

# Sustainable Development: A Key to achieve Slum free Cities in India.

Harish Gupta<sup>a</sup> & Sanjay Sharma<sup>b</sup> & I.P.Singh<sup>c</sup>

<sup>a</sup> Lecturer, Department of Architecture, Govt. Polytechnic Ambala City and Research Scholar, I. K.G Punjab Technical University, Jalandhar, Punjab .

<sup>b</sup> Professor, Department of Civil Engineering and Incharge of Center for Clean Technology and Sustainable Development, NITTTR, Sector-26, Chandigarh .

<sup>c</sup> Associate Professor, Department of Architecture, National Institute of Technology, Hamirpur, Himachal Pradesh .

Received: September 14, 2018

Accepted: October 26, 2018

## 1.0 Introduction

Slums are the outcome of unsustainable urban development and to create slum free cities, 2 tier approaches is needed to be followed. Firstly, the existing slums have to be upgraded or redeveloped and secondly, planning initiatives at Urban or city and regional level to control and prevent the future emergence of the slums in the cities. Member states of the UN are committed to create sustainable, smart, responsive cities worldwide but slum is the major challenge in achieving these cities. In order to achieve sustainable development various challenges in cities such as - poverty, inadequate infrastructure, poor health institutions, increased slum dwellings, negative environmental impacts, inadequate transport and safe water access needs to be addressed. There is a strong political will world wide to: eradicate poverty, control climate change, healthy partnerships, better health facilities, quality education, gender equality, sustainable urban development, energy efficiency etc. Therefore, 2030 Agenda for Sustainable Development, the New Urban Agenda, the Paris Agreement, the Addis Ababa Action Agenda on Financing for Development and the Sendai Framework for Disaster Risk Reduction has been adopted by Member States of UN. To achieve these agendas and frameworks it will require integrated and coordinated actions at local, national and global levels. Higher growth ultimately depends on sound policy reforms in promoting domestic and foreign investment, creating employment, improving food security, raising India's standards of education and skill development, building new infrastructure, and increasing the country's overall competitiveness, particularly in the manufacturing sector [1].

There are 17 Sustainable Development Goals with 169 global targets and 234 indicators to evaluate the success of implementation of the Agenda. Unsustainable urbanized cities are major hurdle in achieving the SDGs as they are directly or indirectly affecting the climate, ecosystems, energy security, waste management, housing, urban mobility, etc. in a negative manner. There is a need to understand the role of these goals in achieving Slum free cities and to establish a relation between the various goals and characteristics & causes of Slums. This paper is an attempt to understand and analyse the Sustainable Development Goals with respect to creation of slum free cities so that further course of action regarding framing of strategies for model of slum free cities in India may evolve.

## 1.1 Objectives of the Study

This study is an attempt to shed light on the role of Sustainable Development Goals in achieving urban development/cities without the slums. Further, it may also establish relationship between the causes and characteristics of slums with SDG(s).

The objectives of the present study in this context are:

1. To study and assess the Causes and characteristics of slums.
2. To study and assess the Sustainable Development Goals and to further understand and establish its relationship with slums with respect to creation of slum free cities in India.

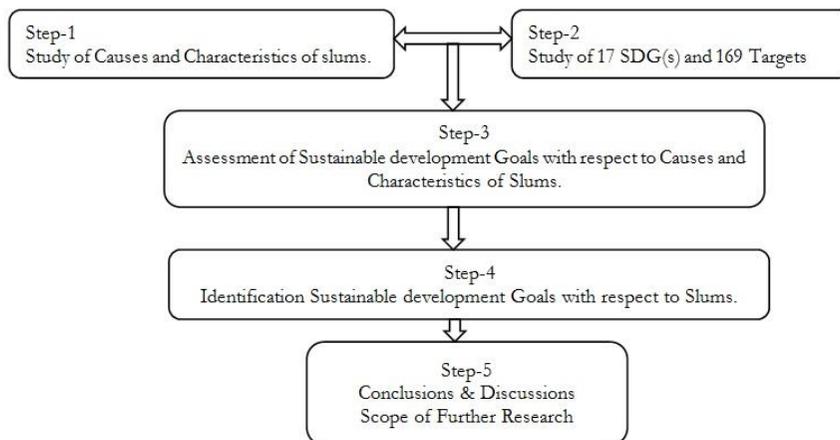
## 1.2 Scope and Limitations of the study

The scope of the study is limited to the overall study of causes and characteristics of slums and SDG(s) as per the Data and information available with various agencies of Govt. of India, United Nations documents & reports and other available Data & Literature from research papers & reports of NGO(s) working in this field. The study is limited to the availability of latest robust data with respect to slums in India and SDG(s). The study has not accessed some of the SDG(s) due to inability to find the relevant

connection with the slums like SDG(s) 12, 13, 14, and 15. As per the preliminary observation these goals may also be indirectly connected with slums but they are not accessed in the study.

### 1.3 Methodology

This study has to be seen as a beginning of a process which is far more complex and requires much more in-depth analysis regarding framing of strategies and model for slum free cities in India by 2030. The process followed for the study is as under:



