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Inclusive and Sustainable City Exhibition and Dialogue

17 to 21 October 2016

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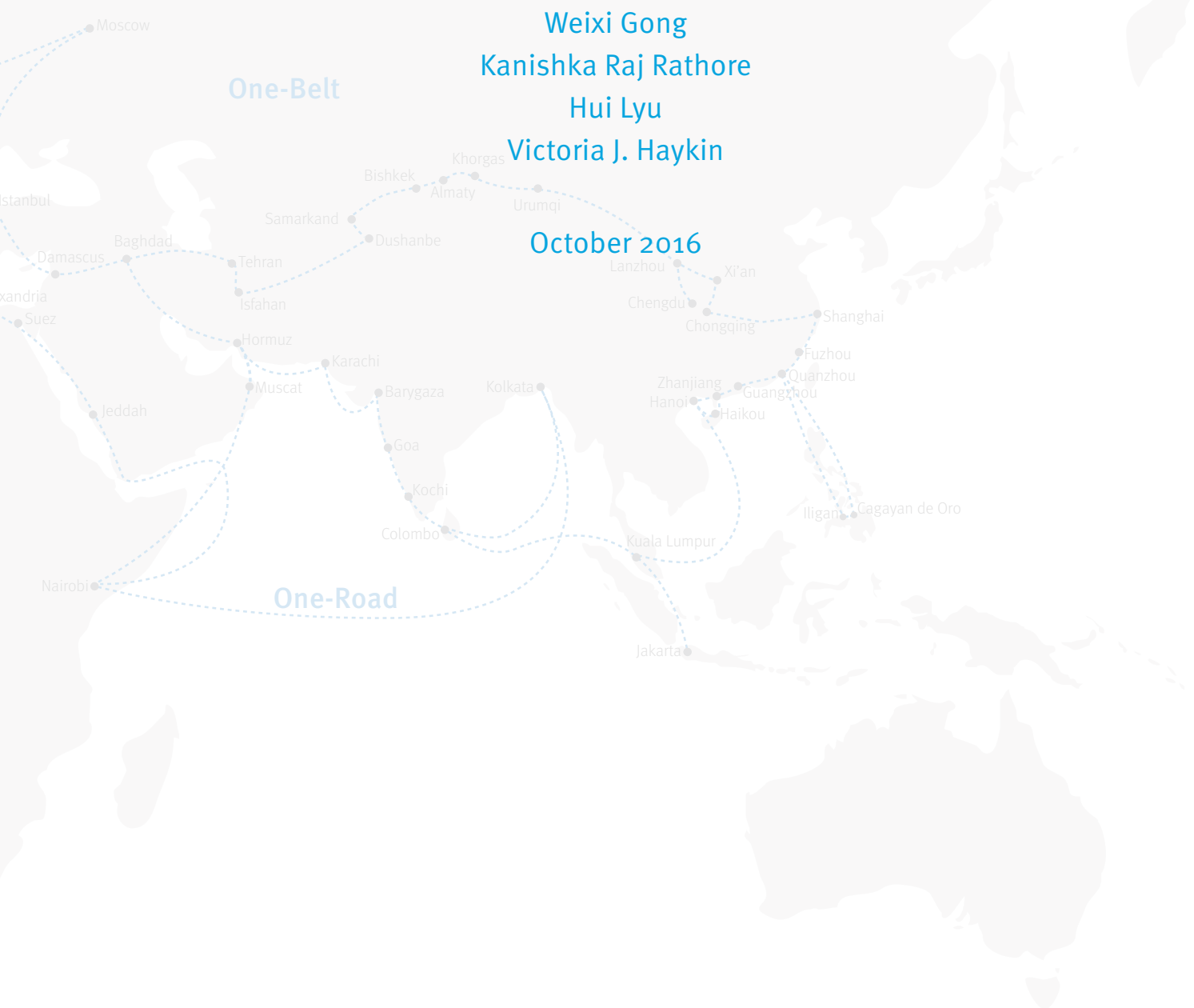Vienna, Austria
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Issue Paper

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Cities at a Crossroads:
Unlocking the Potential of Industries in Sustainable Urban Development

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ACKNOWLEDGEMENTS

CONTENTS

List of Figures

1. INTRODUCTION

Cities play a dominant role in provoking concrete action. Possessed of both economic and political strength, cities have the capacity to guide their countries forward along the path to sustainable development. Over the past decades, with advancements in technology, industry and urban infrastructure, cities have come to contribute 70% of global wealth. Due to a lack of national urban policy and integrated urban development, however, precious resources have become increasingly compromised throughout the globe.

Cities are at a crossroads. The world is developing rapidly across different sectors, but there is an urgent need for an inclusive approach to guide sustainable city development. It is estimated that the urban population will add 2.5 billion people and reach a percentage of 66% of the total global population by 2050 (United Nations Department of Economic and Social Affairs, Population Division, 2014). Meanwhile, the economy is expected to triple with the addition of more industries, directly affecting the urban environment and resources.

Industrial development has played a crucial role in supporting economic growth and urban development. How can we then enable industries to build up sustainable cities? In recent years, the answer has become more and more clear: Industrial development should adapt a holistic approach in order to ensure economic growth and material improvement that is socially inclusive and environmentally sustainable. Industries need to unlock their potential and to contribute more efficiently towards sustainable urban development.

On the international stage, the United Nations Industrial Development Organization (UNIDO) has consistently set the tone when it comes to promoting and advancing inclusive and sustainable industrial development globally. Despite the importance of national- or international-level projects, efforts at the city level remain of vital importance. City leaders have begun to realize that cities require a new approach in order to address issues of rapid urbanization. Industrial development can become a key instrument of change by adding economic value, as well as improving social and environmental factors. International development agencies such as UNIDO must therefore engage directly with city stakeholders and play a greater role in leading and coordinating initiatives for sustainable urban development.

This issue paper highlights current issues and challenges and aims to engage readers in further discussion. Topics addressed include an analysis of the urban dimension in the 2030 Agenda for Sustainable Development, the challenges of urbanization, the role of industries in the process of sustainable urban development and possible avenues for future action and cooperation. The paper attempts to elaborate these issues in a holistic manner and aims to set the stage for UNIDO's "One-Belt-One-Road Inclusive and Sustainable City Exhibition and Dialogue".

2. SYSTEMATIC ANALYSIS OF THE SUSTAINABLE DEVELOPMENT GOALS

The 2030 Agenda for Sustainable Development was adopted by the Member States of the United Nations in September 2015 with the aim of walking the path to sustainable development together as one. A total of 17 Sustainable Development Goals (SDGs) are encompassed in the Agenda, all of which include a set of targets along different dimensions that if meet will signal the achievement of the global goal of sustainable development. The SDGs provide stakeholders from all levels with a common framework in which to work together for the "people, planet and prosperity". The 17 SDGs are accompanied by 169 targets, which set out objectives to be achieved by the end of the year 2030. These targets are applicable globally, and they take into account the capacities and development levels of different nations (Communitas Coalition, 2014).

