Emergence, Growth and Management of Slums around the Globe with a Special Focus on Pakistan

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Abstract

In the past few decades, the world has witnessed massive urbanization to access better living standards including better employment, education and health opportunities. This urbanization trend ends in the emergence and growth of informal settlements and highlights the urban dualism. This rapid urbanization amounts to the crisis of housing, employment opportunities and other basic facilities. In this regard, this study is an effort to provide the baseline understanding of slums of developing countries in general and Pakistan specifically. It also attempts to provide the definition of slums and the actual status of slums across the globe with a special focus on developing countries. Socioeconomic and living conditions of the slum dwellers in developing regions are also explored in this study. This also concludes that the status of slum residents need proper recognition, identification and mapping for the improvements in their living standards and provision of public facilities. It also provides some ways to identify the slum dwellers and mapping of slums in urban peripheries of Pakistan.

Keywords: Rural-urban migration, informal settlements, slum, socioeconomic problems, management policies, mapping of slums

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Introduction

Twentieth century has witnessed numerous changes among these greatest change was the rapid growth of world population and urbanization. World population has amplified from three billion in 1950 to seven billion in 2018 and 65% of this growth occurred in urban areas.[1] More specifically, in that period, urban population increased more than seven times in the world's developing regions including the South-Asia and some of the African countries. Moreover, urban population is expected to

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1 UN-Habitat, *Global Campaign for Secure Tenure,* Concept Paper, 2nd edn. (Nairobi: UN-Habitat, 2004).

rise to nine billion in next twenty years and on the other side rural population is estimated to fall to 300 million. Presently, fifty percent of total population is living in cities around the globe which is expected to reach seventy percent in coming few decades.[2]

This increasing trend of urbanization results in crises of housing, employment opportunities and other basic facilities. Developing countries cannot meet these growing requirements and major fraction of the migrants approach to informal housing settlements generally known as shanty towns and slums (known as *katchi abadis* in Pakistan). Almost 60% of total urban population in Pakistan is living in *katchi abadis* or slums.[3] Similar statistics have been showed by many other countries regarding migration and prevalence of slums. The continuously growing population of shanty towns has converted into a serious issue especially for less developed countries of the world in the past four decades.[4,5]

In this regard, this study is an effort to provide the baseline understanding of slums of developing countries in general and Pakistan in particular. This article attempts to provide the definition of slums and the actual status of slums across the globe especially in the developing countries. Prevailing socio-economic and living conditions of slum dwellers in developing regions are also explored in this article. The status of slum residents need proper recognition, identification and mapping for the improvements in their living standards and provision of public facilities.

This essay starts with an overview of the urbanization trends and growth in number and sizes of cities around the globe. The discussion then moves to socioeconomic conditions prevailing in slums of the developing countries with a special focus on South Asia. The essay also provides insights into slum management policies adopted in the developed and developing countries. Finally, possible ways to identify the slums and their mapping are explored especially for urban peripheries of Pakistan. At the end, concluding remarks of the author are presented.

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[2]   UN-Habitat, *For A Better Urban Future,* Annual Report (2018).
[3]   A. Shah, 'Determinants of Slums in Islamabad: A Philosophical Approach', *Pakistan Journal of Urban Affairs,* 1:5, 35-41.
[4]   UN-Habitat, *For A Better Urban Future: A Mission for the 21st Century* (2011).
[5]   A. Patel, A. Crooks & N. Koizumi, 'Slumulation: An Agent-based Modeling Approach to Slum Formations', *Journal of Artificial Societies and Social Simulation,* 15:4 (2012), 1-20.

Emergence and growth of slums around the world

Slums are not a new phenomenon rather it had emerged since human beings started living in cities. All the developed regions of the world also have gone through urbanization and have faced the challenge of slums from 17th to 19th century. Literature provide evidence to the fat that slums in developed regions at that time had undergone the same and even the worse conditions as compared to the current situation of slums in developing countries. Sustainable economic status, technical progress and better policy formulation made it possible for developed countries to weather slums challenge in a better way, but the same characteristics are badly lacking in the developing countries.