### 2.0 Urban Development Scenario

According to the UN-Habitat reports 54% population of the world is residing in the urban areas that is estimated to exceed to 66% by 2050 and 90% of this increase will be concentrated in Asia and Africa [2]. The urban population in India will become 600 million by 2031 and expected to be around 800 million in 2051. At present the urbanization rate in India is 31% which is expected to be 51% in 2039 and 60% by 2050 [3]. India needs to have new cities to house this increased urban population. Fast pace of urbanization is posing various challenges for the urban planners, Architects and Engineers for the present as well as for future. Direct migration to urban areas accounts for 20 to 25 percent of the increase in urban population. This urbanization side by side lead to growth of huge informal sector in housing in form of slums. The major serious concern is that in 2011 the total slum population in India was 65.49 million and is projected to be 102.7 million in 2016[4]. This growth of slum population needs to be catered and is major challenge for Indian cities. The total urban housing shortage estimated at the beginning of the 12th Plan period i.e. 2012 was 18.78 million. In 2000, 189 nations set Global goals to make people free from extreme poverty and multiple deprivations. These goals were called as eight Millennium Development Goals to be achieved by 2015 and under the Goal 7d countries had to Achieve, by 2020, a significant improvement in the lives of at least 100 million slum dwellers [5],[6]. In 2015 with the adoption of the 2030 Agenda for Sustainable Development, world leaders established 17 Sustainable Development goals (SDGs), defining the world’s development objectives for the next 15 years. At the start of 2016, the SDGs came into effect, officially replacing the millennium Development goals (MDGs) as the global development agenda [7],[8],[9].

### 3.0 Slums

Growth of slums is seen as continuous process as the byproduct of the urbanization. The widespread growth of slums or informal urban settlements particularly in the developing world became a central policy issue during the last two decades. There is decrease in the slum population living in the urban areas in the developing world from 46.2 per cent in 1990, 39.4 per cent in 2000, to 32.6 per cent in 2010 and to 29.7 per cent in 2014. But the number of slum dwellers in the developing world is increasing from 880 million residents in 2014, compared to 791 million in 2000, and 689 million in 1990. In a major study of this phenomenon, The Challenge of Slums, Un-Habitat estimated that in 2001, 924 million people, or 31.6 per cent of the total urban population in the world, lived in slums [2].

There is need of serious and determined action is required on the part of authorities, national governments, civil society actors and the international community to work for the upliftment of slums otherwise the numbers of slum dwellers are likely to increase in most developing countries[10].This further shows that there is still a large gap between slum dwellers and the rest of the urban population living in adequate shelter with access to basic services [2]. In India the slum population is reported to be 65.49 million which likely to become 102.7 million in 2016 [4].

Table:1

Area	Population (In Figures) In million	In Percentage		
		Total Population	Total Urban Population	Slum Reporting City (2613) Population
All India/Total	1,210,569,573	--	--	--
Rural	833,463,448	68.85	--	--
Urban	377,106,125	31.15	--	--
Total Population of 2613 towns/cities	291,838,124	--	--	--
Slum Population of 2613 towns/cities	65,494,604	5.41	17.37	22.4

Source: Office of the Registrar General and census commissioner, India,2011

Slums are full of informal economic activities performed for earning their livelihood. Economist used to call it a Shadow economy. They directly and indirectly provide support to the economic development and employment creation for the people living within the slums. Slums offer the shelter to poor at very low and affordable prices. Slums provide low cost manpower to the industry, business and for domestic purposes. The importance of the poor to economic development has been acknowledged and documented by various researchers.

The word "slum" is used to describe informal settlements within cities that have inadequate housing and miserable living conditions. Slum is basically a condition characterized by the characteristics defined by United Nations which is acceptable and taken into account worldwide. The characteristics are:

- inadequate access to safe water,
- inadequate access to sanitation and infrastructure,
- Poor structural quality of housing ,
- Overcrowding,
- Insecure residential status.

Slums are the part of every city even in the history. It is the outcome of Industrial revolution that leads to the growth of urban centers. The main reason for slum proliferation is rapid and non-inclusive patterns of Urbanization catalyzed by increasing rural migration to urban areas [4]. Some of the major factors that lead to the Slum formation can be derived from the characteristics as described by the United Nations. Slums are caused by a range of interrelated factors and conditions. These factors are:

- Population growth,
- Rural-urban migration,
- Urbanization
- Poverty,
- Poor urban and regional planning,
- Lack of provision of urban physical infrastructure,
- Ineffective urban land management policies,
- Economic and social exclusion of urban poor,
- Displacement caused by conflict, natural disasters and climate change,
- Lack of affordable housing options for the urban poor and migrants.
- Weak Governance

[11],[12],[13] [14].

#### 4.0 Sustainable Development Goals and its relationship with slums

##### 4.1 SDG 1: Ending poverty in all its forms everywhere

This goal focusses on poverty eradication. Poverty is the basis root cause of the slums because poor cannot afford to have access to urban land and formal housing therefore, the poor is left for no option but to live in remote outskirts of urban areas or on environmentally hazardous places along the nallahs etc. in form of slums. If the Government initiate proper poverty alleviation programs to eradicate the poverty from urban as well as rural areas, then this will directly impact on the conditions of upliftment of slums in order to achieve slum free cities. Poverty is increasing in urban and represented by rise of slum dwellers in cities

who lack access to basic services and adequate housing. Poor have no security of land tenure which is a major drawback in urban areas.

Poverty cannot be only determined on the basis of income but it is multidimensional. The Oxford Poverty and Human Development Initiative’s Global Multidimensional Poverty Index of 2017 gave rich insights about the number of poor people living across the world. The majority of the countries with maximum poor population comes of course from the South Asian nations. The three dimensions of poverty are Health, Education and living standards which further corresponds to 10 indicators i.e Nutrition, child Mortality, Years of schooling, School attendance, cooking fuel, sanitation, water, electricity, floor/land and assets. India’s share is a total of about 1.45 billion populations that could be termed as multi-dimensionally poor [15].

