

Slums: Prevalence, prevention and solutions

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Abstract: Slums provide shelter for nearly one-third of the world's urban population. Most of the time slums are taken as the reason for urban housing mismanagement. High expected income in urban areas is one of the major causes of hasty urbanization which ultimately results in the creation of slums. In literature, neither there is any consensus on the definitional aspect of the slums nor on their causes and effects. The present study aims to analyze the socio-economic conditions for households of slums along with the historical background. The study also provides a critical analysis of slum management policies adopted by various countries with a special focus on Pakistan. The study concludes that rapid urbanization resulting in slum proliferation reflects the loopholes in city planning strategies which should be tackled carefully. Lack of decentralized efforts, insufficient budget, poor human resources and weak practicality of these projects are the main causes to worsen the issue.

Key words: Slum; Urbanization; Informal settlements; Housing; Socioeconomic conditions

1. Introduction

Currently, the urban population consists of fifty percent of the world population and is expected to rise by seventy percent until the middle of this century. This rapid urbanization is directly proportional to the increase in informal urban settlements generally known as shantytowns, slums and katchi abadis. Similarly, while discussing Pakistan, for instance, nearly 60% of the urban population is living in shantytowns. Some of the Pakistani slums are counted in the top ten world ranking slums. Similarly, many other countries show similar statistics regarding migration and the emergence of slums. This rapid urbanization resulting in a growing number of people living in slums has become a burning challenge especially for the developing countries of the world from the previous four decades (UN-Habitat, 2011; Patel *et al.*, 2012).

Furthermore, there is a need to understand slums and Katchi Abadi, a word used for informal settlement in Pakistan. In this paper, the author will use the definition of slums that were proposed by the UN-Habitat Expert Group Meeting (EGM) held on 28–30 October 2002. The meeting was held to define slums in order to ensure the efforts towards target 11 of Millennium Development Goals (MDGs). According to this census building exercise "A slum is a contiguous settlement where the inhabitants are characterized as having inadequate housing and basic services. A slum is often not recognized and addressed by the public authorities as an integral or equal part of the city" (UN-Habitat, 2003a).

This definition encompasses traditional views on slums, the old inhabited areas which are no more desirable as deteriorated because of neglect and original owners rented them out to poor people or migrants and also include squatter slums, illegal settlements which violate the authorized construction regulations. The second type of slums usually established on urban periphery and on vulnerable and high-risk areas including railways lines, riversides, steep hill, near dumpsites, under overpasses, and in flood-prone areas.

Even though there is slight controversy in defining and classifying slums but EGM proposed the operational definition of the slum as a group of individuals sharing the same roof necessarily in urban areas and facing one or more of the following problems:

- lack of basic necessities as improved water and sanitation
- substandard and non-durable housing
- insecure residential status
- insufficient and overcrowded living space

Slums and katchi Abadi word is interchangeably used in documented literature within south Asia. On the basis of the above definition, slums can be taken as a by-product of social and economic factors which are the result of massive urban migration.

The intention behind this immense urbanization is to find out better-living standards, employment opportunities and better health and educational facilities. These migrants take urban or slum better than rural living standards. But these migrants face severe problems regarding sanitation, health, education and employment. Resultantly, the people of these areas usually trapped in a vicious cycle of

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poverty which results in low living standards, illiteracy and low human capital. Low level of human capital makes this cycle long lasting. While, discussing the role of slums some economists have presented a “modernization” theory of slums. According to this theory, slums are a transitory phenomenon or a stage in the process of development. These informal settlements approach to developed areas as the economy grows and health, education as well as employment situation and; other facilities improved with the passage of time. Additionally, people living in these areas become stable and get jobs.

At international level, both developing and developed countries have admitted slums as problem and now they are focusing on the formulation of plans and establishment of strategies to cope with this challenge. Some of its examples are introduction of a bill by United States in 2011 for increasing financial development budget for “Shelter, Land and Urban Management (SLUM)”. Similarly in developing countries upgradation of living standards of slum dwellers were considered an important policy agenda by UNDP, the eight target of MDGs was designed to upgrade the living standards of slum inhabitants by 2015 (UNDP, 2000), and eleventh target was to improve the living standards of at least 100 million slum dwellers by 2020 (UN-Habitat, 2003b). In spite of being the center of attention still these MDGs hardly dent the growing magnitude of slums and the proposed 100 million only dealt with eleven percent of existing slum population (Arimah, 2010).