Emergence and growth of slums are not only the manifestation of urbanization and population explosion, they are also an indicator of governments', institutions' and legal failure. Proper policies by both central and local governments are needed to predict the population pressure and to assure the required housing, employment and basic amenities. Furthermore, the poor slum dwellers are trapped in the label of 'illegal' status, meaning that they do not exist officially hence do not deserve public provision of any type. So, they are not shown in maps and they live nowhere despite living in the peripheral boundaries of cities. When no governmental authority owns them then the slum inhabitants live outside the realm of law, but then they fall prey to the administration of the slum-lords and mafia dealers. Ignorance of the slum dwellers in policy formulation makes them more vulnerable and less skilled which must be dealt with high concern.

Moving towards solution, handling of the slums problem in a fundamental and sustainable manner requires proper understanding of slums. Likewise, proper policy formulation necessitates the measurement of size and number of slums for record. Understanding of slums is based on the conceptualization—as to how these slums are defined. Traditional view on slums elaborates slums as old inhabited areas which were not that much disrespectful and undesirable. When their original inhabitants moved to relatively improved places due to the decline in quality of these houses, they rented them to poor class who cannot afford better ones.

Modern view on slums includes the rapidly emerging illegal residential areas, and encroachments built without proper regulations. Housing quality there may vary from tents to pakka structure.[6] These slums are usually established on urban peripheries, susceptible and prone areas such as railways lines, river-sides, and sharp hills, in flood-prone

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[6] Pakka house represents the permanent structure of housing which is usually made of bricks.

areas and below flyovers. The word 'slum' was first used in 1820 as a name for unprivileged settlements.[7] Today this word has become a composite term with different connotations. This word is considerably acknowledged in some places while banned in others.

One of the main problems in identification of slums is the lack of agreed definition. *Katchi abadis* or slums[8] have been defined variably. According to UN-Habitat Expert Group Meeting (EGM);[9]

> 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, 2003)

Moreover, under the Constitution of Pakistan, Katchi Abadi Act 1992 states that a katchi abadi is:

> Any area or part thereof which was occupied unauthorizedly before the (31st December 2006) and continues to be so occupied and has at least forty dwelling units on it to be a Katchi Abadi.

Even though there is slight controversy in defining and classifying slums which is the major challenge in measuring slums and handling this issue. EGM (Expert Group Meeting by UN Habitat) suggested the functioning characterization of slum as 'a group of individuals, sharing the same roof necessarily in urban area' and experiencing one or more of the following challenges:

- Lack of basic necessities like clean water and sanitation
- Substandard and non-durable housing
- Insecure housing status
- Inadequate and congested houses

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[7]   UN-Habitat, *For A Better Urban Future: A Mission for the 21st Century* (2010).

[8]   Different words are used in replacement of *katchi abadi*, such as: informal settlements, squatter settlements, low-income settlements, semi-permanent settlements, shanty towns, spontaneous settlements, unauthorized settlements, unplanned settlements, uncontrolled settlements, and slums.

[9]   It has been taken from the UN-Habitat Expert Group Meeting (EGM) that took place on the 28-30 October 2002. It was a consensus-building exercise that sought to develop operational definitions and indicators of slums and secure tenure in order to facilitate the process of monitoring for target 11 of the MDGs by 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers.

Arimah (2010)[10] stated that in spite of being the center of attention, the agenda of SDGs 2020 hardly affect the burning challenge of urbanization. The suggested improvements for 100 million slum dwellers was only applied on one-tenth of the current slum inhabitants. Welfare of slum inhabitants around the globe requires amendments in targets and provision of appropriate alternatives to slums establishment through improved preventive measures and arranging slum deterrence packages.[11] These findings provoked the urban authorities for slums policy formulation process. The proposed policies include different strategies, for example: 'in-situ'[12] expansion, transfer and removal of slums.