The number of slums in India has decreased from 56,311 in 1993 to 33,510 in 2012. But, the number of slum households are increased from 5.9 million in 1993 to 8.8 million in 2012. This implies that size of slums is increasing. The number of people living below poverty line in India in 2011 are as given below:

**Table 2.0**

<b>Number and Percentage of below poverty line in India in 2011-12 (Based on Tendulkar report)</b>					
<b>Rural</b>		<b>Urban</b>		<b>Total</b>	
% of persons	No. of persons in Lakhs	% of persons	No. of persons in Lakhs	% of persons	No. of persons in Lakhs
25.7	2166.6	13.7	531.2	21.9	2967.8

*Source: Slums in India. A statistical compendium 2015*

It is empirically proved that, mainly the poor rural migrants to urban areas and are forced by poverty and unemployability to live in informal illegal land settlements. This insecure land tenure and poverty spreads squatter and slum settlements [4]. In 2011, 377 million people i.e. 31% of the total population in India lived in cities, and out of this, 65 million i.e. 27% of the urban population, lived in poverty in areas called slums [16]. The main challenge for the slum dwellers is lack of jobs and livelihood opportunities. Most of the jobs are available in the informal sector of economy with exploitation as one of the major characteristics of such jobs. 85% of the new employment opportunities around the world occurs in informal sector. These jobs are underpaid, unskilled and it allows the employer to survive but not to progress financially and socially to improve their quality of life. Young people living in slums are more vulnerable to crime and other illegal activities. About more than 1/4<sup>th</sup> of the young urban poor earn little more than USD 1.25 per day [12]. Sustainable urban development can play a key role in eradicating poverty from the cities. It is proved that highly urbanized countries have low levels of urban poverty. Urbanization creates higher levels of productivity, employment generation and improvement in quality in life due to better health, educational facilities, better infrastructure and services. In India it has been noticed that an increase of urban population by 2.0 lacs resulted in decrease in 1.3 to 2.6 % in rural poverty. Hence, these rural urban migrations are behind a reduction of 13 to 25% in the rural poverty in India between 1983 and 1999 [2].

All the aspects of multi-dimensional poverty have been addressed in the Sustainable Development Goal 1 of UN Habitat. Its effective implementation /achievement of goals as per their defined targets will definitely eradicate poverty thus helps in achieving upliftment in the quality of life of slums and in turn helps to achieve slum free cities in India. Some of the linkages between SDG1 and slum free city are as detailed below:

- Employment generation and livelihood of slum residents can be improved by taking appropriate slum upgrading initiatives with people’s centred and participatory approach. The sense of entrepreneurship can be developed as seen in many slums in Mumbai and Delhi that there are many household domestic industry is running. This will increase the prosperity of the slums dweller individually and collectively.
- Inclusive slum upgrading programs will cater to the diverse needs of men, women and children of all ages living in the Slums.
- Urban poverty reduction program will impact on access to land, property and secure tenure for the people living in slums.
- Proper Funding Mechanisms with sufficient funds may be made available at local level for upliftment of poor.

Urban poverty eradication may be understood as comprehensive approach for slum upgrading [12].

#### 4.2 SDG 2:End hunger, achieve food security and improved nutrition and promote sustainable agriculture

This goal is directly linked to SDG1. Food insecurity and malnutrition are common characteristics in the Slum residents because they are not financially capable affording good quality food in sufficient quantity as required by the normal human being for overall development and growth of body. This chronic food insecurity causes under nutrition and malnutrition and various chronic diseases and make them vulnerable and prone to epidemics etc, especially in children's and woman's [17]. Rise in food prices is a volatile phenomenon witnessed in short spans of time and government have to take measure through inclusive participation approach to increase food security and nutrition for the poor with nutrition and agricultural challenges in urban and rural areas to control the three vital components associated with food insecurity that are availability, access and affordability, in order to ensure proper food security to urban poor in slums thus improving their health and quality of life., Rural areas provide food for the urban areas and can support agricultural productivity. Long term solution to increase agricultural productivity and rising incomes of farmers will reduce rural urban migration. Region level cooperation will help in reducing speculation in food prices [18].

#### 4.3 SDG 3: Good health and wellbeing

This goal is directly linked to SDG 2. Proper healthy food will be the key for good health and wellbeing of human beings in case of slums as discussed above, they are more prone to epidemics etc due to lack of food quality food and their location of settlements. untenable slums are more vulnerable as they not only have all the negative characteristics of slums but environmentally also they remain at risk of natural disasters leading to loss of life, property and assets etc. The slums are deprived of toilets and garbage collection services and this will lead to major health issues such as open defecation and the presence of unsanitary waste adjacent to their houses. The health effects on slums residents vary by several factors like presence of separate kitchen, toilet, permanent shelter etc. In India by 2012, 31.3% of slum residents have no latrine, 52.7% have septic tank/flush, 9.7% has service latrines and 6.3% have others. Cities physical infrastructure plays an important role in public health health and wellbeing and directly connected with poverty, health and environment. Planning for health becomes an integral part of Urban planning and health status of population is an important indicator of human resource development. Therefore, inclusive cities through integrated planning approach towards access to a basic service, decent and affordable housing will reduce non-communicable diseases and will limit environmental disasters etc. Thus, achieving the SDG3 will also help us to make cities slum free [4],[12],[16],[19].

#### 4.4 SDG4: Quality education

These goals are regarding ensuring inclusive and equitable quality education and promote lifelong learning opportunities for all. As per the 12<sup>th</sup> Five-year plan appraisal document, Government of India is committed to bring the out of school children, migrants and slum children into main stream with the help of NGOs and self-help groups. Only 44.6 million slum dwellers are literate. Expectedly, in slum areas, males are ahead of females in terms of literacy with 24.92 million male and 19.6 million female literates being recorded among the slum dwellers in the Census 2011. Maharashtra has the highest number of total literates (8.8 million) among slum population. The literacy rates are 84.11 per cent for all slum dwellers, 88.76 per cent for males and 79.11 percent for females.