Wellbeing of slum dwellers can better be achieved by revision of target, by providing suitable substitutes to new slum formation by pre-emptive measures and prioritizing slum prevention programs (Garau *et al.*, 2005). These efforts evolved urban authorities for policy formulation process for slums including different strategies, for example: “in-situ” development of slums, relocation to the resettlement colonies, and to slum removals. These strategies can be characterized in five categories according to years: in 1950 as “Laissez-Faire” (Bourgin, 1994), “Site and Service” in 1970s (Var-der-Linden, 1986; Pugh, 2001), improved to “Slum Upgrading” in the 1980s (Banes *et al.*, 2000), turned to “Tenure and Enabling Approach” in the 1990s (Thahane, 1993) and Slum-free cities” in 2000s (World Bank, 2013). In the next section detailed review of the historical background of the slums is presented. Section 3 provide detailed description of socioeconomic conditions of households in slums. Section 4 provide slum management policies whereas section 5 provide actions taken by Pakistan. At the end, conclusion of the study is provided in section 6.

2. An overview of slums in Pakistan and world

The earth has urbanized even faster than originally predicted by Malthusian 1972 report, limits of growth. If we start from past, in 1950 the share of urban population in the world was 32% and

over the time this rate is increasing progressively as it reached to 39% in 1980 and 48% till 2000. Till 2011 more than one half of the population migrated to big cities which was just one third in 1950 and it is expected that this rate will increase to 60% till the third decade of this century (World Bank development indicators, 1999). This huge urbanization results in a big share of informal settlements in cities worldwide, almost 860 million people are now living in slums, and slum dwellers rose at a rate of 6 million per year in the last two decades. The urbanization is not only growing in terms of population but also in-terms of cities. There were only 86 cities in 1950 in the world with over one million people and this figure reached to 400 in 2002 and is expected to approach the figure of 550 till 2015 with almost 60% of the population of the world (UN Population division). This yearly trend is progressively increasing.

Alike rest of the developing countries, in Pakistan the share of urban population was 17.8 percent in 1951 which rose to 28.3 percent in 1981 and 32.5 percent during 1998 (Population and housing Census of Pakistan, 1998). Such higher urbanization trends arise mainly because of inadequate employments avenues and low quality of life in rural areas, but they have to face many problems due to limited urban infrastructure and housing facilities in urban areas.

UN-Habitat estimated the share of slum’s population as a percentage of urban population by taking 2001 as base year and a household can be identified as slum resident if it lacks one or more of the specified urban facilities. For this purpose, UN-Habitat used almost 310 sources including Demographic and Health Surveys, Multiple Indicator Cluster Surveys, Joint Monitoring Program for Water and Sanitation, and other surveys and census data. To find the slum population these data were reviewed on multiple levels according to EGM slum characteristics and then grouped for share of slum dwellers as percentage of urban population. But the methodology lacks the social, economic and cultural aspects of slums which are necessary for multi dimension characterization of slums.

While discussing inter country variations in slums as percentage of urban population, inter continent and inter country level analysis can be explored by using UN-Habitat data. According to the analysis, summarizing slums as percentage of urban population, Africa lies in highest region with 70% of slum population in urban areas, whereas Asia with 41% in high region and Latin America and Caribbean in modest region. Even within these continents prevalence, there are significant variations among countries.

If we divide prevalence of slums in very high (greater than 80%), high (from 60% to 79%), moderate (from 40% to 59%) and low level (less than 40%). By focusing on the country wise decomposition, countries having very high prevalence of slums are Afghanistan, Bangladesh, and Nepal. Moreover, countries showing high

incidence consists Cambodia, Laos, Mongolia, and Pakistan. On the other hand, Yemen, India, Iraq, Iran, Kyrgyzstan, Lebanon, Oman, Philippines, Tajikistan, Uzbekistan, Vietnam and Turkey experienced modest occurrence. Interestingly, Azerbaijan, China, Indonesia, Israel, Jordan, Kazakhstan, Kuwait, Myanmar, Qatar, Saudi Arabia, South Korea, Sri Lanka, Syria, Thailand, and United Arab Emirates lies in low prevalence region. This illustration is self-evident that countries with very high and high level of prevalence experience low level of income, high poverty rates, and rapid urbanization. Modest and low level or slum incidence shows better per capita incomes, relatively established economies, less poverty, and moderate to low urbanization trend. Low level of slum prevalence shows the commitment of authorities to lessening these slums by improving provisions of basic facilities and prevention (Arimah, 2010).

