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Improving Sustainability Concept in Developing Countries

Land for Poor: Towards Sustainable Master Plan for Sensitive Redevelopment of Slums

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Abstract

Slums are considered as illegally occupied houses and creating a nuisance of environmental pollution and degradation of urban living conditions. The presence of slum as a part of urban habitat refers to a condition of defective physical, social and economic environment. During last two decades; migration from villages and small towns to metropolitan areas has increased. This leads to the degradation of urban environmental quality and sustainable development especially in the metropolitan cities. The problems faced by the people living in the urban areas have become major concerns for the government. Slums are considered to be the major issue within many urban areas; particularly problems related to transportation, population, health and safety.

The Egyptian government has adopted a range of policies and legislation to slow or halt the growth of informal settlements, but successes in improving or removing informal areas have been limited to specific communities and have done nothing to reduce the overall growth of informal areas.

The present study is for two slum areas. One is of Egypt (Ezbet Aljama, Alexandria) and the other in India (Dharavi, Mumbai). Since all the slums are not lying at same level of infrastructural development, it is necessary to know about the basic services and facilities like drinking water, electricity, sanitation, education and health services etc between and within the two slums.

Therefore, this study stresses to compare the living conditions and variation between the two slums. The major finding of the study is that learning from the experiences of other countries to help in “improve the quality of life and public health” in informal areas. And throughout the national and international experiences that took place about the slums, we can determine a number of recommendations to deal with the slums, which will create a balanced and sustainable master plan for sensitive redevelopment.

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1. Introduction

According to UN-HABITAT, around 33% of the urban population in the developing world in 2012, or about 863 million people, lived in slums. The proportion of urban population living in slums was highest in Sub-Saharan Africa (61.7%), followed by South Asia (35%), Southeast Asia (31%), East Asia (28.2%), West Asia (24.6%), Oceania (24.1%), Latin America and the Caribbean (23.5%), and North Africa (13.3%). Among individual countries, the proportion of urban residents living in slum areas in 2009 was highest in the Central African Republic (95.9%).

Slums form and grow in many different parts of the world for many different reasons. Some causes include rapid rural-to-urban migration, economic stagnation and depression, high unemployment, poverty, informal economy, poor planning, politics, natural disasters and social conflicts. Strategies tried to reduce and transform slums in different countries, with varying degrees of success, include a combination of slum removal, slum relocation, slum upgrading, and urban planning with city wide infrastructure development, and public housing projects (1).

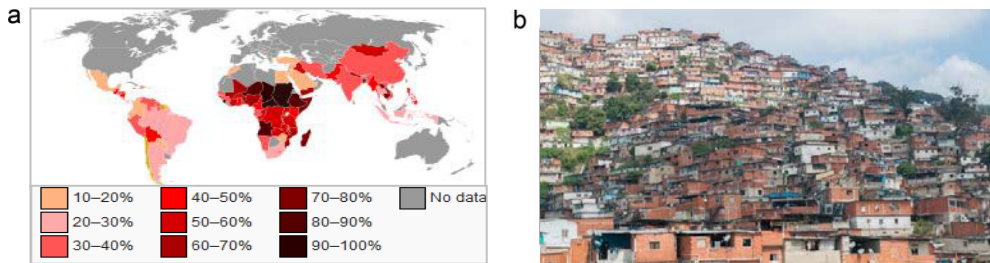


Fig. 1. (a) Percent urban population of a country living in slums ; (b) Petare Slums in Caracas (2)

2. Methodology

In order to achieve the stipulated aim, the study presented in this paper, traces the following steps:

- General Brief for slum areas in Egypt and India, then identify the selected cases for study.
- Compare the living conditions and variation between the two slums in many aspects.
- Present the Indian case study evolution to achieve the major findings of the study which is learning from the experiences of other countries
- Throughout the Indian case study evolution, we can determine a number of recommendations to deal with the slums, which will create a balanced and sustainable master plan for sensitive redevelopment.

3. Slum Areas in Egypt

There are a lot of informal areas in Egypt. According to the Ministry of Housing, at least 40 percent of the population lives in informal settlements in Cairo, with the percentage increasing since the 2011 Revolution. In Alexandria, there are at least 40 percent of residents live in informal areas (3). Yet another source of information, the Informal Settlements Development Facility (ISDF), estimates that 75 percent of urban areas in cities and villages throughout Egypt are unplanned and one percent is unsafe (4).