Worldwide, urbanization, high population growth rates and demographic changes as the root cause of slums, do not only cause the population increase in existing cities but also increase the number of cities. Drastic changes in rural-urban demographics were witnessed after 1950 when urban population was 32% of total population. This share increased rapidly and approached to 39% in 1980, and to 48% in 2000. The share increased to 55% in 2011 and is expected to cross 60% share of total population till 2030.[13]

The urbanization has also increased in terms of number of cities as there were less than 100 metropolises in world with above one million residents. Number of cities was 400 in 2002 and 550 in 2015 with almost 60% of the population of the world.[14]

Like most of the developing countries, in 1951, Pakistan had almost 17.8 percent of total urban population, in 1981 it increased to 28.3 percent and 32.5 percent in 1998.[15,16] It further increased to 39.7% in

[10]   B. C. Arimah, *The Face of Urban Poverty: Explaining the Prevalence of Slums in Developing Countries,* Working Paper No. 30 (Finland: World Institute for Development Economics Research, 2010).

[11]   P. Garau, E.D. Sclar & G. Y. Carolini, *A Home in the City*. Task Force on Improving the Lives of Slum Dwellers, UN Millennium Project (London: Earthscan, 2005).

[12]   It is a policy for development of slums that government and private land be provided for housing to slum dwellers. The policy was adopted by almost all countries during their slum dealing process.

[13]   H. Ritchie & M. Roser, *Urbanization. Our World in Data,* available at: https://ourworldindata.org/urbanization, accessed on 9 September 2019.

[14]   United Nations, *Population Facts: Our Urbanizing World*, Department of Economics and Social Affairs (2014).

[15]   Government of Pakistan, *Pakistan Integrated Household Survey, Round-2: 1998* (Islamabad: Pakistan Bureau of Statistic, 1998).

2017 and 39.9% in 2019.[17] Inadequate employment opportunities and substandard living in rural areas was the main reason of this high urbanization trend. Even after migration, the migrants face many issues due to inadequate management and housing facilities in urban areas. Pakistan needs proper investigation and efficient policy formulation to deter the slums propagation.

Overview of socio-economic conditions of households in slums Existing literature on slums provide information about the problems that the slum inhabitants are facing. Following are some of the major slum characteristics of the developing countries in general and of Pakistan in particular.

a.   Human services

The main reason of rural-urban migration is the wish of better living standards which are unavailable in rural areas. Search of better lifestyle can be justified as urban population has better living facilities. Some of these are better housing, sanitation, transportation and provision of other basic facilities. The migrants have to face the situation practically after migration that these facilities dependent upon income. Usually, migrants belong to low income groups and have less affordability. Resultantly a large number of migrants have to reside in shanty towns.

Based on the location of informal settlements, slums can be categorized worse as compared to rural areas. Their location makes them more prone to contagious infections and undernourishment.[18] If the migrants are less educated and low skilled, they have to choose low profile jobs which expose them to vulnerable conditions with poor hygienic at work place. They have to work in this environment for longer period's results in poor health and weak productivity.

b.   Housing and infrastructure

Rapid urbanization causes shortage of residential areas so land prices rise and make living in cities more expensive. Migrants find it more difficult to go back to their native towns as a result they are willing to pay more rents for houses and are ready to live in informal settlement. Usually,

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16   Government of Pakistan, *Pakistan Demographic Profile* (Islamabad: Pakistan Bureau of Statistics, 2018).

17   United Nations, *World Population Prospects: The 2017 Revision*, Department of Economic and Social Affairs, Population Division (2017).

18   S. Ameratunga, M. Hijar & R. Norton 'Road-traffic Injuries: Confronting Disparities to Address a Global-Health Problem', *The Lancet*, 367(9521), (2006), 1533-40.

houses in *katchi abadis* are not properly ventilated hence cause respirational ailments due to contaminations.