The success of the Millennium Development Goals (MDGs), which were agreed upon in the year 2000, and were aimed to reduce extreme poverty-related issues by 50% in the span of 15 years, led to the foundation of SDGs. The MDGs addressed issues such as chronic hunger, low income, lack of education and proper healthcare, lack of access to water and sanitation, etc. The MDGs produced significant results, for example, the probability of a child dying before the age of five has been reduced by 50%. Some countries however did not show significant improvements, especially in the area of sustainability and environmental management. According to World Bank, more than 700 million people are still under the World Bank's poverty line. Even though there is progress economically, an increase in inequality has occurred in many societies. On the other hand, the world is facing environmental problems due to anthropogenic activities. Corruption and poor governance are other major issues seriously affecting the world today (Sustainable Development Solutions Network (SDSN), 2015). It was therefore agreed that to achieve results globally, there was a need to broaden the scope of the MDGs.

Figure 1: Sustainable Development Goals
 (Source: UN, 2016)

The SDGs aim to respond to these issues and to address development challenges in a much broader manner. As the name suggests, the SDGs have adopted "Sustainable Development" as the leading principle for international cooperation. "Economic Development", "Inclusive Development" and "Environmental Sustainability" are the three major pillars driving international cooperation. Hence, the all-encompassing name "Sustainable Development Goals" sends a clear message across the world, encouraging development stakeholders to engage with one another and to work together towards sustainable development. The SDGs encourage stakeholders to refrain from antiquated approaches and to use resources in a sustainable manner.

2.1 Opportunities

The framework of the SDGs has been designed and developed to address global issues in a holistic manner. There have been remarkable advancements in today's world in the fields of healthcare, energy, nano-technology and information technology, to name but a few. All of these advancements have opened up new opportunities for partnership and economic development. To ensure efficient implementation, the SDGs provide five sets of key opportunities (Sustainable Development Solutions Network (SDSN), 2015):

a. Inclusive Development

The involvement of multiple sectors and representatives of society is integral to achieving the SDGs. The SDGs therefore aim to engage different stakeholders in collaborative partnerships. Government organizations, civil society and businesses along with local citizens have to become involved and engaged in order to ensure better-planned, better-focused initiatives.

b. Universal Development

The MDGs focused more on developing countries. The role of developed countries was to support the implementation of the MDGs by providing financial and technological assistance to developing countries. The SDGs, on the other hand, encompass countries at all levels of development, and thus the goals are considered universal. All countries should develop policies and programmes based on their national contexts, capacities and levels of development.

c. Integrated Development

As mentioned earlier, the SDGs take an integrated approach to sustainable development. "Economic Development", "Inclusive Development" and "Environmental Sustainability" are three main pillars intended to ensure sustainable development. For example, if a country wishes to address its hunger problem, its policies must be connected directly and indirectly to its policy for rural development, agricultural programmes and policies, natural-resource management, employment opportunities and skill development, which further requires the involvement of different stakeholders.

d. Locally Focused Development

To ensure the successful implementation of the SDGs locally, urban authorities or local governments must be responsible. Urban, suburban and rural areas all play an important role as far as the successful realization of the SDGs is concerned. A bottom-up approach helps connect local communities and raises awareness of local issues. Urban population is projected to reach 66% of the world's total population by the year 2050, and with such a huge influx of people migrating towards cities, urban areas will play an increasingly important role in ensuring the successful implementation of the SDGs (United Nations Department of Economic and Social Affairs, Population Division, 2014). Innovation, interest and urban investments will thus bring the world closer the achieving the SDGs globally.

e. Technology-Driven Development

Technology and economic development go hand in hand. With great advancements in the field of technology, come more opportunities for partnerships and economic cooperation. With advanced technologies, manufacturing industries, especially in developing countries, can produce efficiently and save financial resources, thereby explicitly contributing to the achievement of the SDGs. With the transfer of technology from developed to developing countries or with the exchange of local technologies between developing countries, countries can together help one another to achieve the SDGs in a more resourceful manner. South-South cooperation and UNIDO's pioneering mandate in inclusive and sustainable industrial development (ISID) can thereby directly contribute to the achievement of the SDGs.

2.2 Challenges

Although the SDGs provide us with an opportunity to address global issues, there remain several challenges to their implementation.

- **Strengthening Governance**

  Governance refers to the process of decision-making and taking action. Since many actors and stakeholders must be involved, the question remains how businesses, government organizations, members of civil society and city representatives can best work together. Strong governance ensures the successful implementation of programmes and policies developed to achieve the SDGs. In the context of the SDGs, unless a strong mechanism for governance is in place, it will be challenging to bring all the required actors together.

- **Managing Difficult Trade-Offs**

  The achievement of the SDGs will result in co-benefits. When working to achieve one goal, other goals and their targets may also be addressed. For example, improving city life will have co-benefits such as energy security, improved infrastructure, the reduced impact of climate change and safeguarded biodiversity. There will also be trade-offs, however, when addressing issues that may result in other directly or indirectly negative impacts. For example, to address the issue of food security, agricultural production has to be expanded and in some cases, tree cover must be cleared to provide the required capacity. To expand agricultural production, the use of water resources must be intensified, and thus water security might also be threatened.

  Achieving the SDGs will require development stakeholders, including governments, civil societies, businesses and local citizens, to opt for difficult choices and decisions. Unless there is a strong will from all sections of society, there is always the risk of the implementation of the SDGs being considered "too hard" to even attempt.

- **Accountability**

  One of the major challenges will be the delegation of accountability to different stakeholders. A proper mechanism is necessary to ensure accountability and responsibility at different levels – internationally, nationally and locally. Inputs must be measured (for example, did the nation invest the entirety of what was promised while working towards achieving specific goals) and so must outputs (for example, did the nation succeed in achieving its desired outcomes).
  We will therefore need proper tools to monitor and gather feedback at the policy level, to hold stakeholders accountable. Not only the government, but also other stakeholders such as private businesses and NGOs ought to be held responsible in case of any discrepancy. To ensure proper implementation of the SDGs, a proper feedback mechanism must be instituted at different levels.

2.3 The Urban Dimension of the SDGs

Currently, more than 50% of the world's population lives in cities. The importance of cities and urban development cannot be overstated as cities not only generate more than 70% of global wealth, but also produce 70% of global greenhouse gas emissions. Global sustainability will not be possible without first ensuring the sustainability of cities.