When we took a glance on the history of Pakistan, in twenty-six years from 1976, the total population increase has risen by 50.13%, whereas, the number of households in these slum areas have risen by 35.68%, having a low trend between 1986 and 2000. Pakistan lies in high prevalence region with respect to incidence of slums. Pakistan has high slum population at-least more than 60% and having more as compared its economic competitors India, Iraq, Iran and Sri Lanka. High slum population reflects the low income activity and high poverty rates, growing urbanization trend and less effective regulatory framework for slum up-gradation strategy in Pakistan. Pakistan is in dire need of research to formulate effective policies to up-grade and prevent these slums proliferation.

3. Socio-economic conditions of households in slums

List of problems faced by the households living in the slum areas is very large. Following are some of the major issues that are faced by the households living in the slum areas.

Human services: Reasons of migration from rural areas to cities are search of better human services which those people lack in rural areas. To some extent this search is justified as cities have these facilities in a better form. Residential facilities, government provided sanitation, public transportation and provision of children programs and basic needs become closer to people after migration. The situation become clear after migration as availability of all these provisions is subject to affordability which is relatively high as compared to villages. A large number of migrants have to stay in informal settlements and become the part of slums. Living conditions in slum areas are worse as compared to rural counterparts, they have migrated from. They are not only more vulnerable to infectious diseases and malnourishment but also relatively more exposed to risks at work place (Ameratunga *et al.*, 2006). Long term work in this

environment leads them to ailing life and low productivity.

Housing and Infrastructure: While discussing housing and infrastructure, houses are mostly inadequately ventilated and have bad indoor air which results in respiratory infections. Massive agglomeration in cities put an upward pressure on property prices and leaves living much more expensive as compared to rural areas. Property prices aggravated due to cost of mobility if the displacement cost is high one is willing to pay more for house or ready to live in slum or informal settlement. Slums are usually located on agriculture land or public land leaves less land for agricultural activities. To fulfill the food requirement more fertilizers are used leads to low quality food hazardous for life. Water and sanitation facilities are also far below the satisfactory level. Even though the need of safe drinking water is admitted as basic need but still in many slums public supply of safe water is unavailable or if available water quality is not up to the mark (Panda, 1993, 2013). Even within the slums, households are not treated equally. According to Marx *et al.* (2017) provide evidence of ethnic patronage in the determination of rental prices and investments. Slum residents pay higher rents, and live in lower quality housing when the locality chief and landlord belong to the same tribe. Conversely, rental prices are lower, and investments higher when residents and chiefs are co-ethnics.

Pollution and contamination: Rural urban migration leads to traffic congestion, water and air pollution. According to British newspaper, ten percent of diseases in urban population are caused by pollution and contamination. This rate is high in developing countries especially for migrants living in backward areas of cities called slums. According to report of World Health Organization, 80% of urban population are exposed to pollution more than the tolerance level. The massive migration exceeds the natural capacity of cities to handle waste, and availability of land and resources cause deterioration of environment which badly affects the quality of life in slums.

Drainage Problem: Moreover, slums generally do not have any drainage. The streets are narrow and unpaved; slum dwellers have to face water stagnation in rainy season. This makes the environment of that area very unhygienic. Such environment causes a number of diseases in slums (Dziuban *et al.*, 2010). Slums are generally located near most vulnerable places like railway tracks, banks of runnels, factories and busy roadsides which expose their dwellers to vehicular, environmental and industrial pollution. The living environment of these areas is injurious to health and put their inhabitants to high burden of diseases (Gulis *et al.*, 2004). Slums are also located on banks of canals and areas covered by concrete and asphalt. Rain in large proportions cannot be absorbed by soil and results in large accumulation of water called flood, cause disaster not only for residential and commercial areas but also for public buildings and

infrastructure. Roads and bridges are also affected by over utilization due to extensive population increase in urban areas.

Health, Education and Employment opportunities: Health and education of migrants can be seen bilaterally as their migration provides access to more public and private health and educational facilities. At the same time, the increased demand on the given health and education services leads to excess demand and increase in prices or unavailability for some. Slum dwellers migrate to cities for better facilities and employment opportunities but these areas illustrate poor earnings because of bad employment opportunities which ultimately cause low literacy and education, high poverty rates and bad health status. Due to lack of human capital they have to engage in informal sector which force them to work in unhealthy and harmful environment (Alamgir *et al.*, 2009). At the same time with these low paid jobs they can't even feed and facilitate their family properly.