**Table 3**

Literacy Rate of slum population in slum areas by gender and with gender differential-India-2011				
Category	Literacy Rate in Slum areas			Gender Differ
	Person	Male	Female	
India (all persons)	84.11	88.76	79.11	9.65
Million plus cities	79.68	84.90	73.79	11.11

*Source: Slums in India. A statistical compendium 2015*

Slums have highest no. of illiteracy, due to lack of availability of affordable and appropriate educational facilities. Moreover, they prefer to indulge their children on petty jobs for earning their families in early childhood. There is need of creating awareness among slum residents about the importance of good quality education. Government through skill India mission is focused in provided skill oriented professional education to earn livelihood to the youth of the country. Therefore, such programs should reach to this section of society so that quality and skill-based education will provide them good opportunities for

livelihood thus improving their quality of life and uplift them from slum condition to normal urban settings at par with other urban residents. Slum youth are eager to learn a skill and participate in their self-development and community at large. The youth need to be supported with life skill education, sports and talent exhibits, personality development and leadership skills.

Thus, achieving SDG4 will contribute to making cities inclusive and sustainable through better access to education by the urban poor and those facing vulnerability who often live in slums. Inclusive and equitable education may help slum dwellers have adequate skills for decent jobs, which in turn will contribute to improving their living conditions. Furthermore, ending all forms of discrimination and eradicating discrimination for women and girls in terms of education is crucial to the achievement of inclusive cities for sustainable development worldwide [1],[4],[20].

#### **4.5 SDG 5: Gender equality**

The Convention on the Elimination of All Forms of Discrimination against women is an international treaty adopted in 1979 by the United Nations General Assembly. According to it the concept of equality includes the principle of non-discrimination, the principle of state obligation, and the principle of substantive equality or equality of results. Gender equality refers to women and men being treated equally and having the same rights and opportunities. Gender equality means that both women and men enjoy equal conditions for realizing their full human rights and potential to contribute to and benefit from political, economic, social, and cultural development. Crime against women is most common in slums, in spite of the fact that women living in slums represents one of the strongest forces for the development of their families. They are the main bread winner and generator of household livelihoods. In sub Saharan Africa at least 20% of the slum households are headed by the women. Women are more prone to diseases. Around 70,000 adolescents die annually from the complications during pregnancy and childbirth with 3.2 million unsafe abortions. There is consensus that latrines near the homes ensure privacy, dignity and security for women and girls as they are no longer forced to travel in the dark in the night to relieve themselves (Source: Slum Almanac). It has been observed that women participate less in the decision making and have less access to assets and resources as compared to men. Low income single women and women headed households are often more restricted in the access to housing. Women right in property, land and housing has been acknowledged and its implementation is one of the biggest challenges. This is due to patriarchal approach and cultural practices as well as lack of political will and commitment on the part of Government and decision makers. There is an example from Namibia where a, woman-dominated NGO known as Saamstann undertook their own land development using cooperative groups developed their own layout and house plans, with technical input from volunteers and led to a cost-effective and participatory strategy that provides better housing and services for the most marginalized members of the society and partnerships with the Shack Dwellers Federation of Namibia [21]. Therefore, the achievement of gender equality and empowerment of all women and girls will play effective and important role in slum upgrading thus, gender equality will help in improving the conditions of slum dwellers leading to its upgradation and helps to achieve slum free cities.

#### **4.6 SDG 6: Ensure availability and sustainable management of water and sanitation for all.**

Water and sanitation are the most important services requirement for healthy living with dignity in both rural and urban areas. But, the poor and slum dwellers are deprived from these services leading to environmental degradation, marginalization and poor health [22]. Lack of basic services is one of the most frequently mentioned characteristics of slum definitions worldwide. Lack of access to improved sanitation facilities and improved water sources is the most important feature, sometimes supplemented by absence of waste collection systems, electricity supply, surfaced roads and footpaths, street lighting and rainwater drainage. Improved sanitation leads to improved health, reduced child mortality/morbidity, improved water quality, environment and economic growth of a country. Continued urban migration, congregation of urban poor in slums without safe water supply, inadequate sanitation facilities and increasing resource constraints have led to poor quality of life and community health in slums [12].

The World Health Organisation estimates that unsafe drinking-water, inadequate hygiene and sanitation contribute to an estimated 1.9% million annual deaths primarily in children below 5 years happens because of unsafe drinking water, inadequate hygiene and sanitation. Planning commission of India estimated that each year, between 0.4 and 0.5 million children under age die of diarrhoea disease. Cities account for much of human and urban solid waste. Indian urban areas are facing huge problem of growing waste they generate. The Central Pollution Control Board estimates that total Municipal waste of the country is 127 million Kg per day and Toxic solid wastes litter all over the cities and expose the people, especially slum dwellers, to health hazards and make them most vulnerable. Only 70% of the waste is collected and out of which 12% is treated.

- **Drinking Water and sanitation facilities in slums.**

Only 72% urban households have a water source on their premises and out of which only 32% of Indian population receives treated water. About 30% of the urban Indians have no access to pipe water connections at their homes and almost 20% households lack toilets. (Source; water, sanitation and hygiene of the poor in urban India). Percentage distribution of slums by major source of drinking water available in slums in India is as given below:

**Table: 4**

NSSO report number/Year/ round of survey	Major source of drinking water				
	Tap	Tube well/Hand pump	Well	others	Not reported
NSS417(1993),49th	64.8	26.7	4.4	4.0	0
NSS486(2002),58th	77.7	15.7	2.4	4.3	0
NSS534(2009),65th	77.8	17.0	1.9	3.1	0.2
NSS561(2012),69th	71.4	20.4	0.8	7.4	0

**Source:** *Slums in India. A statistical compendium 2015*

31% of the residents of slums (including 15% of notified slums and 42% of non-notified slums) have no latrine facility, 53% of all slums at all India level used flush latrine facility and nearby 10% of slums used dry pit latrine facility. As per the NSSO surveys-India the type of latrine facility available in slums are as given below:

**Table:5**

<b>Type of latrine facility available in slums (in %) in different NSSO surveys- India</b>				
NSSO report number/Year/ round of survey	Type of latrine facility			
	No latrine	Septic Tank/flush	Service latrine	others
NSS417(1993),49th	54.4	35.1	6.9	3.5
NSS486(2002),58th	33.4	50.4	7.5	8.8
NSS534(2009),65th	14.7	57.8	5.9	21.6
NSS561(2012),69th	31.3	52.7	9.7	6.2

**Source:** *Slums in India. A statistical compendium 2015*

- **Drainage and sewerage system in Slums.**

As per the 2011 census piped sewer system are only available to 32.7% urban households rest depends upon septic tank, public toilets or defecate in the open. Most of the untreated urban sewage, industrial effluents and other waste are dumped in rivers and oceans. In India 31% of slums have no drainage system. The open pucca drainage system is available in 35% of slums, 19% have underground drainage system. 28.9% of the slums have underground sewerage system and 71% reported the non-existence of underground sewerage system in Slums [4].

**Table:6**

<b>% distribution of slums by availability of underground drainage -India</b>						
NSSO report number/ Year/ round of survey	Type of Drainage system.					
	No Drainage	Open Katcha	Open pucca	Covered pucca	Underground	Not Reported
NSS417(1993),49th	31.6	20.1	35.1	4.9	8.0	0.3
NSS486(2002),58th	29.3	13.2	38.4	6.2	12.9	0.0
NSS534(2009),65th	16.0	17.8	34.7	14.7	16.8	0.0
NSS561(2012),69th	30.9	8.3	34.7	7.4	18.6	0.0

**Source:** *Slums in India. A statistical compendium 2015*

- **Garbage disposal systems in slums.**

As per NSS 69th Round (2012) survey, the municipality / had arranged for garbage disposal in 62% of slums, in 11% of slums, the residents had arranged for garbage disposal, while 27% of slums had no arrangement for garbage disposal. The percentage distribution of slums by arrangement for garbage disposal in different NSSO-surveys India is as given below:

**Table 7**

NSSO report number/Year/round of survey	Garbage Disposal system			
	No arrangement	By residents	By Panchayat / MC	others
NSS417(1993),49th	34.8	10.8	52	2.4
NSS486(2002),58th	31.2	6.9	60.7	1.2
NSS534(2009),65th	16.4	6.9	65	11.4
NSS561(2012),69th	26.8	11.3	61.8	0.0

*Source: Slums in India. A statistical compendium 2015*

There is urgent need and requirement of effective urban planning and waste management systems to ensure safe drinking water, sanitation and hygiene and to improving the quality and sustainability of water resources worldwide. In turn, achieving SDG 6 will help in promoting better housing and slum upgrading thus lead to creation of slum free cities.

#### **4.7 SDG 7: Affordable and Clean energy**

SDG 7 calls for access to affordable, reliable, sustainable, and modern energy for all. Slum dwellers are deprived of resources to meet their energy demands. The main energy required in slums is for cooking purpose. 51% of the slum households are using LPG and 33% fire wood, crop residue, cow dung cake, coal lignite and charcoal which is not environment friendly lead to air pollution which in turn will affect their health. Unsustainable patterns of consumption in urban areas may contribute to environmental degradation in various forms, including direct energy consumption as well as embedded energy in goods and services. The other requirement of energy is for lighting purpose. 90.5% slum households have access to electricity as main source of lighting and kerosene is the second largest source of lighting in the slums. One lac slum household have access to solar energy and 70000 slum households are not using any source of light for lightning facility [4], [12]. Achieving SDG 7 will help in promoting quality of life thus improve the slum conditions.

#### **4.8 SDG 8: Decent work and economic growth to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all**

Various issues of poverty, food security, housing, health and well being are closely tied to the economic growth and prosperity of cities. Slum dwellers are deprived from basic civil amenities and fail to have fair opportunity to enjoy economic growth. Economic and urban development is an interdisciplinary challenge dependent on social inclusion, smart investment, good governance and environmental responsibility [2]. Cities contribute 80% of global GDP worldwide, therefore inclusive and sustainable cities is key to achieving this goal through innovation, entrepreneurship, job creation and greater productivity [23]. Thus, the effective implementation of strategies to achieve SDG 8 in turn helps to provide livelihoods and better employability to slum dwellers thus improving their conditions and quality of life.

#### **4.9 SDG 9: Industry, innovation and infrastructure**

Slums in India rose dramatically after 1947 due to partition and industrial revolution. Earlier slums were found around the mills, factories etc as they provide employability opportunities to the migrants at low wages for both unskilled or semi-skilled jobs. In 2012 and estimated 66.4% of slums were surrounded by the residential areas, 9.5% around industries and about 6.7% slums were surrounded by commercial establishments [12],[24].

The table given below shows those industrial towns have maximum % of slum population in India 2011:

**Table:8**

Name of the City	Total population	Slum Population	% of slum Population
Jabalpur	1081677	483626	44.71
GVMC	1728128	770971	44.61
Greater Mumbai	12442373	5206473	41.84
Meerut	1305429	544859	41.74
Raipur	1027264	406571	39.58
Vijayawada	1143232	451231	39.47
Nagpur	2405665	859487	35.73

*Source: Slums in India. A statistical compendium 2015*

Investment in infrastructure, industrialization and innovation are key in making the cities safe and sustainable. This involves investment in devising smart infrastructure for public in transport, clean energy systems and helps in improving urban planning and management in a way that is both participatory and

inclusive. Infrastructural development and the application of innovative technologies, such as ITS, can help leapfrog technology, innovation and industrial diversification leading to resilient, sustainable and inclusive cities [25]. Thus, achieving this goal will in turn help in achieving slum free cities.