In June 2014, a presidential Decree No. 1252/2014 established the Ministry of Urban Development and Informal Areas (MUDIA), which will be the institution responsible for the implementation of the constitutional articles. There are two types of approaches that the government takes to informal areas: preventative approaches that are meant to limit informal growth and interventionist approaches in which the government either improves or removes informal areas (5).

3.1. Case Study in Alexandria (Ezbet Aljama)

Whether regionally or locally, we find (figure 2b) the share of Alexandria are 30 random areas until September 2007 with a total of 1,763,362 people who had shrunk to 22 major areas with a total of 1,084,353 people. According to the report of the Alexandria Governorate 2008 which examines the distribution of slums at the level of Alexandria, There is an Ezbet Aljama which lay in the middle district. It is more densely in populated areas in Alexandria, 22,071 people /acre, and is a vital example that can be a study area since it is small and limited 0.003 Km2 with a population of 7622 People (6) and high density of 254433people / Km2 (10690 people / acre).

Site location of (Aljama slum) (figure 2c), its presence on the axis is vital for the city of Alexandria. Mahmudiyah canal is a vital research that is under preparation and implementation for the establishment of the center of the movement of elongated connecting East and West of the city in the south to allow a new height of development, especially as there are a number of slums along the route of the canal Mahmudiyah (7).

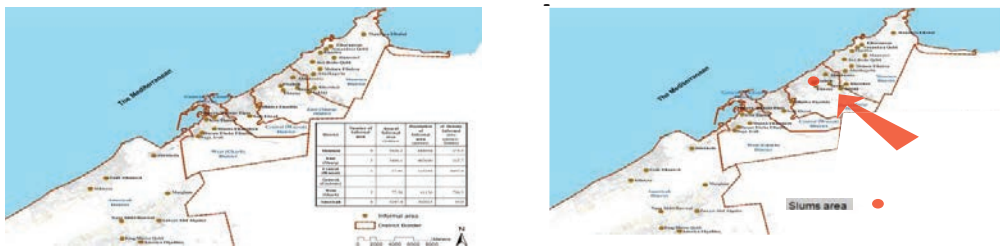


Fig. 2. Statistical Map Showing the Number of Squatter Areas; Site location of Aljama slum.

4. Slum Areas in India

During last two decades; the migration from villages and small towns to metropolitan areas leads to the degradation of urban environmental quality and sustainable development. Slums are considered to be the major issue within many urban areas; particularly problems related to transportation, population, health and safety. According to (UN-HABITAT) report, April 2007, India is a third world country that suffers from poverty, malnutrition, diseases, unhealthy conditions, and more in Indian slums (8). The World Bank launched the Bombay Urban Development Project (BUDP) in 1985. Through its Slum Upgrading Program (SUP), there is an approach of regularization of squatter settlements and supply of serviced land to manage the problem of slums (9).

4.1. Case Study in Mumbai (Dharavi)

Dharavi slum was founded in 1880s during the British colonial era. Popularly known as Asia’s largest slum (figure 3). Dharavi has an active informal economy in which numerous household enterprises employ many of the slum residents. It exports goods around the world. Leather, textiles and pottery products are among the goods made inside Dharavi by the slum residents. Dharavi has suffered through many incidences of epidemics and other disasters. Today Dharavi is home to over 600,000 people of all religions, castes and even economic strata, not just the 'poor'. Almost none of the people who live in Dharavi own the land, but a great many own their homes and businesses (some of which they rent out).

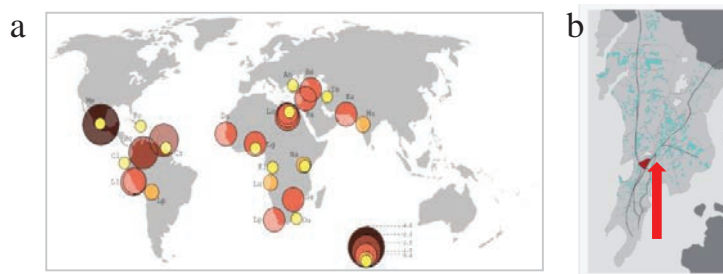


Fig. 3. Dharavi compared to other large slums in the world. Map according to Mike Davis (2006) ; (b) Map of Distribution of Slums Area in Urban Space of India and Location of Dharavi

Table 1. Compares the living conditions and variation between the two slums (Azbat Aljama, Alexandria, Egypt) and (Dharavi, Mumbai, India)