SDG 11 champions the cause of urban development and aims to "make cities inclusive, safe, resilient and sustainable". But as a city in and of itself comprises various components and factors, it is hard to limit urban issues to a single goal. Initiatives and programmes towards the achievement of other goals can therefore also contribute to city development (Cities Alliance, 2015).

Indeed, a study conducted by Misselwitz P. et. al. better illustrated how other SDGs are indirectly linked to SDG 11. In fact, 10 of the 17 SDGs can be connected to SDG 11.
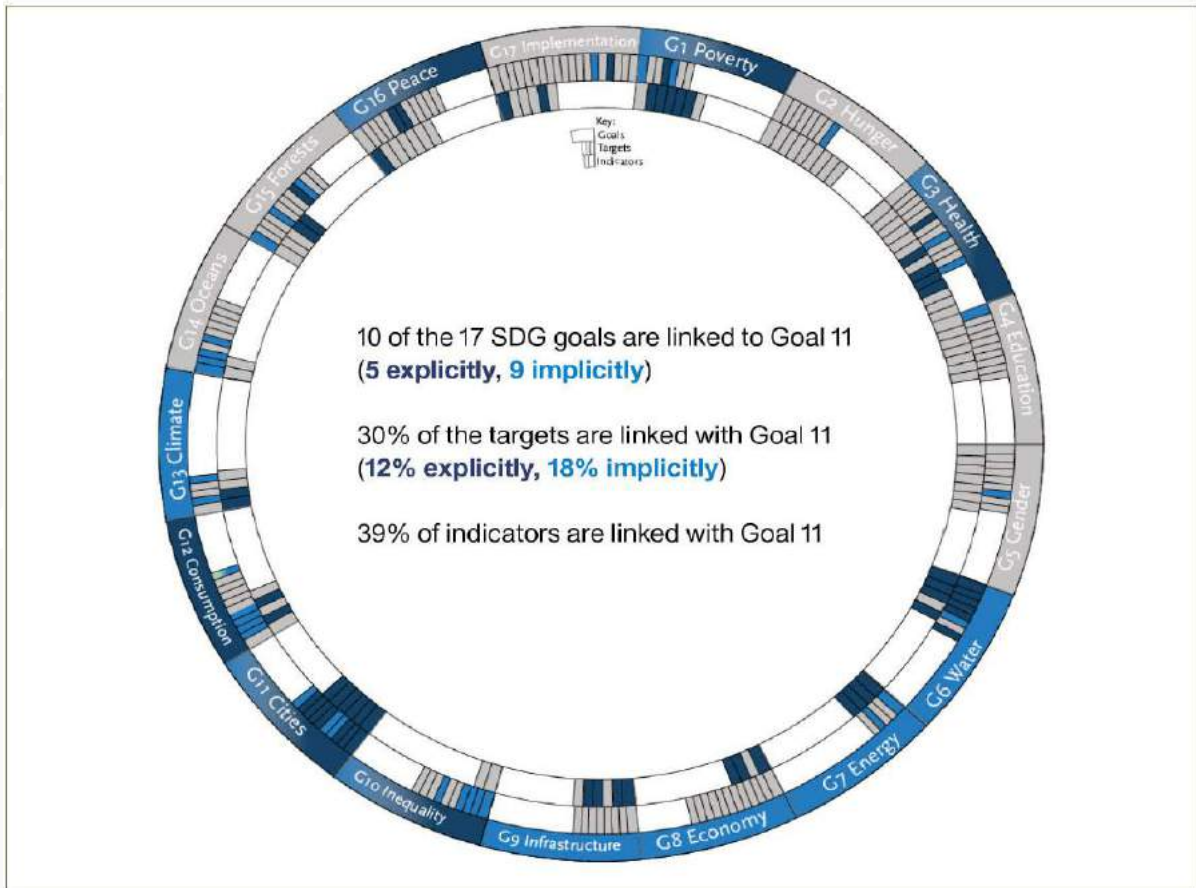
Figure 2: Illustration Depicting the Urban Dimension of the 2030 Agenda and its linkages with SDG 11
(Source: Philipp Misselwitz, Jesus Salcedo Villanueva, Anna Rowell, 2015)

In order to reduce inequality, special attention must be paid to cities. Residents of urban areas are the hardest hit by economic inequality. Achieving the SDGs will therefore require collaboration between different sectors, local authorities and stakeholders, and the projects and programmes developed therein can be linked to different sectors.

Cities also produce a vast amount of waste every day and are among the largest consumers of energy. SDG 12 focuses on sustainable consumption and production, and the achievement or non-achievement of most of the objectives associated with SDG 12 will be determined by consumption trends and patterns in urban areas.

UN agencies and other international organizations have also been contributing to the implementation of the SDGs. As culture and tourism are an integral means of income generation in many cities, the United Nations World Tourism Organisation contributes to sustainable urban development through SDG 8 ("promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all"), SDG 12 ("ensure sustainable consumption and production patterns") and SDG 14 ("conserve and sustainably use the oceans, seas and marine resources for sustainable development").

The United Nations Development Programme (UNDP), on the other hand, helps countries and cities to implement a broader range of goals. UNDP is the strongest contributor to SDG 1 ("end poverty in all its forms everywhere), SDG 10 (Reduce inequality within and among countries") and SDG 16 ("peace, justice and strong institutions"). By encouraging countries to develop an integrated framework, UNDP plays a fundamental role in supporting national policymaking for sustainable development.

2.4 Urban Development and SDG 9: Industry, Innovation and Infrastructure

As discussed previously, together with SDG 11, there are other goals that directly or indirectly contribute to sustainable urban development. SDG 9 is one of the most relevant goals with regards to its potential influence on city development. Transport, energy, information and communication technologies are the basic threads of urban development and should be the focal point for city planners and mayors. Local governments will have to adapt technologies and good practices to meet the needs and demands of their cities (United Cities and Local Governments (UCLG), 2015).

In parallel with UNIDO's mandate, the targets of SDG 9 address access to energy, water and basic sanitation facilities. SDG 9 especially emphasizes sustainable industrialization and its positive impact on society. The importance of the manufacturing sector in shaping the economic structure of cities cannot be ignored. Sustainable industries lead to job creation, which helps cities and societies develop and grow while ensuring an equitable use of resources. SDG 9 also highlights the importance of the agribusiness industry in sustaining employment generation and development for least-developed or developing economies. According to the Food and Agriculture Organization of the United Nations (FAO), urban agriculture or urban farming meets the basic dietary requirements of over 700 million urban residents globally.

SDG 9's targets include several important factors related to urban development, such as infrastructure development, scientific research, efficient use of resources, technology development, and especially the development of information and communications technology (ICT). The aim is to promote inclusive and sustainable industrialization to support economic development and human well-being, with a focus on affordable and equitable access for all.