**4.10 SDG 10: Reduced inequalities**

Inequality is linked directly with poverty and hindered development. Inequalities are common characteristic prevalent in cities in many complex ways. Majority of world inhabitants have income inequalities. The slum continues to be one of the faces of poverty, inequalities and deprivation in many cities in the developing countries. Income inequality has been a universal concern. The gap between rich and poor is widening day by day especially in developing countries. At global level although poverty reduced from 43% in 1990 to 21% in 2010 and middle class increased by 450 million people but, income inequalities continues to grow. The economic growth and income inequality do not necessarily go hand in hand. In major economic power houses such as China India and Indonesia income inequality indicators are deteriorating. Income inequality, inadequate urban laws lead to several other inequalities in the urban society like inequality in access to affordable housing, food, basic services, social inequality/boycott opportunities leads to social conflicts between income levels, social, ethnic and religious groups. Slum needs basic livelihood to survive, health care facilities, education, security of tenure, decent housing basic services.

Adequate urban planning and design maximizes agglomeration economics creating sustainable densities required to develop the local urban economy and reduced inequalities of opportunities among different groups of society. The integration of slum upgrading programs with urban development laws & policies at national level is the sustainable way to upgrade the slums. The development in part of 3 pronged approaches i.e combining the components of urban planning, urban legislation and urban economy. The living conditions of the people living in the slums must be improved and further creation of slums should be prevented. The national and local governments should take it on priority to reduce inequalities in the cities by enforcing the rights to slum dwellers but also to facilitate them for economic and social progress by integrating the people living in slums into the broader urban fabric [2],[12],[20],[26].

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

Goal 11 seeks to “make cities and human settlement inclusive, safe, resilient and sustainable” through eliminating slum like conditions, providing accessible and affordable transport systems, reducing urban sprawl, increasing participation in urban governance, enhancing cultural and heritage preservation, addressing urban resilience and climate change challenges, better management of urban environments (pollution and waste management), providing access to safe and secure public spaces for all, and improving urban management through better urban policies and regulations [2],[8],[9],[12]. Goal 11 consists of 10 targets and 15 related indicators, majority of which are to be measured at the local city level and progress reported at the national level. 8 targets directly linked with the slums are as detailed below:

<b>SDG 11 Make cities and human settlements inclusive, safe, resilient and sustainable</b>	
<b>Targets of SDG 11</b>	<b>Link with Slum free cities.</b>
<b>11.1</b> – By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	The first target of the ‘SDG 11’ is directly linked with upgradation of slums by providing adequate, safe and affordable housing and basic services in slums.
<b>11.3</b> – By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Integrated and sustainable human settlement planning and management can be achieved with land efficient city planning with help of participatory approach at city and neighbourhood level. Participatory slum upgrading program facilitates the city planners in-situ slum upgrading.
<b>11.5</b> – By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global GDP caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	Most of the slums are untenable and are prone to disasters epidemics etc. by achieving this target of SDG 11 slum up gradation programs will address this issues in sustainable way.
<b>11.6</b> – By 2030, reduce the adverse per capita environmental impact of	One of the common characteristics. There is no proper sewage disposal and waste collection mechanisms in

cities, including by paying special attention to air quality and municipal and other waste management	the slums and this will affect the overall sanitation in slums. So by addressing this goal the conditions of slums will improve. Further, community led waste management schemes in slums can be the solution for this issue.
<b>11.7</b> – By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities	Slums deals with main one issue of lack of land for slum dwellers for housing or other facilities. So by promoting concepts of community space in slums will address this goal and lead to slum up gradation and thus lead to slum free cities.
<b>11.a</b> – Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning	Positive economic and social and environmental links between urban, peri urban and rural areas will control regional imbalances and rural urban migration. Thus a nationwide policy framework will control the future formation of slums. Therefore, successful implementation of this target/goal will help in achieving slum free cities.
<b>11.b</b> – By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels	Implementation of integrated policies and plans towards inclusive resource efficiency, mitigation and adaptation to climate change, resilience to disaster and holistic disaster risk management at all levels will directly impact the vulnerability aspect of slum dwellers related to natural and manmade disasters due to their locational constraints and infrastructural deficiencies/precariousness. Hence, will impact in positive way in slum up gradation leading to slum free cities.
<b>11.c</b> - Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials	The slums have poor quality structures made up of temporary low quality materials prone to water leakage, unhygienic living conditions lack of light & ventilation and are non-resilient structures prone to destruction in natural or manmade calamities/disasters. Therefore, developing sustainable and resilient building utilizing local materials with help of financial and technical assistance from developed countries will improve or upgrade the existing slums leading to slum free cities.

Issues of urban poverty and inequalities, urban planning, pollution, environmental degradation and climate change, etc that are linked to sustainable urbanization challenges can be found in several other goals such as Goals 1, 3, 6, 7, 17, etc [12],[19],[25].

**4.12 SDG 16: Promote peaceful and inclusive societies for sustainable development provide access to justice for all and build effective, accountable and inclusive institutions at all levels. Peace, justice and strong institutions**

This goal targets on achieving peace and effective governance, financial and institutional resources for implementation of other SDG(s). Slum upliftment requires careful urban planning and policies, to be implemented by various Institutions. Formulating the necessary policies including effective governance, urban planning and finance is vital in achieving slum free cities and it becomes crucial to build such institutions. The local Government has to address the urban complexities spread over different administrative boundaries and relies on effective institutions, governance, urban planning and infrastructure. Institutions have to be creative and innovative. Lack of adequate coordination among national, provincial and local authorities, hamper both planning and implementation of urban policies. Inadequate or poorly enforced rules and regulations governing urban management due to weak, inefficient institutions and poor civil society participation leads to unplanned and leapfrog developments. A support of efficient legal and institutional framework is essential for framing adequate rules & regulations and its implementation for achieving slum free cities. Achieving this goal will Strengthening urban legislation and systems of governance.