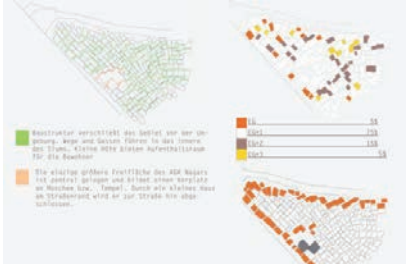
	Azbat Aljama,	Dharavi
Total area of the slum (figure 4)	<p>Through statistical data of the Central Agency for Public Mobilization and Statistics, according to the 2006 census for the Shyakt Azbat Aljama which include slum area of (Azbat Aljama) :</p> <p>The total area of Shyakt Azbat Aljama is 0.49 Km2 (figure 4a). but the area of slum zone is 0.007 Km2, the edges of slum zone (Azbat Aljama) are already out of limits of Shyakt Azbat Aljam, in the right side which located in Shyakt Alnozha (figure 4b).</p>  <p>Fig. 4(a). Area zone of Shyakt Azbat Aljama is 0.007 Km2 (8).</p>	<p>According to (UN-HABITAT) report, April 2007</p> <p>The total area of Dharavi over 200 hectares (500 acres)/ 2100 Km2 (figure 4c) (10).</p>  <p>Fig. 4(c). Area zone "Dharavi"</p>
Number of families	<p>The number of families is 10,744 population is 40,501 and 20769 males by 51% and the number of females is 19732 by 49%. This indicates the balance of the ratio between males and females.</p>	<p>The number of families is 106,000 families at an average of 6.2 people per house. 86,000 structures housing</p>
Densely Populated	<p>The densely populated of slum zone is 2,540,666 per sq. km but that of Shyakt Azbat Aljama is 82,655 per sq. km-. This makes the densely populated of slum zone of Azbat Aljama 30.7 times of the densely populated of Shyakt Azbat Aljama</p>	<p>The densely populated of slum zone is 17,000 per sq. km. Education Estimated 124 schools Including 4 Municipal Secondary Schools with regular attending students.</p>
Different Facilities	<p>-The number of households available and the means of electricity are 10536- 98 %.</p> <p>-The number of family's water supply is 10548-98%.</p> <p>-The numbers of families who have housing connected to the sewage are 10705-99.6%.</p> <p>-All these statistics indicate that the majority of housing is available with inadequate basic facilities / Suitable for housing in the incident with the networks of public facilities in the future (9).</p>	<p>Sanitation facilities Dharavi has a recorded value of 162 taps for water, which are usually blocked, and 842 toilets. Thus, there is little running water and one toilet for every 150 people (11).</p> <p>Many houses have electricity which they pay for, nevertheless, infrastructure is poor: few residents; open sewer lines spread disease and are a health hazard in the monsoon. Home to thousands of industries, including leather, pottery, textiles, food production; unfortunately, some of these industries pollute the environment and are unsafe for workers</p>
Urban studies	<p>The Exiting Planning Situation of Azbat Aljama (figure 5) explains the overcrowding of the slum. this means that there should be incentives and points of attraction in the region schematic that attracts the presence of population migration and talking to outside the region, which requires the search for these points to activate it in order to build on the outline of the</p>	<p>The Exiting Planning Situation of Dharavi (figure 6) explains that the Dharavi is split into 5 sectors, and each sector has a varying population. A 20% weight-age is given to each sector.</p>



Fig. 4(d). Comparison between the area zone of "Azbat Aljama and "Dharavi" scale 1:100000 (Researcher)



sustainable development of the study area (7)