A research by Marx *et al.* (2019)[19] evidenced that ethnic and religious benefactions are also important factors in setting property prices. Increasing trend of urbanization is putting a growing pressure on available housing facilities in the developing countries. Migrants cannot get free space to live so they have to pay rents to the existing slum residents for living. Slum residents pay higher rents as compared to their living conditions, and live in lower quality housing.

c.   Pollution and contamination

Massive urbanization also increases the stream of traffic and cause aquatic and airborne pollution. As narrated by a British newspaper[20], traffic congestion is a source of many diseases in cities. Countries with underdeveloped infrastructure face these problems more severely. A report by World Health Organization (2018), reported that 80% of urban inhabitants are facing air, water and noise pollution more than their tolerance level. Large displacements have exceeded the expected capacity of the metropolises to manage residential waste, land plus resource provision, leading to environmental degradation and adversely affecting the value of living in slums.

d.   Drainage problems

Slums usually have no proper drainage system. Roads are poorly built, narrow and low quality. During the rainy season, slums face stagnant water and most recently the urban flooding. This makes the atmosphere in the area very restless. Such an environment causes many diseases in slums. Housing in these areas is unhealthy and carries a huge burden of disease on its residents. Slums have also been found on both sides of the canals and in areas covered with concrete and asphalt. Poor drainage and unpaved streets are not able to accommodate heavy rain. Consequently, a large accumulation of water like floods can be seen in streets. It will not only wreak havoc on inhabited and market areas, but also on state owned infrastructure. Loss of life, property, business, and psychological health are major outcomes of such a malaise.

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[19]   B. Marx, T.M. Stoker & T. Suri, 'There is No Free House: Ethnic Patronage in a Kenyan Slum', *American Economic Journal: Applied Economics*, 11:4 (2019), 36-70.

[20]   *The News* (daily), 4 May 2018.

e. Health, education and employment opportunities

The notions like 'health is wealth' and 'healthy nations can be built by healthy people only', are acknowledged worldwide. However, health status of slums dwellers is inferior and they do not consider health as important as other needs. Their low income level ends in their malnourishment, weak immunity and poor health status. Furthermore, their poor and unhygienic living conditions cause many diseases. Rapid slummification is the main cause of environmental pollution. Vulnerable living conditions of slum dwellers expose them to many diseases. Their poor socio-economic conditions, illiteracy, high fertility and mortality highlight the dire need of effective policies in this regards.[21]

Slums are facing health problem on a whole as the children living in slums are malnourished. Likewise, women are affected by serious diseases as hypertension, hepatitis, diabetes, tuberculosis, heart disease, joint pain, etc. Low level of education force them to opt low profile jobs like daily-wage labor, sweepers, and factory workers and as last resort begging. These types of jobs/engagements yield low income level, poor job security and no health or educational facilities. Ultimately the slum inhabitants and their families end up living with poor health and educational conditions. Tensions and environmental degradation may push them to drugs and crimes as well.[22]

f. Hot and humid environment

Large number of inhabitants of slums are gathered in small houses, so existing air flow is not enough to fulfill their fresh air needs. Ultimately they end up in a hot atmosphere especially in warmer climates having long summers and prolonged humid environment. Moreover slums residents also lack the developed property rights system; they live in the illegally occupied residences, with the support of land grabbers and mafia, so they don't improve their housing quality nor they can move somewhere else due to poverty. If they get their full-fledged property

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[21] S. Goswami, & S. Manna, 'Urban Poor Living in Slums: A Case Study of Raipur City in India', *Global Journal of Human Social Science Sociology & Culture*, 13:4 (2013), 14-22.

[22] C. Siegel, A. Davidson, K. Kafadar, J.M. Norris, J. Todd & J. Steiner, 'Geographic Analysis of Pertussis Infection in An Urban Area: A Tool for Health Services Planning, *American Journal of Public Health*, 87:12 (1997), 2022-26.

rights over the same structures, they can incrementally build their house to a better standard.[23]

g.   Sanitation condition

Availability of drinking water and sanitation is also not satisfactory. Provision of safe drinking water is acknowledged as basic right of all citizens but still clean drinking water by the government is a dream in slums.[24,25] Slum dwellers have to face discrimination in provision of basic needs as they are usually ignored by the city development authorities. Households face inequalities in provision of basic human rights despite living in the same locality. Slums usually catch rural migrants of diverse ethnicities. They face discrimination because of their legal or illegal slum status, ethnicity and political linkages.[26,27]