Hot and humid environment: Because everyone is crammed in one central area there is a reduction in the flow of air which results in a humid weather. Socio economic problems of slum residents don't end here; slums have lack of property rights their residents even don't have ownership rights of the land where they live. They usually settle on the vacant non-productive and undesirable marshy land. They have to face the risks of land sliding, floods and unsafe environment (Unger and Riley, 2007). Slum inhabitants also lack of basic human rights like education health and employment. Literacy rate is very low in these areas and they don't consider it important to educate their children and unfortunately condition of women is worse as compared to men. They have many problems in supply side factors of education because authorities are reluctant to consider these people in planning and policy making (Roberts, 2000). Human trafficking and prostitution, prostitution has been always an integral part of urbanization. The more a society open up to the world and new cultures become integrated the more complex are the crimes which are prostitution and human trafficking. Many person are also trafficked to city with the promise of good paying jobs or other opportunities only to be pushed into prostitution or slavery.

Sanitation Condition: Sanitation condition is very bad in slums; there is no proper system of cleanliness, garbage collection and drainage system. Safe drinking water and enough water for household chores are not available. They have to bring water for drinking and other uses by themselves which make them to live in adverse conditions with limited water (Bandyopadhyay and Agrawal, 2013). Unavailability of safe water is considered the root cause of diseases, difficulty in obtaining and question on water quality make them vulnerable to diseases. Almost 2 million people die because of diarrheal diseases every year and children under 5 are its major victims (Graf *et al.*, 2008). These people don't have awareness regarding precautionary measures

against diseases. Risk of diseases can be decreased up to 47% just by making the habit of hand wash with any anti-bacterial agent (Curtis *et al.*, 2000).

Inequality, poverty, and crime rate: slums inhabitants have to face inequality, although they are living in cities but still lack sanitation, health and education facilities. Unemployment rate is very high in these informal settlements (Ali, 2010), which trapped these poor souls in vicious cycle of poverty. Poverty is another important characteristic of the slum people; they don't have enough sources of income as a result most of them live below poverty line (Ompad *et al.*, 2007). These informal settlements are ignored by city development authorities. Documented literature shows the positive relation in size of cities and crime level. The people of slums have to face criminal activities because of weak law and order situation in these areas and sometime slum dwellers are involved by themselves in these activities as a result of unavailability of job and high poverty level.

Urban poverty or inter-city income differences in low income countries are considered the main proliferation of slum and informal settlements resulting from intra country migration. Policy maker's concerted strategies towards slums formation changed from time to time in last few decades, starting from benign neglect or Laissez-Faire state to enforced eviction or demolition and relocation by legalizing them to slum up gradation plans and recently converted to adoption of enabling strategies.

Even though socio economic conditions are not same in all slums but no slum can be considered desirable place for human living. Living conditions of the slums in developing countries are worse as compared to developed countries. Their people are living in adverse environments due to which children and women face severe consequences. Poor maternity awareness and treatment facilities result in high infant and maternal mortality rates. Similarly, malnutrition leads to high morbidity rates and in both children and women (Awasthi and Agarwal, 2003). Another important characteristic is overcrowding also contribute to high epidemiological prevalence in slums. Epidemic-prone infections in overcrowded areas can cause influenza, rheumatic heart disease, a chronic and debilitating disease (Siegel *et al.*, 1997).

4. Slum's management policies

In developing countries, government authorities took slum formation as immediate effect of independence and adopted a policy of Laissez-Faire attitude and although considered it illegal but a temporary phenomenon which will disappear automatically with economic growth (UN-Habitat, 2003a). They adopt the benign neglect policy as they see slums as vestiges of customary rural community which was being obsolete by urban policies of colonial administration (Njoh 2003). As a slum prevention policy, governments followed low-cost

housing projects with the belief that these houses will eliminate slums with sustainable economic growth. Regardless of its laudable targets, program was futile to cope up with the continuous growing need of houses for its tended beneficiaries.

Between 1970s and 1980s, after the failure of benign neglect policy to slum elimination, slum dwellers were forced to leave their residence against their will (Olds *et al.*, 2002). Its major example was in Zimbabwe on 25 May 2005, when governmental authorities initiated "Operation Murambatsvina", in the local Shona language, this literally translates to Operation Drive out Filth under slum clearance campaign. The removal policy affected 700,000 people either losing their job or homes or both. It also affected 2.4 million, almost 18% of Zimbabwe population to different extents (Tibaijuka, 2005). It also badly affected the informal sector of employment which was a great source for economic growth. Example of Zimbabwe and other developing countries demolition practice made clear that slum removal policy is just a displacement rather than elimination strategy with major focus on symptoms instead of root causes of slum formation. This policy is also practiced in Pakistan major cities including Islamabad under CDA slum removal plan.