3. CHALLENGES OF URBANIZATION: ISSUES AND THEMATIC GAPS

Urbanization brings people from rural areas and mainly agricultural communities to large, developed areas, resulting in a shift from an agricultural to industrial economy. The unplanned expansion of cities on agricultural land is a critical problem of urbanization.

Urban living is a relatively new term but refers to an already well-engrained practice. Historically, an agrarian lifestyle follows after the hunter-gatherer phase of development. In 1800, only 3% of the population in the world lived in the cities. A century later, the number of people living in urban areas reached 14%, but only a meager twelve cities had a population of over 1 million. As time passed, the number of cities containing a million inhabitants grew rapidly.

In today's world, the number of mega-cities with 10 million inhabitants has increased to twenty-eight. In the past two decades, the number of megacities has tripled, and by 2030, the world will boast a projected forty-one megacities. In the past, the world's most densely populated cities were located in developed countries. Today, the largest urban agglomerations are found in developing nations (United Nations Department of Economic and Social Affairs, Population Division, 2014).

Figure 3 illustrates the top ten largest urban agglomerations and their historical growth patterns, as well as their projected growth patterns in the future. It is clear that cities from developing countries (i.e. Delhi, Mumbai, Shanghai and Beijing) have experienced a tremendous surge in urban population growth over the past years and that this trend is expected to remain unchanged in the coming years. In the case of Tokyo and New York, however, the population growth rate is comparatively stable.
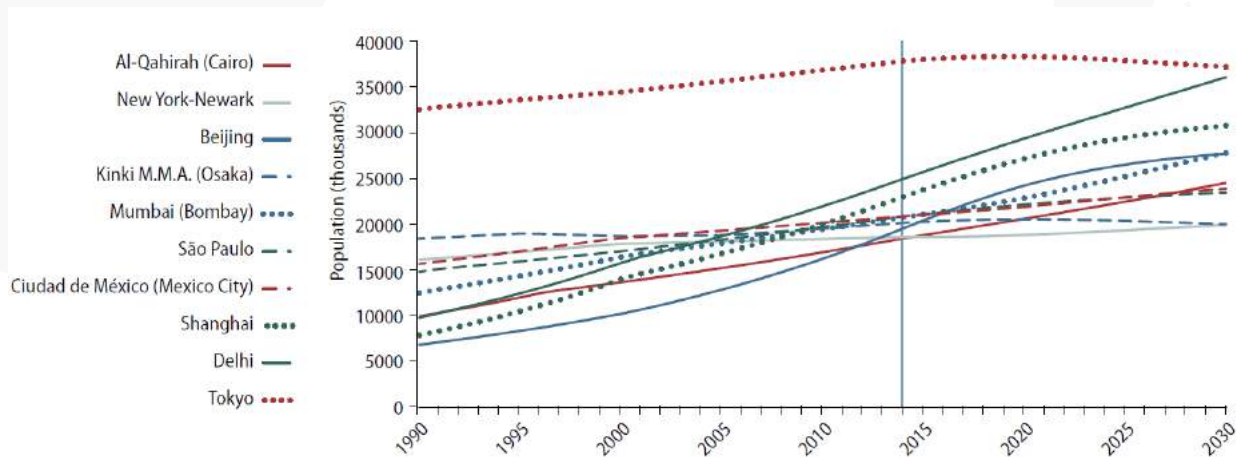
Figure 3: Top 10 Largest Urban Agglomerations and their Growth Patterns
(Source: UN Department of Economics and Social Welfares, World Urbanization Prospects—Revision 2014)

3.1 Urbanization – Challenges

Countries from Asia and Africa are some of the fastest-growing economies in the world. With economic growth, comes an increase in the migration of rural population to urban areas. With migration, the population in cities increases at a rapid rate, leaving urban planners and municipal bodies in disarray (Roy, 2009). Urbanization may be good for the overall economy of a country, but in the face of rapid urbanization, developing nations are facing several pressing problems. Current issues and challenges for rapidly urbanizing cities are detailed below.

- **Urban Sprawl**

  Dispersed development outside of compact urban and village centres along highways and into the countryside is defined as sprawl. It is the unchecked spread of cities into adjacent lands. More and more, towns and cities are spreading out and altering land-use patterns along the roads connected to other cities and towns, which has led to the establishment of businesses and industries. As oversight by local authorities is lacking in these suburban areas, this often results in highly unplanned and undeveloped areas. Sensitive ecological areas are disturbed and destroyed. High sprawl results in increased per-capita usage of land, energy and water (Saini, 2014).

- **Overcrowding**

  With rural populations migrating towards cities, cities are also suffering from overcrowding. As a major part of the urban population wishes to live in close proximity to the Central Business District (CBD), cities are forced to build high-rise buildings, putting increased pressure on pre-existing infrastructural facilities.

  Facilities like electricity, housing, water, transport and employment are facing acute pressure to cope up with an ever-growing urban population. Although municipal governments have made an effort to decongest in the core areas of their cities, the success rate is relatively very low.

- **Housing**

  Housing is another major problem that accompanies rapid urbanization. The rate of housing development and low-cost housing initiatives in developing countries are limited and slow. With an increase in population, the affordability and availability of houses in large cities has become an issue. The prices of apartments and houses closer to the city are comparatively high compared to other areas of the city, but as most major business and economic activities occur in the areas closer to the city center, this often leads to economic inequality. The central part of a city is usually occupied by the wealthier part of the urban population and the middle- or lower-class individuals are forced to locate away from the city center. In most large cities, infrastructural facilities decline as one moves further out from the city center.

- **Unemployment**

  Unemployment is another serious issue in urban settlements. People move to the cities in search of jobs and with a major influx of population to urban areas, this often leads to high competition for job opportunities. Even though incomes in urban areas are higher, when compared to rural areas, they nevertheless remain appallingly low due to high costs of living. With a dearth of employment opportunities, migrants often settle for low-paying jobs. ISID is therefore required to remedy unemployment issues and economic inequality in urban areas.

- **Slums and Squatter Settlements**

  Slums in cities have always been a problem. Poverty-stricken inhabitants in cities are struck by health hazards. The tremendous growth of slums has been a shocking side-effect of rapid urbanization and one which has to be minimized. In India, an alarming 54% of Mumbai's urban population resides in slums (Ray, 2011).

  There is no clear distinction or difference in definition between slums and squatter settlements. Slums are generally more stable and located in older city areas, while squatter settlements involve temporary structures. Squatter settlements can be found at the outer zones of a city, where the urban area merges with the rural hinterland.

- **Transport**

  Traffic and transportation are a major issue for city administrators. The rise in population also leads to a rise in personal vehicles, which creates problems such as congestion and pollution. The complexity of cities serves only to increase transport problems. Due to a lack of planning of transportation networks and roads, some areas in cities remain unaccusable by the public transport.