Slum management policies

Most of the countries in the world have now realized the rising number of slums as a major threat to their socio-economic growth. Need of the hour is to formulate efficient and effective strategies to cope with this problem. There are some steps taken by different countries. These include passing of a bill by the USA in 2011 to increase the development budget for 'Shelter, Land and Urban Management (SLUM)'.[28] Amongst the developing countries, UNDP's enforcement to up-grade the life style of slum occupants is also a significant policy. The 8th and 11th goal of Millennium Development Goals in 2000 and 2003 was also to improve the living standards of minimum hundred million slum residents until

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[23]   A. Unger, & L. W. Riley, 'Slum Health: From Understanding to Action', *PLoS Medicine*, 4:10 (2007), 295.

[24]   G. R. Panda & T. Agarwala, 'Public Provisioning in Water and Sanitation', *Economic & Political Weekly*, 48:5 (2013), 24-28.

[25]   P. Panda, A. I. Benjamin & P. Zachariah, 'Health Status of Under-fives in a Ludhiana Slum', *Health and Population-Perspectives and Issues*, 16:3-4 (1993), 133-41.

[26]   A. Bandyopadhyay & V. Agarwal, 'Slums in India: From Past to Present', *Population*, 23 (1981), 46-14.

[27]   A. Bandyopadhyay & V. Agrawal, 'Slums in India: From Past to Present', *International Refereed Journal of Engineering and Science,* 2:4 (2013), 55-59.

[28]   UNDP, *Resolution adopted by the General Assembly: United Nations Millennium Declaration*, 2000.

2020.[29] According to Bourgin and Braziller (1994),[30] various countries opted a policy of *Laissez-Faire* in 1950. Though they thought slums as illegal yet temporary situation which will get better with economic development.[31] With the continuation of such a policy of neglect, many governments started 'low-cost housing projects' expecting that it will end slums with growing economic progress. However, the program proved as a failure. Hence in the 1960s to 1970s, after the failure of this policy the 'slum elimination policy' was espoused in which slum habitants had to forcefully leave their residence.[32] Same policies were adopted all over the world; Zimbabwe adopted policy of slum demolition on 25 May 2005. They launched 'Operation Murambatsvina', which means to 'drive out filth' as slum clearance movement. Throughout the whole world, a rough estimate informs that this removal policy affected nearly 700,000 slum dwellers while either losing their jobs/living place or both. This also negatively impacted 2.4 million people around the globe. Almost 18% of Zimbabwe population was affected to different extents.[33] The same policy was also implemented in Pakistan including its capital (Islamabad) under 'slum removal plan of the Capital Development Authority in 2014 and 2015. However, these failed approaches realised the need of some improved strategies in this regard.

Third strategy was the 'Site and Service' strategy; the strategy of relocation or resettlement of the slum dwellers in the 1970s. This approach was to control the growing slums phenomenon.[34,35,36] This

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[29]   UN-Habitat, 'Guide to Monitoring Target 11: Improving the Lives of 100 Million Slum Dwellers, Progress towards the Millennium Development Goals' (Nairobi: UN-Habitat (2003).

[30]   F. Bourgin & A. G. Braziller, 'The Great Challenge: The Myth of Laissez-faire in the Early Republic, *Utopian Studies*, 5:1 (1994), 152-155.

[31]   UN-Habitat, 'The Challenge of Slums: Global Report on Human Settlements', *Earthscan* (London, 2003).

[32]   K. Olds, T. Bunnell, & S. Leckie, 'Forced Evictions in Tropical Cities: An Introduction', *Singapore Journal of Tropical Geography*, 23:3 (2002), 247-251.

[33]   A. Tibaijuka, *'Report of the Fact-finding Mission to Zimbabwe to Assess the Scope and Impact of Operation Murambatsvina', by the United Nations Special Envoy on Human Settlements Issues in Zimbabwe* (Nairobi: Kenya, Geneva: United Nations, 2005).