Unfruitful results of slum clear-up policy highlighted the need of some better planned strategy to the issue. Resettlement or relocation of slum inhabitants was the new strategy to handle informal settlements. In this policy slum inhabitants were offered plots or houses in place of their slum residence after considering them legal owners of their evicted land (Cheema, 1987). This policy was planned to be exercised after a brief consultation with evicted people but in reality major relocation operations were done without meaningful dialogs with the intended beneficiaries. The hastily process missed their tie with executing bodies as a result new offered locations characterized with inadequate services, poor infrastructure and weak accessibility. Its major example was relocation of slum dwellers from Brasilia to Samambaia in Brazil in late 1980s. In case of Pakistan, one of many examples is relocation from Muslim colony to Farash town in Islamabad.

Given the failure of above mentioned strategies World Bank encouraged many developing countries to upgrade these informal settlements by providing them the better basic facilities, improved infrastructure including sanitation, clean water, paved roads and walkways and community services such as playgrounds, markets and public education as well as health centers (Abelson, 1996; World Bank, 2000). Regardless of the impressive results of these strategies, still they were critiqued on many grounds. For example project-oriented approach may lack sustaining process, to process these policies in fast pace had neglected the active participation of intended beneficiaries, weak back up plan of land availability, institutional and financial mechanism and no serious focus on poverty alleviation (Abelson, 1996; Okpala, 1999; Werlin, 1999; Tebbal and Ray, 2001; Gulyani and Bassett,

2007; Richter, 2011; Roy *et al.*, 2014; Bird *et al.*, 2017).

For sustainable up gradation process World Bank and UN-Habitat introduced two major plans, Cities without Slums (CWS) action plan and Slum Upgradation Facility (SUF) with alliance of cities, international donors and financial institutions. CWS was based on the notion that slums are manifestation of urban poverty, so slum up gradation is hidden in reducing urban poverty and forestall the upcoming growth of slums. To maintain slum upgradation process SUF was implemented by UN-Habitat for successful mobilization of capital for slums improvement (UN-Habitat, 2006). Both plans were practiced with combine package of financial, technical and political components. For successful implementation of SUF a pilot project is designed and will be practiced with US\$30 million over a period of three years.

After CWS and SUF, Still there was space for more effective policies so an approach was promoted by World Bank and UN-Habitat in 1999 as global campaign for Secure Tenure by focusing on security of tenure and enabling strategy especially for slum inhabitants. This strategy based on the notion that even though slum dwellers don't own the land legally, they can undertake residential changes if they have confidence of not being arbitrarily evicted. This strategy also worked on secure occupancy system to minimize administrative lags by encouraging the negotiation rather than forced demolition (UN-Habitat, 2004). This policy results in many health outcomes as in the absence of secure tenure campaign existing slums would trap in vicious circle of construction, forced eviction and illegal construction again. It not only encourages the residents to invest on residence and build a good environment for living but also improves the existing services and appeal to more required facilities. The campaign was not only helpful for households but equally beneficial for community as increase in tax collection on property and economic activity strengthens the financial base of metropolises and enhances social peace and stability at the same time (Durand-Lasserve, 1999).

5. Mapping slums

In recent decades, rapid expansion of urban population has increased the vulnerability of migrants especially slums dwellers or informal settlements to economic and climate shocks. City development authorities responded to these challenges by demolishing these slums and making their people homeless. Human right organizations and Non-Government-Organizations (NGOs) are continuously trying to stop this eviction of slum dwellers but still not fully succeeded. These people don't have enough legal or political worth to claim their right as nationals of Pakistan. Pakistan government authorities are formalizing these informal settlements from time to time but their challenging growth force these authorities to

demolish slums in different cities of Pakistan especially in Islamabad.

Economic development around the globe has empowered people but it contributed little for rights of slum dwellers especially empowerment of female slum inhabitants. Ultimately slum inhabitants are more vulnerable to negative economic, climate and environment shocks. Slums and informal settlements are result of unconstrained urbanization and rapid economic growth. Even though residents of these slums are more vulnerable to climate and environmental shock but the extent is high for females, they have to face insufficient sanitation, water, poor housing health and educational facilities more likely. This thing limits their economic empowerment by wasting time and limiting employment opportunities. Slum management needs information of existing slums population and estimate of future increase, but the slum population increase rapidly. Even though Islamabad is a well-planned city but still its population and informal settlements are growing above estimates. Almost forty percent of the slums are notified and remaining slums are illegal.