On the other hand, many cities are not focused on public transportation systems, and thus people prefer using their private vehicles to commute. Bicycle and pedestrian friendly pathways are not available in most of the world's fastest-growing cities.

- **Water**

  In developing countries, access to clean water is limited to only a few cities. As mentioned earlier, due to the heavy pressure on urban infrastructure and services, there is always a gap between the demand and supply of water resources. In some cities, houses do not have required water pipeline connections. Especially in summers, these conditions are made worse by a limited supply of water and accompanying high temperatures.

- **Sewerage Problems**

  Sewage facilities are invariably troubled by inadequate and ineffective solutions. In developing countries, most underground sewerage is either blocked or non-existent. Treatment of sewage waters, if not done properly, results in the dumping of sewage wastes into water bodies such as rivers and seas.

- **Trash Disposal**

  Trash disposal in highly populated cities is a huge problem. Due to the huge quantities of garbage produced by cities, health problems can pose a serious threat. Barren lands are used in most cities for dumping and are filled to the brim. Innumerable poisons leak into the surroundings wreaking havoc in the surrounding areas. As illustrated in the figure below, lower middle income countries are expected to suffer the most in the coming years.
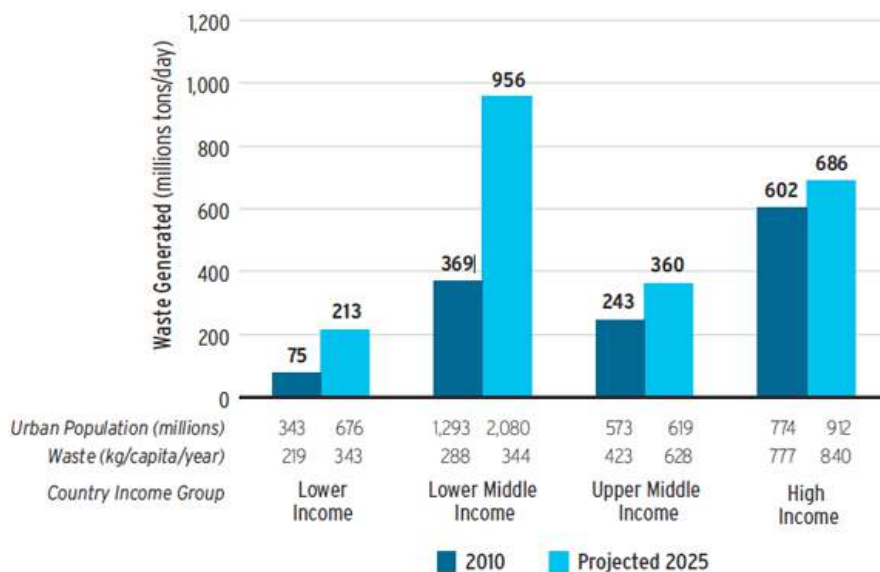
Figure 4: Urban Population and Waste Generation
(Source: http://www.citylab.com/ Nate Berg, 2016)

- **Urban Crime**

  Urban crime cannot be neglected. Competition in everyday life, increased use of consumer goods and heavy unemployment leads citizens into crime. Slums and squatter settlements also give rise to urban crime. Uncontrolled growth of a slum population not only affects security but can also negatively affect a city's image globally. During the Rio 2016 Olympics, numerous cases of robbery were reported and registered in Rio de Janeiro, Brazil.

- **The Problem of Urban Pollution**

  Urbanization is blowing industries and transport systems out of proportion. Plans to reduce pollution from these manufacturing firms have been neither properly formulated nor implemented. The increased use of vehicles has resulted in traffic congestion, which in turn has increased air- and sound-pollution levels. This increase in vehicle use and uncontrolled growth of industries is primarily responsible for the current situation of many cities in developing nations. Even though industries are a city's backbone, ensuring that they are environmentally sustainable and in compliance with all norms and guidelines is very important.

- **Energy**

  More than three quarters of the energy produced globally is consumed by cities, and they also contribute to 80% of the world's greenhouse gas emissions. In an era of resource scarcity, there is an urgent need to reduce cities' energy consumption and to promote renewable alternatives. Innovative methods and approaches to energy management will therefore be vital when it comes to tackling the challenges of future cities (ARUP, 2015).

3.2 Urban Development and Finance

With the world urbanizing and developing at a rapid pace, investments supporting sustainable urban development projects are of utmost importance. Urban development projects require a huge amount of financing, and local city governments are often unable to provide the required funds. Many cities have come up with innovative models (e.g. public-private partnerships, built-operate-transfer, tax free municipal bonds, etc.), but the requirements are huge and hard to implement (UN Habitat, 2014).

According to McKinsey Global Institute, global infrastructure investments of over USD 57 trillion will be required between 2013 and 2030 for the development of the telecommunications, roads, water and power sectors. Countries in Africa and Latin America are suffering the most due to a lack of urban investment. Underinvestment or lack of sufficient funds further hinders the course of development in developing economies.

- **Drivers of Urban Development**

  Deficiency of finance encumbers the development of cities. The key issue is that there still exists a significant gap between the demand of urban development and the capacity to finance urban development. Finance is the main driver of urban development and supports major sectors, such as transportation systems and infrastructure.

- **The Role of the Government**

  Another main issue is the role of government, which is influential in both the public and private sectors. The city has the power to borrow and allocate public resources. It also plays a role in promoting private investment in urban development. For example, urban-development investment companies have become a key element in financing and implementing the framework for public urban development in Shanghai, China.

- **Financial Inclusion**

  According to the World Bank, 2 billion people in the world do not use formal financial services. The primary reasons are costs, travel distances and the oftentimes-burdensome requirements. In certain cases, small and medium enterprises have more difficulties in reaching out to financial service providers. Financial inclusion can provide cities and economies with important benefits, including higher investment patterns and consumption, better productivity and income, and higher quality of life in the city.

- **The Involvement of Multiple Sources**

  The central and municipal government are the main financial sources for cities. External organizations like the World Bank and other multilateral development banks can help cities to develop along the proper trajectory. They have the possibility of bringing in new sources of financing for funding public infrastructure and service needs. The participation of the private sector and the capital market can also contribute to urban development. There are various ways in which these sources could cooperate with and support each other.

- **The Efficiency of Financial Operation**

  It is important to ensure that investments are made in key sectors. For example, public infrastructure is normally a priority. But public transportation might be the first priority for one city and sewage treatment for another. In order to increase the efficiency of financial operation, cities need to explore the most effective ways in which to allocate their limited financial resources.

  Public financing, international organizations and market-based private-sector financing have their special business fields. A combination of two or three together could provide a better financing solution. Different mechanisms are required to achieve sustainable development objectives.