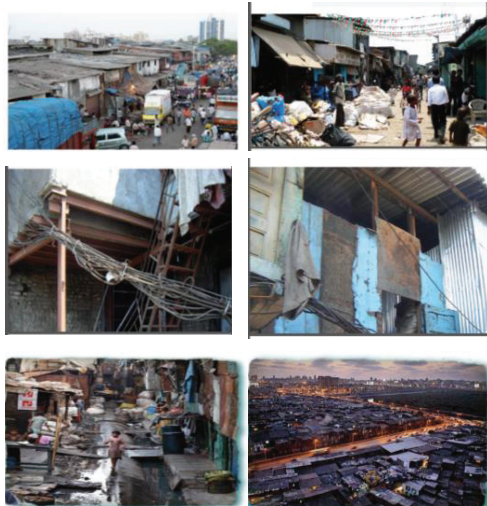


Fig. 5. Urban studies of Azbat Aljama Slum Area

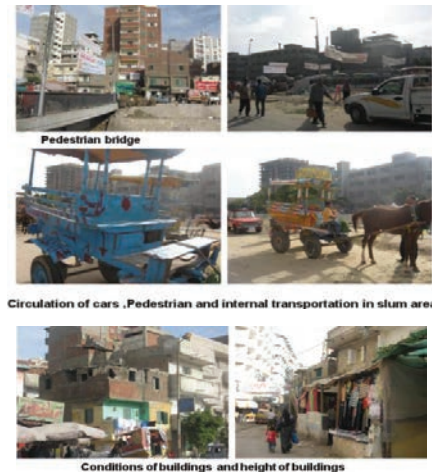


Fig. 6. Urban studies of Dharavi Slum Area (10).

5. The Potential of Land Readjustment

Land readjustment is a tool that can support sustainable urban development by allowing for planned and managed urban extension and densification. This technique brings a group of neighbouring landowners in a partnership for voluntary land contribution or sharing, joint planning and the servicing of their adjoining plots. It includes an equitable sharing of the costs and benefits of projects among public bodies, landowners and developers. The surrender of land for infrastructure and other public space needs, and sometimes also for sale to offset infrastructure costs, is a key characteristic of land readjustment. UN-Habitat believes that there are many potential benefits of land readjustment in terms of managing urban growth via expansion and densification. Landowners also benefit, as land readjustment improves the overall individual and neighborhood property values (7).

UN-Habitat has proposed a new approach for land readjustment called PILaR –Participatory and Inclusive Land Readjustment. The approach addresses many of the challenges of conventional land readjustment. For example, the new approach aims to have all stakeholders at the core of its development processes and to deliver a sustainable and inclusive outcome. Participation and engagement thus lie at the heart of PILaR with a specific emphasis on engaging the poor and marginalized and of recognizing particular vulnerabilities such as gender, age and youth. The approach also emphasizes early and consistent, but realistic, stakeholder participation to encourage community input and the ultimate ownership of the urban redevelopment. Local dynamics, such as community networks, heritage, culture and local business are also identified as a means to maintaining the core positive ‘local dimensions’ of a place within the change process (12).

5.1. Pilar's Potential Impact

UN-Habitat's PILaR model for densification and extension can:

- Provide affordable serviced land to reduce the negative impact of informal settlements,
- Through land value sharing, offer new public and private sector approaches to help finance infrastructure and share the burdens and benefits of development,
- Create a process that values local dynamics and supports local social and business networks, local culture and heritage and thus helps generate greater community support for urban development,
- Enhances inclusivity and overall urban livability and sustainability through its process and the infrastructure built (12).

6. Land Readjustment in Azbat Aljama

According to the previous papers, due date style they used digital land readjustment planning system as a way to develop and re.-plan the slums. This is done in terms of the use nature of the system of land readjustment planning system in planning of the slums. The system was often used in the re.-planning of the devastated areas after the war using newer computer technologies. An example of these technologies is GPS which is used in the signing of slums, identifying facilities, services and buildings, and population distribution of the whole area of slum and recording them electronically on a GIS program. Then this information is used to infer the output of land readjustment planning system as shown in (figure 6) (7).



Fig. 7. Land readjustment in azbat aljama, Alexandria, Egypt

7. Readjustment in Dharav

At present, the Government of Maharashtra Slum Rehabilitation Authority (SRA) has embarked on a process for redevelopment that attempts to once again capture the latent potential of Dharavi. The intent of the SRA is laudable and has generated immense interest in the developer community to embark on this formidable task.

The Dharavi Redevelopment Project (DRP) proposes several physical alterations for Dharavi (figure 7). The first and most crucial point, in terms of spatial planning, is regarding the division of Dharavi into five sectors (11).



Fig. 8. The Dharavi Redevelopment Project (DRP)

Table 2. The Dharavi Redevelopment Project (DRP) proposes several physical alterations for Dharavi