The slums challenge needs a serious focus and should be handled rapidly and carefully. The main issue in mapping slums is the unavailability of data to understand and handle real issues. Data of the identified slums is available to some extent for South Asian region but for non-identified slums it is missing. Some countries manage extensive data on social indicators and have worked on comprehensive reports for policy concerns. In Pakistan, mapping for some large non-identified slums is in process for Islamabad and Lahore. In absence of geographical boundaries most of the non-identified slums don't have postal or physical addresses, which bounds policy makers from making well-meaning policies. Slums required proper demarcation for effective policies and allocation of funds for provision of services. This can be done by using ArcGIS and Google earth.

Currently most of the cities in Pakistan are adopting the slum demolition policy in order to achieve New Urban Agenda Goals. A number of unrecognized slums have been demolished or merged with other slums. These goals can be achieved by upgrading and empowering slums in a better way by including these under-privileged people in mapping process and for data collection. Policy implementation can be more effective by focusing on more vulnerable and affected people as women. Policies may introduce new safeguard ways to reduce their vulnerability to climate and social hazards.

The upgradation process needs identification of identified and non-identified slums. This can be aided by using satellite based techniques and physical surveys which can help to figure out the geographical boundaries and key indicators regarding demographics and migration process. To identify geographical location and population size remote sensing technologies e.g. QuickBird,

IKONOS[†], and Google earth can be a simple and less expensive way. These technologies can be used by anyone having simple Global Positioning System (GPS) and internet connection to identify geographical coordinates for further policy purposes. Google earth gives a clear and high resolution images at different time periods to present alternative solar illumination angles and city blocs under various lighting conditions.

For better policy formation, Global Information System (GIS) data should be merged with physical surveys and geo-located photographs. Physical surveys are equally more important as remote sensing techniques which cannot provide the internal socio economic indicators and microstructure of slums on their own. Physical surveys not only provide unique postal codes and addresses but also can help planners to know about property and housing structure, education, health, sanitation and water related issues. Allotted postal addresses can be used for correspondence, bank accounts, obtaining ID cards and to access for social benefits.

Mapping and policy formation process can better be aided by involving slum dwellers, NGOs, local community as well as public representatives and government organizations and officials. Local NGOs can identify slum households and ensure the availability and accessibility of primary health care, education and other social services. Better social and economic wellbeing has been witnessed by active participation of slums inhabitants in mapping and planning process.

6. Conclusion

Slum upgradation, prevention and alternative solutions for future slum formation are only possible after proper understanding of the factors that trigger the slum proliferation process. Unfortunately, developing countries lack in understanding of driving forces of slum emergence and this situation can partially be attributed to the nonexistent empirical link through research available on slums formation and its driving forces at national and local level. Furthermore, it can also be explained that the unavailable or fragmented data on slum prevalence, population and mapping on various longitudinal resolution levels.

Cities are considered the driving force to economic growth, but this can come true with effective policies. In absence of proper policy formulation and practice, cities may cause negative effect in growth process and welfare through slum formation. Slums usually lack the basic necessities and services that can just be fixed with not only

[†] QuickBird was a high-resolution commercial earth observation satellite, owned by Digital Globe launched in 2001 and decayed in 2015. Whereas, IKONOS is a commercial Earth Observation Satellite and was the first to collect publicly available high resolution and IKONOS imagery began being sold on January 1, 2000.

understanding and elaborating the issues through research but also with satisfactory course of actions. Existing efforts are not enough to meet targets so centralized policies, strong governance and institutional arrangements and financial allocation should be enhanced to achieve these time-barred operations. Lack of decentralized efforts, insufficient budget, poor human resources and weak practicality of these projects are the main causes to worsen the issue. Macro level efforts for basic services as education, health, water, sanitation, housing and security of tenure are direly needed. Macroeconomic stability is required to increase economic activity and reduce debt burden to improve and prevent slum incidence.

Slum proliferation can be controlled with the increase in per capita income, overall economic growth and welfare. Authorities can improve the wellbeing of slum dwellers by specified income generating programs especially for people with income within lowest 20% of income groups. Secure tenure can also play its vital role to safeguard their rights and all this is possible with strong will of political and institutional entities. Rapid urbanization resulting in slum proliferation reflects the loop holes in city planning strategies. Metropolitan authorities can improve the situation by proper planning and increasing facilities. Regulatory framework should also increase its role to undertake the issue for proper campaign and implementation.

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