3.3 Integrated Urban Development: The Need for Innovative Solutions

It can be seen clearly that the different challenges facing urban areas environmentally, socially and demographically are all interwoven and interlinked. As discussed earlier regarding the SDGs, all 17 goals directly or indirectly contribute to the theme of sustainable urban development and imply that the city should act as the focal point for the implementation of the 2030 Agenda. Hence, different stakeholders must work closely together to affect greater change. Urban physical planning should work in parallel with educational institutions, industrial leaders, and private-sector organizations, along with local citizens and civil society. Strong partnerships between local stakeholders will ensure integrated urban development. By combining local expertise and capacities and by developing innovative solutions, the path to achieving the SDGs will become more clear and effective.

Some such innovative solutions are listed below:

- **Housing Development Program in Addis Ababa, Ethiopia**

Addis Ababa, 'flower' in Amharic, is the capital of Ethiopia and home to four million inhabitants. After a phase of low urban development and growth, over the last two decades, the city has undergone rapid development. With GDP growth averaging 10.7 percent, Addis is expected to be one of the fastest growing cities in Africa between 2010 and 2020. With the population almost doubling every decade to date, the city has successfully embarked on an ambitious and innovative integrated housing development programme.

Figure 5: Housing Development Program in Addis Ababa, Ethiopia
(Source: iUrban (April 2014): Innovative city strategies for delivering sustainable competitiveness)

Project Brief

This initiative is one of the most ambitious projects in the field of urban development undertaken in Africa. The project was implemented in the year 2005 and aimed to create affordable housing units in the capital city of Addis Ababa. Redeveloping public housing, using barren and unused pockets of land, and implementing low-cost sustainable construction and green construction techniques were some of the main features. Payments for the houses were made via simple and affordable part payments. Along with the housing facilities, small enterprises were also intended to provide employment (Euricur; PwC, 2014).

Results and Replicability

Though the project was not able to meet all its initial targets, it has solved a major problem by providing affordable housing low-income residents. It has also become the hub of the manufacturing sector, generating a large amount of income and employment opportunities.

This solution is a smart one and has been proven effective in Ethiopia. Cities from other developing nations are already facing problems with ever-increasing slum populations. This solution can therefore be tried, tested and replicated to good effect in other cities.

- **Integrating the CBD with Transport in Melbourne, Australia**

Figure 6: Integrating the CBD with Transport in Melbourne, Australia
(Source: iUrban (April 2014): Innovative city strategies for delivering sustainable competitiveness)

Project Brief

The CBD in Melbourne, Australia was suffering from decentralisation. People had begun moving to the outskirts of the city and the daytime population in the CBD was falling. To fight this issue, the government took up different initiatives. With around 300 streets in the CBD of Melbourne, the government proposed using the streets in a better way. Landowners were given permission to use the streets creatively, to attract more tourists and to bring back the identity of the CBD. Now, there is at least one café, restaurant and/or shop on each street. With a limit placed on automobile traffic within the CBD, the streets have also become a pedestrian friendly zone. The municipal body has also constructed a pedestrian shopping centre and a park (Euricur; PwC, 2014).

Results and Replicability

The project was able to reverse the effects of decentralisation. It was a successful example of integrating transport, culture and business to preserve the identity of a city's CBD. The number of cafés alone has increased from 2 to 600 in the past twenty years. Tourists have also begun staying longer to explore the CBD. In many cities, CBDs are troubled by old streets and congestion. This initiative also aided small shop owners, who had been in the CBD for many years but whose business had been adversely affected by the advent of large-scale shopping malls. This project has had other unexpected benefits such as a pedestrian friendly city centre, new economic opportunities and tourism (PricewaterhouseCoopers Private Limited, 2013).

- **PlaNYC: New York, USA**

New York City is the most populous city in the US, and is estimated to exceed 9 million people in population by the year 2030. The City of New York consists of five boroughs totalling just over 300 square miles of land, and has a significant impact on the financial, fashion, commerce, media, art, technology and education industries. It is also the world headquarters for the United Nations and has a strong international relations presence. The city has predominantly relied on inherited infrastructure and delayed much needed improvements for most of the second half of the 21st century.

Figure 7: PlaNYC: New York, USA
(Source: iUrban (April 2014): Innovative city strategies for delivering sustainable competitiveness)

Project Brief

Aimed towards making New York greener, twenty-five agencies came together to launch PlaNYC. The goals of PlaNYC include affordable housing, green spaces and pockets in the city, better air quality, solid waste management, a reliable transportation system, energy efficiency and sustainable urban development. Green building laws were enacted to make the city environmentally sustainable. This included energy-saving fittings in buildings, green and sustainable construction techniques, and the installation of rooftop solar panels or gardens. Ney York City aims to reduce its greenhouse gas emissions by 80% in the next thirty years (Euricur; PwC, 2014).

Results and Replicability

Over 100 initiatives were approved in 2007, 90% of which have been launched. More than 60,000 affordable housing units were constructed in New York. Transit-oriented development led to the development of more than 20 zones. 30% of the taxis in New York are now converted to green vehicles. Around 1 million trees have been planted alongside streets and in parks (PricewaterhouseCoopers Private Limited, 2014). Cities can incorporate such initiatives to achieve their goal of sustainability and energy conservation. Green building laws will certainly make the city more liveable and provide a better environment for citizens.

4. ACHIEVING SUSTAINABLE URBAN DEVELOPMENT THROUGH INCLUSIVE AND SUSTAINABLE INDUSTRIAL DEVELOPMENT (ISID)

4.1 Cities and Sustainability: Key Concepts and Models

There are a number of concepts that can be used to describe sustainable urban development (i.e. eco-city, green city, inclusive city, innovative city, liveable city, smart city and sustainable city). These concepts are similar but focus on different aspects of sustainable city development.

The eco-city and green city concepts are mainly focused on the environment, while the inclusive city and livable city concepts are more concerned with the social aspects of urban life. Innovative cities emphasize the importance of innovation in economic growth and urban development. A smart city is a relatively new concept introduced, along with the sustainable city, in the last decade. These two concepts cover the social, environmental and economic aspects of urban development. The difference between them is that smart cities emphasize the process of sustainability, considering ICT a key tool in transforming urban development. By comparison, a sustainable city is a target-oriented concept, which believes that the city should meet the needs of the present without sacrificing the ability of future generations to meet their own needs.