[34]   J.J. Van-der-Linden, *The Sites and Services Approach Reviewed: Solution or Stopgap to the Third World Housing Shortage?* (Gower Publishing Company, 1986).

[35]   C. Pugh, 'The Theory and Practice of Housing Sector Development for Developing Countries, 1950-99', *Housing Studies*, 16:4 (2001), 399-423.

policy offered plots/houses to slum inhabitants in response of leaving slum dwelling.[37] However, majority relocations were implemented with no effective dialogues with those intended recipients of these replacements. This hasty course missed proper management hence also ended up with immense problematic issues like, new offered places of living lacked services, were maladministered, and much more. Brazilian Brasilia to Samambaia of the 1980s are main examples of this slum relocation idea. Moreover, the failure of the previous plans to handle the challenge of slums continued the process to improved slums or 'Slum Upgrading'[38] in the 1980s.[39] Another response to slum proliferation came in 'Tenure and Enabling Approach' in the 1990s.[40] This approach believes in the development of property rights and secured tenure for slum dwellers.

World Bank also recommended numerous developing nations to up-grade their respective informal settlements. To implement this idea major basic facilities i.e., clean water, better infrastructure, public health and roads were required. Moreover, community services, education and health centers were also basic requirements.[41,42]

There is no doubt that these development strategies (planned by World Bank and governments) bore many impressive results for slums, yet they also faced criticism. Reasons being, for instance, 'project-oriented approach' could lack satisfying development to proceed further at fast pace. These policies also lacked functioning participation of intended beneficiaries. Furthermore, the slum improvement programs

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[36]   See footnote 47.
[37]   G.S. Cheema, *Urban Shelter and Services: Public Policies and Management Approaches* (Praeger Publishers, 1987).
[38]   Launched by the World Bank and United Nations High Commissioner For Refugees (UNHCR) as a collaborative initiative in May 1997, the City Alliance is a multi-donor coalition of cities and their development partners, whose objective is to make unprecedented improvements in the living conditions of the urban poor through city development strategies and scaling-up programs to upgrade slums, both city-wide and nationwide.
[39]   C. Banes, R. Huque & M. Zipperer, 'Towards a National Community Upgrading Program for Ghana', *Urban Notes,* 1 (2000).
[40]   T.T. Thahane, 'Housing Finance, Enabling Strategies and Economic Development', 20th IUHF World Congress Programme (International Union for Housing Finance, Cape Town, South Africa, 1993) 14-22.
[41]   P. Abelson, 'Evaluation of Slum Improvements: Case Study in Visakhapatnam, India', *Cities*, 13:2 (1996), 97-108.
[42]   World Bank, *Entering the 21st Century, World Development Report 1999–2000* (Washington, D.C., 2000).

were formulated with weak backup plan of land availability and institutional as well as the monetary plan with no prime emphasis on poverty elimination.[43],[44],[45],[46],[47],[48]

World Bank and UN-Habitat led two main strategies for a consistent progression, called, 'Cities without Slums (CWS) Action Plan' and 'Slum Up-gradation Facility (SUF)'. International benefactors, cities and financial institutions were allied in this program. To keep the slum up-grading procedure both CWS and SUF were put in place overtly and covertly by the UN-Habitat.[49] For fruitful application of SUF, a pilot scheme was conceived and implemented costing 30 million USD within 3 years.

Following CWS and SUF, the slum areas were still in dire need of further improved planning and strategies. Thus, in 1999, World Bank and UN-Habitat launched another global campaign for slum dwellers. This strategy offered the idea for slum inhabitants, in which they could make residential change if they are sure of not immediate expulsion (even though they do not own that property legally). This 'secure tenure strategy' proved successful for safe occupancy and minimized administration related issues in having effective negotiations instead of compelled demolition.[50]

This policy for provision of property rights resulted in various health related issues like absence of 'secure tenure of residence

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[43]   D.C. Okpala, 'Upgrading Slum and Squatter Settlements in Developing Countries: Is There a Cost-effective Alternative?' *Third World Planning Review,* 21:1 (1999), 1-14.