Institutional Capacities and Governance holds the key to achieve well managed cities and towns. In India Urban development is a State subject. State governments define state-specific urban development policies and its implementation also depends on the functioning of State Government authorities and Institutions. There are 3 levels of institutions involved urban development in India: (i) local government/ the Urban Local Bodies (ULBs) (ii) Planning and development authorities under the state Town and Country Planning Acts, (iii) agencies involved for infrastructure development in cities.. These institutions have overlapping responsibilities involved in the process of urban development. State governments, are responsible for urban development, providing affordable housing to the poor, and slums redevelopment/upliftment. The situation has not been improved even after the 74th Constitutional Amendment Act of 1992. There should be proper coordination at all the levels in order to achieve sustainable urban development. Hence there is need to further strengthen and improve the Governance to meet the emerging challenges and to further achieve the slum free cities in India [2],[16],[20], [27].

#### **4.13 SDG 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development Partnerships for the goals**

Goal of Achieving slum free cities with the help of these sustainable goals will only succeed if there are strong global partnerships for sustainable development. Partnerships for sustainable urban development involve a wide network of actors, including international organizations, member states of United Nations, international and regional associations of cities, NGOs, the private sector, funding organisations, goodwill ambassadors and civil societies, etc. There are several agencies working in the field of sustainable development with partnerships like UN-HABITAT, UNISDR, WHO, UNEP, UNESCO, other UN agencies and intergovernmental organizations with aim to achieve the Sustainable development goals and targets [25]. Role of Private sector involvement in infrastructure projects could not be ignored as it helps in bridging the gap between the available public resources and the funds required. There is a need to strengthen the institutional framework governing Public Private Partnerships (PPP) to avoid the bottlenecks in smooth implementation of urban development projects. Slum rehabilitation with participation of private developers using land as a resource, Promotion of affordable housing by credit-linked subsidy, Affordable housing in partnership with public and private sector Subsidy for beneficiary-led housing construction or enhancement are some of the schemes that are under implementation in India under PMAY (U) which largely depends upon the involvement of Private sector. Further, the Availability of sufficient funds to be utilized on social development programs like slum upgrading etc. is always a constraint in developing countries like India. Strengthening domestic resource mobilization through international support will help in providing sufficient funding for such programs [2], [16], [20]. It is globally accepted fact that India will be playing an important role in determining the relative success of SDG(s) as it is the second most populous country of the world. Hence, there is a need at global level also to strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

#### **5.0 Conclusions & Discussions**

As per the SDGs our aim is to achieve cities and human settlements where all persons are able to enjoy equal rights and opportunities, as well as their fundamental freedom guided by the purposes and principles of the Charter of the United Nations, including full respect for international law. All the factors and characteristics related to slums are holistically addressed by the United Nations in Sustainable development Goals. Achievement of Goals and targets of SDG(s) 1,2,3,4,6,10 will directly or indirectly lead to the prevention and upliftment of slums. Especially, the SDG 11 focuses directly on to make cities and human settlements inclusive, safe, resilient and sustainable with the target to achieve by 2030, ensuring access for all to adequate, safe, and affordable housing and basic services and upgrade slums. However, SDG(s) 5, 7, 8, 9 may indirectly provide support in achieving the other goals. Achieving SDG(s) 16 and 17 will provide necessary framework, guidelines for strengthening the institutions and Budgetary & financing mechanism for effective implementation and achievement of policies and programs aligned with the Sustainable Development Goals through effective Governance. The achievement of these identified goals addressing slums should bring tremendous upliftment in the quality of life of people living there and will also address the factors that are responsible for slum formation. Further, it observed that there are factors related to Social, Economic and Environmental sectors responsible for creation of slums and the characteristics of existing slums are also related to these three sectors. The National Development Agenda is required to be aligned with the SDG(s) with proper coordination between Centre, State/UT and authorities at local level for effectively achieving the SDG(s) and targets.

## 6.0 Scope for Further Research

- (i) Further research needs to be carried out to identify the various programs and policies of Government of India those are aligned with the above identified Sustainable development Goals sector-wise (Social, economic and Environmental) which are directly related to the slums.
- (ii) Thereafter, the assessment of synergies and convergences between these identified SDG(s) and existing Government Schemes and programs may be done to identify the gaps and dark areas that need interventions so that strategies and model for slum free cities in India may be evolved.