Table 1: Different Concepts of Urban Sustainability

CONCEPT	FEATURE	FOCUSED ASPECTS
Eco-city	A city built on the principles of living in harmony with the environment, using renewable energy and other resources.	Environment, economy
Green city	Green urban biodiversity; Green economy that is low carbon, resource efficient and socially inclusive.	Environment, economy
Inclusive city	A city that has spatial inclusion, social inclusion and economic inclusion (The World Bank, 2015).	Social inclusion
Innovative city	A city that is innovative and a major driver of economic growth.	Social organization, Economic growth
Livable city	A city with good ecological sustainability and livability, which provides high quality of life	Environment, social inclusion
Smart city	Using modern communication technology to support sustainable urban development and a high quality of life	Holistic perspective, infrastructure
Sustainable city	A city "where achievements in social, economic and physical development are made to last" and a city that is inclusive, safe, resilient and sustainable (UNDP, 2015).	Holistic perspective

These concepts each have a different focus, but they nevertheless overlap with each other in the areas of environment, society and economy. There are more concepts related to sustainable urban development, such as the learning city or low-carbon city. All of these concepts are focused on one or more aspects of the three dimensions of urban sustainability, namely social equity, economic growth and environmental protection.

4.2 The Importance of Industries in Urban Development: Job Creation and Economic Growth

Industrialization and urbanization have a long history of mutual development. Urbanization began when humanity started to assemble, at first in places along rivers and transportation routes. These places were traditionally hub cities for trading urban products and services, as well as products from the agricultural sector. Prior to the industrial age, the farming sector could only accommodate a small population in urban areas. There are some great examples for well-planned historical cities (e.g. Rome, Paris or Chang'an). But for decades, the share of the urban population was consistently below 10%.

Since the industrial revolution began in the 19th century, there has been a rapid increase in the world's population and in the rate of urbanization. Industrialization has led the way in urbanization by creating economic growth and job opportunities, which draw people to cities. Economic activities in the agricultural sector have been reduced but have become more concentrated in secondary industries, including the manufacturing, construction and service sectors. There benefits of industrial development are twofold. On the one hand, it creates a high demand for workers with the possibility of better quality of life, which in turn produces demand for housing and even more jobs. On the other hand, the technological innovation from industrialization improves the productivity of the farming community, resulting in a small rural population supporting a huge urban population.

One of the most important problems in initiating urban development is that quite often cities, as the epicentres of industries, become trapped as pure production sites if they function solely as links in production chains and are unable to serve their own market area by creating an economic surplus. Multiplying effects and strong interdependent links within their respective networks are important to creating a milieu of growth and development (Braun, 2016).

Industrialization not only creates jobs in the industrial sector but also promotes economic growth by improving public-sector development in urban administration, infrastructure, public health and education. Throughout the course of human civilization, these changes have always accompanied the development of industry, and they have together improved the living conditions of the urban environment. This occurs because the industrial sector itself demands educated and skilled workers, new technology to increase productivity, and attractive living conditions.

Although recent financial and economic crises have hit the manufacturing sectors hard, the importance of the industry is still high. A strong industry is a promise for continued economic recovery and growth.

4.3   Industrial Zones and Urban Development Plans

There are both huge challenges and opportunities for industrial zones in today's society. Industry and cities have grown and developed together throughout history. But it is not sustainable to continue to pursue the old route. While driving economic development, industry has also had negative influences on the environment and has emitted a large amount of greenhouse gases, which poses a severe threat to climate and sustainability. Industrial development should be properly planned to avoid risks to the environment, social inclusion and economy.

There is a clear need for contemporary cities to find a more sustainable way to achieve industrial and urban development. The key issues of concern are green industry, low environmental impacts and efficient use of energy, water and other materials.

Industry is an organic part of the city, while ecological and green industrial zones are an essential part of sustainable urban development. Green industry is needed to promote sustainable patterns of production and consumption (i.e. patterns that are resource and energy efficient, low carbon and low waste, non-polluting and safe, and which produce products that are responsibly managed throughout their lifecycle) (UNIDO, 2011).

In the context of global climate change, industrial zones must reduce their consumption in production processes and their negative impacts on the environment. There are also opportunities to develop emerging industries related to sustainable development, such as the need to shift towards renewable energy, smart grids, ICT and so on, which will create new green jobs and services to further support urban development.

4.4 Inclusive and Sustainable Industrial Development (ISID) in Cities

UNIDO's ISID mandate is an important part of a long-term sustainable development agenda. ISID can provide the primary source of income generation, can allow for rapid and sustained increases in living standards for all people, and can provide technological solutions to environmentally sound industrialization. From the perspective of UNIDO, ISID implies that:

- Every country achieves a higher level of industrialization in their economies and benefits from the globalization of markets for industrial goods and services.
- No one is left behind in benefiting from industrial growth, and prosperity is shared among women and men in all countries.
- Broader economic and social growth is supported within an environmentally sustainable framework.
- The unique knowledge and resources of all relevant development actors are combined to maximize the development impact of ISID (UNIDO, 2015).

To promote the idea of ISID in urban development, several issues and concepts are illustrated below.

4.4.1 Eco-Industrial Parks

Industrial parks are crucial to urban development. They provide a large number of jobs and production value for cities. Traditional industrial parks are often not environmentally friendly. Eco-industrial zones or parks focus on ecological improvements in terms of reducing waste and improving the environmental performance of firms (Kechichian & Jeong, 2016). It adopts the circular economy approach as the key to reducing the environmental footprint of a city's industrial sector. Developing industrial parks in an ecological way is fundamental to urban sustainability.

4.4.2 Brownfield Redevelopment and Urban Regeneration

"Brownfield" refers to an area that was previously used for industrial purposes or commercial use. In both developed and developing countries, there is a need for urban regeneration. Proper brownfield redevelopment is a sustainable way of using the land. It saves on resources and can help preserve urban culture. Industries themselves can provide technical support for the regeneration of urban land.

4.4.3 Eco-Efficiency

Eco-efficiency involves providing more goods and services while using fewer resources and creating less waste and pollution. As energy is a key element in both the emission of greenhouse gasses and industrial development, cities must always balance their increasing energy needs with required reductions in carbon emissions. Increased energy and efficient use of other resources will help to cut costs and improve the competitiveness of industrial production.

4.4.4 Green Industry

Green industrial development is needed to support sustainable development and to achieve the SDGs. Here the word "green" refers to green manufacturing process, green technologies and socially inclusive economic patterns. As cities are economic drivers of national growth and are struggling with growing environmental concerns, they can play a key role in advancing green industry.

ISID provides a holistic framework within which to analyze different aspects together. ISID is an integrated approach that addresses all three dimensions of sustainable development – economic, social and environmental.

5. THE SDGs AS AN OPPORTUNITY TO STRENGTHEN SUSTAINABLE URBAN-INDUSTRIAL DEVELOPMENT: THE WAY FORWARD

Cities are estimated to consume 80% of the world's energy and emit 75% of greenhouse gas emissions. The traditional method of industrialization and urbanization is no longer working if one takes carbon emissions and climate change into account. Research has shown that the consequences would be disastrous if greenhouse gasses continue to be emitted at the current rate (IPCC, 2014). It is common consensus that human activities, especially those located in urban areas, have had a great influence on climate change (Scruggs, 2016).