[44]   H. Werlin, 'The Slum Upgrading Myth', *Urban Studies*, 36:9 (1999), 1523-34.

[45]   F. Tebbal, & K. Ray, 'Housing the Urban Poor', *Habitat Debate*, 7:3 (2001), 1-5.

[46]   S. Gulyani, & E.M. Bassett, 'Retrieving the Baby from the Bathwater: Slum Upgrading in Sub-saharan Africa, Environment and Planning Commission, *Policies and Space*, 25:4, 486-515.

[47]   D. Roy, M.H. Lees, B. Palavalli, K. Pfeffer, & M. P. Sloot, 'The Emergence of Slums: A Contemporary View on Simulation Models' *Environmental Modelling & Software,* 59 (2014), 76-90.

[48]   J. Bird, P. Montebruno, & T. Regan, 'Life in a Slum: Understanding Living Conditions in Nairobi's Slums across Time and Space', *Oxford Review of Economic Policy,* 33:3 (2017), 496-520.

[49]   UN-Habitat, 'The SUF Hand Book', *Design Phase* (Nairobi: UN-Habitat, 2006).

[50]   UN-Habitat, 'Global Campaign for Secure Tenure', Concept Paper, 2nd edn. (Nairobi: UN-Habitat, 2004).

campaign', unending the vicious cycle of construction and forceful expulsion along with many more. This campaign was also beneficial for community to some context. It proved good for increasing the property tax base which leads to more production and welfare of the slum residents.[51]

The aforementioned strategies were also adopted in Pakistan; in 1950 the strategy of benign neglect was opted by taking slums proliferation as a temporary phenomenon which had emerged because of independence of the country. It was hoped the emerging informal settlements would disappear with the passage of time through an automatic process. These self-assumed ideas remained imaginary and slums as well as slum population kept on increasing throughout the course of time. Slums remained the neglected issue because of the lack of administrative will, political instability and poor economic status of Pakistan. After the 1990, slums were considered as a challenge and removal policy was opted. From the 2000s, slum up-gradation policy was adopted after the failure of removal policy.

Improvements in housing structure were planned but this policy again failed as to catering the slum population explosion was nearly impossible with limited resources. So, again the surge of slum removal policy aroused during 2004 and a ping pong of policies to remove or upgrade slums started after 2008. Pakistan also tried the resettlement or relocation policy for slum dwellers. A town named Farash town was planned to relocate the slum inhabitants of Islamabad. Residents of slum 'Muslim colony' were offered plots in Farash town. Apparently, it should be a successful policy as Farash Town was a planned town with all basic facilities. But most of those slum dwellers were either very poor or habitual to their previous locations so they moved back to slums again.

Given the poor economic status of slum dwellers, they could not manage to build houses on government provided land so they sold or rented out their land in Farash town and moved back. They were living in the same slum for a long time and have jobs in nearby areas, as well as attachments to their neighborhood made the decision more difficult. Some analysts took the slum dwellers as land mafia who occupy illegal land and then demand the property rights for their illegal occupancies. That's why slum removal policy was again opted in 2014 from the CDA for the slums of Islamabad to acquire the New Urban Agenda objectives.

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[51] A. Durand-Lasserve, 'Benefits of Regularizing Informal Settlements', *Habitat Debate*, 5:3 (1999), 13-15.

Recognition, identification and mapping of slums
The growing process of slummification has put the slum inhabitants on risk of economic and environmental vulnerabilities. In the recent decades, rapid expansion of urban population has increased the vulnerability of migrants especially slums dwellers to economic and climate shocks. Public authorities preferred the forced eviction of these slums in spite of recognizing and managing slums. Slum dwellers also lacked the required political and financial worth to fight for their rights. Moreover, Non-government organizations' (NGOs) efforts are not fully successful for the recognition and provision of facilities to these slums.