The Dharavi Redevelopment Project (DRP)	
Redevelopment that affirms Dharavi's role in Mumbai.	<ul style="list-style-type: none"> - A flagship project that becomes the pride of Mumbai. - Earmark suitable areas for new projects. - Open and merge Dharavi into the existing urban fabric of Mumbai
Prioritizing Dharavi residents	<ul style="list-style-type: none"> - Building varying sizes of quality, simple homes. - Design which adapts to the people and their culture
Implementation that empowers the community	<ul style="list-style-type: none"> - Give a sense of ownership and title. - Protect fragile social structures. - Opportunity to grow, improve and build upon
Based on strong urban design principles balancing commercial viability with public benefit, Dharavi can serve as a model for redevelopment in Mumbai	<ul style="list-style-type: none"> - Create a new landmark in the west business district for the west coast of Mumbai (for sale area). - Give back to the city with riverfront improvements. - Segregate industrial activities that are incompatible with residential uses. - Reinforce the cultural and social heart of Dharavi
Capture view and value	<ul style="list-style-type: none"> - Generate value through height in areas with good views and high visibility - A strong, clear address keeps new development distinct from the traditional identity of Dharavi - New development along open space edges will protect it from future encroachment
Ensure economic activity is maintained	<ul style="list-style-type: none"> - Unit design to be completely flexible to preserve a work-live lifestyle - Most work should stay within the neighbourhood

	- Move polluting industries to a dedicated area for cleaner environment and better service
Retain lower scale to preserve street life	<ul style="list-style-type: none"> - Avoid residents in towers with no work space - Do not discontinue residents_ ability to pursue active social lives outside their homes - Retain the unique and diverse fabric and sensibility of Dharavi_s streets
Build quality, permanent structures	<ul style="list-style-type: none"> Build quality homes that are safe, less fire prone, and protected from the elements - Provide clean water, sanitation and electricity - Design homes with good ventilation and plentiful natural light
Keep Dharavi Running	<ul style="list-style-type: none"> - Phased construction allows for minimum disruption to businesses and short time frames for household relocation - Protect the overall fragility of the Dharavi economic engine as it serves vital needs for the entire city
Residents take a stake	<ul style="list-style-type: none"> - Community responsibility for maintenance engenders pride and identity - Idea similar to micro financing uses commitment of households to the upkeep of redevelopment rather than outside capital - Reduces need for oversized infrastructure Peer pressure as a tool to ensure the quality of environment

Table 3. explains the SWOT analysis of Land Readjustment Planning System between the two slums “Azbat Aljama” and (Dharavi” (Environmentally)

Azbat Aljama. (Alexandria, Egypt).				Dharavi. (Mumbai, India).			
Strengths	Weaknesses	Opportunities	Threats	Strengths	Weaknesses	Opportunities	Threats
1- The availability of resources and assets of environmental and recreational and tourist distinctive suit the tourist activity	1- Environmental pollution represented in the industrial area Smouha	1-Providing a source of water to help irrigate the green areas	1- Environmental pollution may destroy the natural environment of plants and animals	Proximity of open areas	The existence of poverty in the services and infrastructure	Reduce pollution	1-Lack of access to all the houses within the slums area and the fear of the old concepts of housing by conventional removal of slums, which may affect the proportion of questionnaires for the region.
2-Diversity of the natural environment of plants and animals	2-Scarcity (lack) of green spaces	2-The mild Climatic conditions given the sustainability during the periods of the year of tourism activities	2-The presence of erosion in the southern border overlooking the international route	The presence of a port on the Pacific	Localization of disease epidemic	Improving environmental awareness	2 - The difficulty of obtaining accurate data about the monthly incomes, especially with the presence of some illegal trades or reluctance to give information because of the fear of envy.
3-The availability of resources and good elements of the activity of fishing on canal Mahmudia	3-The presence of low-lying areas in the site of the project		3-The presence of Pockets of ground in the site of the project	Diversity of environmental sources	Environmental pollution to some character	Finding new ideas and sources of pollutants resulting from the character traded	3- The risk of the expected presence of

4-Topographic diversity which giving the character of each region	intransigence and refusal from the people of the studied region.
5-climatic conditions are mild for most of the year	

Table 4. explains the SWOT analysis of Land Readjustment Planning System between the two slums “Azbat Aljama” and (Dharavi” (socially)