To improve economic cooperation and to upgrade industrial and infrastructural development in a sustainable manner, the "One-Belt-One-Road" (OBOR) initiative was introduced in 2013. The OBOR initiative intends to promote an open and inclusive global economy by building cohesive regional trade networks and enhancing connectivity for growth in the near future. It has received a largely positive response from countries in the region.

In many respects, the 2030 Agenda for Sustainable Development and the OBOR initiative share a similar vison. The OBOR initiatives has identified five priority areas for cooperation – policy coordination, facilities connectivity, unimpeded trade, financial integration and people-to-people bonding – all of which contribute directly or indirectly to the achievement of all 17 SDGs (Hong, 2016). Although launched independently of the 2030 Agenda, the OBOR initiative will act as a strong instrument for the promotion of integrated sustainable development. The background paper titled "Jointly building the 'Belt and Road' towards the Sustainable Development Goals", authored by Mr. Pingfan Hong of the United Nations Department of Economic and Social Affairs, illustrates the OBOR initiative's important role in facilitating the implementation of the 2030 Agenda for Sustainable Development.

UNIDO's upcoming event entitled the "One-Belt-One-Road Inclusive and Sustainable City Exhibition and Dialogue" is therefore a large-scale intervention aimed at advancing the implementation of the SDGs. The city-level setting has been selected as the primary focus of this event for a myriad of reasons. First and foremost, cities represent the central hub and heart of every nation's industrial development and likewise have the greatest and most lasting impact on the lives of their citizens. In particular, industrial development is a key engine of job creation and income generation, and therefore plays an extremely vital role in sustainable city development.

The Mayor of Copenhagen has often reiterated that the SDGs reinforce the priorities of cities. The Danish capital is known for setting ambitious goals and targets to solve pressing urban issues. Copenhagen's urban-development goals are already in line with SDGs. The city has already started working on urban projects and engaging with partners to make the city smarter, greener, more sustainable and more inclusive (Biron, 2016).

In case of Johannesburg in South Africa, the SDGs are helping to harmonize national and local urban-development plans and policies. Because of conflicting policies, there have always been problems of implementation. Because of a lack of systematic urban-planning practices, one of the biggest issues is the polarization of the poor population in the suburbs of the cities. The mayor believes that the SDGs can help African countries shape their national urban policies,.

The major demands or challenges that need to be addressed globally to achieve sustainable urban development are mentioned below:

5.1 Energy

The challenge of energy is one of the most urgent problems regarding sustainable urban-industrial development. Economic growth is built on enormous energy consumption. With the support of new technologies, cities need to reduce their carbon emissions. From the supply side, renewable-energy production with clean and low-carbon features would be an effective way forward. From the consumption side, energy efficiency should be improved which means we need to change the way in which we use energy.

5.2 Environment

Environment and cities interact with and shape each other. Cites and industries should change their course to lessen their impact on the environment, which requires reducing their ecological footprint. There are two basic aspects, first resource consumption must be controlled, the other is to reduce discharge and disposal and to provide sustainable management of sanitation.

5.3 Industries and innovation

As pointed out, industries can be drivers of sustainable economic growth and urban development. On the one hand, industries should keep themselves to a more sustainable trajectory, which means improving energy efficiency and resource consumption by using clean technologies. On the other hand, industries could and should support urban development by implementing technologies in sectors that are vital to ensuring sustainable development.

Innovation is one of the driving forces of industrial and city development. The aim of innovation is to ensure a better use of assets and resources while enhancing urban competitiveness and capital. For example, technical innovations can contribute to the upgrading of industries and their competitiveness.

5.4 Partnerships

The partnership-based approach can provide a competitive advantage and an opportunity to access a broader range of resources and expertise. Cities as core actors in sustainable urban development can benefit from different kinds of partnerships. National and international development partners could help cities cooperate with each other or with higher-level governments and organizations. There are partnerships within industry, academia and civil society, in which every actor could provide expertise in their disparate but related areas. Cities cooperate with partners to communicate and exchange information, to build capacities, to expand resources and to implement improvements. Agencies like UNIDO can provide opportunities for cities to locate appropriate partners in different developing sectors.

5.5 Investment and Finance

Increasing the scale and efficiency of urban development financing should be a priority in urban development strategies. Urban infrastructure and services are key areas of investment and finance because they can unlock huge potential for future growth. There is still a huge gap between the cities' demands and available supply. New partnerships in investment and finance should therefore be introduced and new effective cooperation mechanisms should be taken up to support sustainable urban financing.

5.6 Social Inclusion

Social inclusion implies that everyone can share equally in the achievements of urban development. It is also an important goal of sustainable development. More efforts should be made to eliminate poverty and gender inequality and to involve the younger generation in the process of development, for instance, utilizing ICTs to close the digital divide and to ensure equal opportunities for all.

The "One-Belt-One-Road Inclusive and Sustainable City Exhibition and Dialogue" along with the "New Urban Agenda" from the HABITAT III conference will prove instrumental in shaping and guiding sustainable urban development and are major milestones on the way towards the achievement of the SDGs. The outcomes will ensure support for cities and local stakeholders in developing and implementing sustainable city initiatives, thereby directly contributing directly to the SDGs. As a way forward, possible avenues for future action and cooperation are:

- As a specialized agency, UNIDO has been crucially involved with projects related to green technology, capacity-building and knowledge transfer. With immense technical expertise, agencies like UNIDO should start engaging directly with the municipalities and should assist cities at the policy level, as well as support cities in locating suitable partners.

- The SDGs have provided the cities with an opportunity to strengthen the activities and initiatives they have already been working on. As international and national policies will be supporting city-level development, the local stakeholders (i.e. mayors, civil society, local citizens, as well as local businesses) should already be engaging in the discussions.

- Bringing urban actors to a platform and discussing the latest innovations and projects in the field of sustainable urban development, both locally and internationally, will help cities implement their policies and development goals. As a follow up to the HABITAT III conference, regular urban discussions will play an influential role in speeding up this process.

- With the SDGs already having a positive impact on different national and local urban development initiatives, positive results are already being felt. Cities should align their national as well as local urban development goals with the SDGs and the "New Urban Agenda".

The relationship and dynamics between industries and cities are very strong and persistent. As discussed, there are numerous examples available to illustrate the way in which industries have transformed cities and contributed to the urban as well as national economy. Industries will continue to have a sizeable footprint in sustainable urban development in the coming decade as SDG 9 continues to provide co-benefits to all 17 SDGs.

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