## 7.0 References

1. Government of India (2017) "Appraisal document of Twelfth five year plan 2012-17", New Delhi: National Institution for Transforming India from <https://niti.gov.in> accessed on 13.10.17.
2. UN-HABITAT (2016). "Urbanization and development: emerging futures. World cities report 2016", Nairobi: United Nations Human Settlements Programme (UN-Habitat), from <https://www.unhabitat.org/wp-content/uploads/2014/.../WCR-%20Full-Report-2016.pdf> accessed on 03.10.2017.
3. Government of India (2011) "India's urban demographic transition The 2011 census results (provisional)", New Delhi: JNNURM Directorate, Ministry of Urban Development and National Institute of Urban Affairs from <http://indiagovernance.gov.in/files/urbandemographictransition.pdf> accessed on 27.01.2018.
4. Government of India (2015), "Slums in India. A statistical compendium 2015" New Delhi: Ministry of Housing and Urban Poverty Alleviation, National Buildings Organisation.
5. United Nations (2015) "The Millennium Development Goals Report 2015" New York: United Nations from [http://www.un.org/millenniumgoals/2015\\_MDG\\_Report/pdf/MDG%202015%20rev%20\(July%201\).pdf](http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf) accessed on 28.01.2018.
6. Government of India (2014) "Millennium Development Goals India Country Report 2014", New Delhi: Ministry of Statistics and Programme Implementation, Social Statistics Division.
7. United Nations Development Programme (2016) "From the MDGs to Sustainable Development for all: lessons from 15 Years of Practice" New York: United Nations Development Programme from <https://docplayer.net/53863309-Empowered-lives-resilient-nations-united-nations-development-programme.html> accessed on 28.01.2018.
8. United Nations (2017) "The Sustainable Development Goals Report 2017" New York: United Nations from <https://unstats.un.org/sdgs/files/report/2017/thesustainabledevelopmentgoalsreport2017.pdf> accessed on 26.12.2018.
9. United Nations (2015) "Transforming our world: the 2030 agenda for sustainable development" New York: United Nations from <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> accessed on 29.07.2018.
10. United Nations Human Settlements Programme (2003), "The challenge of slums: Global report on human settlements 2003", Nairobi: UN-Habitat from <https://www.un.org/ruleoflaw/files/Challenge%20of%20Slums.pdf> accessed on 12.11.2016.
11. UN-Habitat "Housing and slum upgrading" from <https://unhabitat.org/urban-themes/housing-slum-upgrading> accessed on 28.01.2018.
12. UN-Habitat (2015) "Slum Almanac 2015/2016" Nairobi: UN-Habitat from <https://unhabitat.org/slum-almanac-2015-2016/> accessed on 03.12.2017.
13. Luhar, H. (2014). "Causes for the creation and expansion of slum". Sai Om Journal of Commerce & Management, **1**, **10**, ISSN-2347-7571.
14. Bhatta, B.(2010), "Analysis of Urban growth and sprawl from remote sensing data". Springer Heidelberg "Chap 2".
15. Oxford Poverty & Human Development Initiatives "Multidimensional poverty" from <https://ophi.org.uk/research/multidimensional-poverty/> accessed on 31.08.2018.
16. Hindman, M., Lu-Hill, O., Murphy, S., Rao, S., Shah, Y., Zhu, Z.,(2015) "Dow Sustainability Fellowship 2015: Addressing Slum Redevelopment Issues in India" Michigan: Dow Sustainability Fellows Program, University of Michigan.
17. Bombay urban industrial league for development, (2010) "EAT LESS, SLEEP LESS, AND WORK MORE: Situational Analysis of Food Insecurity in Urban Slums of Mumbai" Bread for the world Germany from <http://buildindia.org/FINAL%20REPORT.pdf> accessed on 31.08.18.
18. Dev, M.S., (2013) "Rising food prices in South Asia: A policy framework to mitigate adverse effects" New Delhi: United Nations, Economic and Social Commission for Asia and the Pacific, from [https://www.unescap.org/sites/default/files/SSWA\\_Development\\_Paper\\_1301\\_January2013\\_6.pdf](https://www.unescap.org/sites/default/files/SSWA_Development_Paper_1301_January2013_6.pdf) accessed on 31.08.2018.
19. Un-Habitat (2018) "2018 HLPF Thematic Review of SDG 11, Make Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable: A global perspective on SDG-11" from <https://unhabitat.org/sdg-11-executive-summary> accessed on 08.04.2018.

20. Government of India (2017) "Three Year Action Agenda 2017-18 to 2019-2020" New Delhi: National Institution for Transforming India, from <http://niti.gov.in/writereaddata/files/coop/IndiaActionAgenda.pdf> accessed on 03.12.2017.
21. UN-Habitat (2012) "Gender Issue Guide: Housing and Slum Upgrading" Nairobi: United Nations Human Settlements Programme. [https://www.ohchr.org/Documents/Issues/Housing/InformalSettlements/UNHABITAT\\_Housing\\_and\\_SlumUpgrading.pdf](https://www.ohchr.org/Documents/Issues/Housing/InformalSettlements/UNHABITAT_Housing_and_SlumUpgrading.pdf) accessed on 02.12.2017.
22. United States Agency International Development (2015) "Water, sanitation and hygiene of the Poor in urban India" New Delhi: Health of the Urban Poor (HUP) Program Population Foundation of India, from <http://www.populationfoundation.in/Publications/> accessed on 02.09.2018.
23. McKinsey & Company (2011) "Urban world: Mapping the economic power of cities" McKinsey Global Institute from [https://www.mckinsey.com/~media/mckinsey/featured%20insights/urbanization/urban%20world/mgi\\_urban\\_world\\_mapping\\_economic\\_power\\_of\\_cities\\_full\\_report.ashx](https://www.mckinsey.com/~media/mckinsey/featured%20insights/urbanization/urban%20world/mgi_urban_world_mapping_economic_power_of_cities_full_report.ashx) accessed on 02.09.18.
24. Bandyopadhyay, A., Agrawal, V. (2013) "Slums In India: From Past To Present" International Refereed Journal of Engineering and Science (IRJES), 2, 4, pp.55-59
25. Un-Habitat (2018) "Tracking progress towards Inclusive, Safe, Resilient and Sustainable Cities and Human settlements SDG 11 synthesis report: HIGH LEVEL POLITICAL FORUM 2018" Nairobi: UN-Habitat from <https://unhabitat.org/sdg-11-synthesis-report-2018-on-cities-and-communities/> accessed on 02.09.2018.
26. Revi, A., Parikh, A., Bhan, G. (2010) "India Vision 2030" Bellagio: Indian Institute of Human Settlements from <http://iihs.co.in/knowledge-gateway/india-vision-2030-version-2-0/> accessed on 12.11.2017.
27. Government of India (2016), "INDIA HABITAT INTERNATIONAL REPORT 2016" New Delhi: Ministry of Housing and Urban Poverty Alleviation from <http://habitat3.org/wp-content/uploads/Habitat-III-India-National-Report.pdf> accessed on 29.07.2018.