Same trend is shown by Pakistan's municipal authorities. Despite the identification and formalization of informal settlements over time, city development authorities have to limit the growth of slums by forced demolition and displacement of slums. Despite acknowledging the challenges caused by slums as well as faced by slum dwellers, policy formulations to control the increasing growth of slums and managing the existing ones involve many challenges. Slums are not well defined legal territories and do not fall under development authorities. Ultimately, the informal settlements remain outside the domain of the development policies which highlight the need of slum management policies. Slum management policies may include the strategies to limit the growth of new slums, demolition of the newly established slums to discourage urbanization trend, or the legalization and mapping of the existing slums for data collection.

Slums management policies need information of existing slums, and current and future expected projections in population of slums. Although Islamabad, the capital of Pakistan, is a well-organized and planned city yet the unprecedented rise in the share of urban population and share of slum population in total urban population is beyond expectations. Only one fifth of the informal settlements are regularized by the government. The grave issue of slums formation needs special and prudent focus to tackle this challenge effectively.

Mapping of slums is not as easy as mapping any rural or urban areas. Unattainability or the availability of fragmented or distorted data makes the challenge of slums mistreated. However, reliable data is available to some extent for the regularized slums. Many countries who have managed the emergence and growth of slums are mostly those who have developed the proper system for extensive data accumulation and the collected data on social and economic indicators further facilitates them in policy formulation. In case of Pakistan, recognition, identification and mapping of some regularized slums is in process for Lahore and Islamabad. In this regard, importance of defined

geographical boundaries cannot be denied. Topographical boundaries are the pre-requisite for allocation of postal and physical addresses for policy implementation. Furthermore, execution of proposed policies also has the same importance like relevant policy formulation.

Allocation of required funds is also necessary for the timely delivery of public provisions. The up-gradation process needs identification of slums that can be assisted via satellite navigation systems and somatic which facilitate the process of identification of geographical regions. Satellite based navigation systems as ArcGIS and Google earth can be used for efficient identification. In the same way, remote sensing technologies as QuickBird, IKONOS,[52] and Google earth can perform a great help in finding the geographic position and population size. The use of these techniques depends upon the availability of internet and Global Positioning System (GPS).

Global information system (GIS) needs to be merged with primary surveys and geographical photos. Primary surveys provide the information of the household and socioeconomic indicators of the locality. They can also be used to allocate and locate the physical and mailing addresses for the provision of basic needs and awareness programs. The process of slums identification, recognition and management can further be eased and accelerated by involving the most concerned people, such as the residents of slums, NGOs, and municipal and state representatives. Teferi and Newman (2017),[53] verified that sociological and monetary wellbeing of the slums can be witnessed by the vigorous involvement of slum dwellers in identification and mapping procedure.

Concluding remarks
Slum emergence, prevention and removal can be properly controlled after a brief understanding of the causes behind urbanization. Less developed countries lack in their working on understanding of the pre- and post-migration issues. Developed countries of the world have organized their institutions and to control the prevalence and growth of slums.

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[52]   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, which began being sold since 1st January 2000.

[53]   Z. Teferi & P. Newman, 'Slum Regeneration and Sustainability: Applying the Extended Metabolism Model and the SDGs', *Sustainability*, 9:12 (2017), 2273.

In this regard active and efficient research work is required in the developing countries. Moreover, unavailability of empirical data is a main hindrance in handling the slum formation, growth and management process.

In terms of economic development, urban areas are much more important but it is conditional to the effective policies. Urban areas can contribute negatively without proper policy formulation for management of cities. Uncontrolled rural-urban migration has become the main reason behind the proliferation and growth of slums. The flow of population to cities surpasses the urban natural capacity to absorb people and results in shortage of basic human amenities. These challenges can be sorted out only after a proper understanding and satisfactory course of policy responses.

Despite continuous working and policy formulation process, still there is room for further efficient and centralized efforts. Fragmented policies, low financial disbursements, fragile political will and impractical decisions have prolonged this policy making. Municipal and state level efforts to limit the urbanization process and provision of basic necessities in slums are needed. Provision of property rights can also improve the situation. Insecurity of residential status makes slum inhabitants frustrated. However, all above mentioned policies require the proper mapping of slums.