Azbat Aljama. (Alexandria, Egypt).				Dharavi. (Mumbai, India).			
Strengths	Weaknesses	Opportunities	Threats	Strengths	Weaknesses	Opportunities	Threats
1-Lack of accumulation of a population in the region	1-Low level of education	1-Make a comprehensive development to the region to improve the level of social and educational	1-Migration of the original people from the project location in case of remove and replacement of actives and uses without any development for recent actives	The existence of a unified social fabric	Poverty and ignorance and disease	Find a sustainable social development	. 1 - Extrapolation of the region’s inhabitants in the proposed outline for the study area using the land readjustment planning system, which requires holding seminars with local people to explain the proposal, its implementation mechanisms, the stages of implementation and its expected benefits in the short and long terms.
2-There is no special social nature of the inhabitants of the region, helping to set up new communities without causing discord between indigenus people and immigrants	2-Decline in living standards for families	2-Linking the east bank of canal Mahmudia and west bank canal Mahmudia by internal roads networks	2-Lack of recreational and economic incentives encourage the transition to the region	Unite cultures and religions in the region	Poverty services Lack of privacy	Improve the social situation of the new generations	
	3-Lack of communication between residents of the north and south of study area	3-Job opportunities in the region of the elements of attraction for stability in the region	3-The difference between the workplace and housing for migrants residents which giving difficulty in moving from Alexandria to the project area	The presence of an educated generation interested in the development		Develop a culture of community	
				Juxtaposition of the region with the city of Mbobay			

Table 5. . Explains the SWOT analysis of Land Readjustment Planning System between the two slums “Azbat Aljama” and (Dharavi” (Economically)

Azbat Aljama. (Alexandria, Egypt).				Dharavi. (Mumbai, India).			
Strengths	Weaknesses	Opportunities	Threats	Strengths	Weaknesses	Opportunities	Threats
1-resources and assets of environmental and archaeological characteristic suitable for tourism activity	1-Poor infrastructure needed for economic development (roads,transport,communication)	1-Interest and support of political leadership	1-Lost the political support with the passage of time through the stages of the project study	The presence of sources of income for the people of the region	The lack of a unified system of income distribution	Sustainable development for the people economically dependent on the character and small projects	Lack of financing during the course of research which depends on the submitted
2-The richness of land suitable for	2-Limited financial resources allocated to economic development	2-The presence of Axis International Coastal Road	2-Waste facilities and resources available in the projects that do not commensurate with the resources of the region	And having the opportunity to set up development projects	Lack of financing sources of the people overall economic	The existence of an investment fund for some	
	3-The absence of a clear plan and mechanisms for economic development, represented in	3- Project to modernize the Egyptian industry					
		4-The project of establishing the					

cultivation of environmental	tourism, fishing and exploitation of natural resources in the region	industrial zone Rashid	3-The inability of the local economy to meet the needs of local and regional	based on the people	development	of the development	and approved
3-The availability of resources and distinct elements suitable for		5-The presence of the petroleum industry projects on the coastal road and the exploitation of the proximity of exotic ports and airport	4- Aggravated the unemployment problem	Proximity to the city Mbobay		projects of new spots available	financing plan. This impedes the following stages based on this stage
4-Availability of raw materials and workers necessary for the industries		6-Willingness of investors from outside the city to participate in economic development projects.	5-Increasing poverty and declining living standards, where data indicate the Human Development Report, Alexandria governorate that the total population under the poverty line 22%			Government participation in the city's economic linkage mother Mboba	
5-Willingness of the people of the region to contribute to economic development projects		8-Manufacturing environment-friendly one of the projects appropriate to the project site, including provides job opportunities for the indigenous people and to immigrants	6-Pollution of the environment as a result of poor environmental management of some industrial and economic activities				
			Lack of regulation of fishing in the region				

8. Conclusion And Recommendations:

Throughout the national and international experiences that took place about the slums, we can determine a number of recommendations to deal with the slums, which will create a balanced and sustainable master plan for sensitive redevelopment that is based on the following principle

- ❖ Respect for the preservation and enhancement of local culture and its important function in the greater framework of the city.
- ❖ Creation of transitional development and the maximizing of cultural potential through enhancement of the physical environment;
- ❖ Recognition of the need to accommodate modern real estate development as part of a larger development strategy.
- ❖ The need for commercial and preservation approaches to be integrated and linked harmoniously as part of a strategy.
- ❖ The cultural importance of the delicately scaled streets and the human-scaled physical nature of the villages are essential to the slum core lifestyle and sense of security.
- ❖ To rebuild with new technology, provide public services, create opportunities to continue intergenerational lifestyles and trades, and at the same time open doors that lead to transitional development.
- ❖ The slum must not lose the spirit, life and contributions of the residents of the city.
- ❖ Based on strong urban design principles balancing commercial viability with public benefit
- ❖ Bring all stakeholders to the table and discuss the implications under various redevelopment scenarios;
- ❖ Social volunteerism and community participation as key factors to earn title.
- ❖ Build quality, permanent structures
- ❖ Ensure economic activity is maintained
- ❖ Capture view and value

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