West), position (e.g space for ventilation in tropical climates), footprint (allowing for green space, rainwater infiltration), drainage (maintaining natural drainage patterns), locally sourced materials and appropriate mix for strength (select materials for climate zone and ensure right mix for strength) shading (depending on climate - maximizing shade and light) colours (use light colours to reflect heat) natural ventilation (maximizing natural air streams), foundations and roof (ensuring sufficient depth and strength of foundation, and suitable roof for the climate)11. Promote water catchment off roofs and promote local enterprise for affordable tanks for additional water storage. Use building approaches that are more likely to promote durability in that context – such as using knee bracing to enhance the free movement of debris during a storm surge12. <u>Neighbourhood design:</u> Build appropriate infrastructure for resilient neighborhoods and reflecting the 5 deprivations on slums. Consider key aspects such as: adequate storm water drainage, durable electricity and fresh drinking water and durable community buildings. Explore biogas options for local waste management and dedicate site. Consider trunk infrastructure to provide for the rapid entrance/exit of emergency services and suitable drainage of storm water for example. Support installation of suitable landfill sites and the regeneration of those already in place. Consider storm walls, barriers and additional bridges in water prone and coastal areas in areas subject to landslides, built and managed through partnerships with local business, community and government. Ensure community centre or hall and other key communal infrastructure such as local market infrastructure, water points and shared toilets are given priority to robust structures that are located in a safe/dry part of the neighbourhood to double up as a possible shelter/safety point. Consider solar lighting for these community facilities. Promote the incremental process of putting electricity cables underground.	Undertake participatory processes to understand climate impact on affected communities, to learn about local building techniques and environmentally friendly available materials as well as to feedback inform any re-location strategy. Analyze local risk mitigation strategies, construction materials and design features (for both housing and other urban design). Adopt appropriate and agreed climate resilience targets in the city-wide slum upgrading strategy.

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