KOREA EXCHANGE VISIT BOOKLET
National Urban Policy Programme; Smart Cities Korea Visit

17 - 21 June 2019
“Towards smart urbanisation and sustainable urban development”
## Table of Contents

Practical information ................................................................................................................................4

Agenda ......................................................................................................................................................7

Introduction ...............................................................................................................................................9

Welcome Messages .................................................................................................................................12

Integrating smart cities in National Urban Policy .................................................................................15

Participants ..............................................................................................................................................16

Speakers .................................................................................................................................................. 21

Think pieces .............................................................................................................................................23

Message from the Niger State delegation ............................................................................................42

Acknowledgements ................................................................................................................................46
I. INTRODUCTION

The second Korea exchange visit of the National Urban Policy Programme and Smart cities will be held in Seoul, Korea, from Monday, 17th June to Friday, 21 June 2019.

Address of the meeting office: Seongnam-si, Gyeonggi-do, 13637, Republic of Korea

Place: 5F Office 513, Global Cooperation Center Meeting Room

Street address: 3, seongnam-daero 54beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-so, 13637, Republic of Korea

Before and during the visit, organizers can be contacted at kibong@un.org and mwamati@un.org

II. HOW TO ACCESS THE MEETING VENUE?

Almost all participants will arrive at the Incheon International Airport which is located in the Incheon, 60 kilometres from Seoul’s central business district and 25 kilometres from the LH Office.

A bus limousine will be waiting for you during the whole period of the programme (from your arrival to your departure).

III. HOW TO PARTICIPATE AND REGISTER FOR THE EXCHANGE VISIT?

Member States: All participants from the three representative member states have been invited and shall register during the first day of visit.

IV. HOW TO GET THE BADGE AND ACCESS THE PREMISES?

Passes provided by hosts (LH) where necessary and or otherwise advised.

V. HOURS OF THE EXCHANGE VISIT (INCLUDING DINNER):

Sunday, 16 June - ARRIVALS

Monday, 17 June – from 10:00 – 20:00

Tuesday, 18 June – from 09:00 – 20:00

Wednesday, 19 June – from 10:00 – 19:00

Thursday, 20 June – from 10:00 – 19:00

Friday, 21 June – from 10:00 – 19:00

Saturday, 22 April – DEPARTURE

VI. LANGUAGES AND INTERPRETATION

The Official language of Korea is Korean

VII. WIRELESS INTERNET

Wireless Internet access will be available in the meeting space/ compound and meeting rooms.

VIII. ADDITIONAL PRACTICAL INFORMATION

PUBLIC TRANSPORTATION

Cabs / Taxi Tel: +821644 2255, website: www.intltaxi.co.kr

- Subway
  Seoul has nine subway lines - from 1 to 9 - which are connected to the Bundang Line, Shinkansen Line, Sun Line, Airport Railway, Gyeyang Bundang Line, and Gyeyang Line, forming a comprehensive underground transit system for the Seoul metropolitan area. Anyone can easily access the system because the routes are demarcated by color and the route and station numbers are all labeled. Fare starts from W1,250. (Disposable Subway Card) Available from the vending machine at each subway station. The first time you get one, you need to pay a deposit of W5,000, and then charge it. But, you can get the deposit back at the card return machines when you arrive at your destination.

- Taxi
  There are standard, deluxe, and jumbo taxis (in Seoul, as well as taxis specifically for foreign tourists).

- Taxi for foreign visitors
  For a taxi driver who speaks English, Chinese, or Japanese, you can easily make a reservation by phone or on the website. Please note that a reservation must be made 24 hours prior to pickup time. Prices vary depending on course 1644-2255 www.intltaxi.co.kr

- Bus
  Seoul has four types of buses, each color-coded (based on fares paid in cash)

- Blue bus
  For long distances within Seoul. Basic fare: W1,300

- Yellow bus
  Circulates in downtown Seoul. Basic fare: W1,200

- Green bus
  For transportation between blue bus stops and subway station stops, these buses run parallel to the subways in some areas. Basic fare: W2,200

- Red bus
  Inter-city express transit. Basic fare: W2,400

Search bus stops close to your current location
Use the Near You feature in the iTour Seoul app.

Read p.14 to learn how to use the iTour Seoul app.
Towards smart urbanisation and sustainable urban development

National Urban Policy Programme; Smart Cities Korea Visit

Located in the heart of Seoul, THE PLAZA Seoul, will make every day a perfect day, with unique and stylish interiors and highly personalized service. LH will be assisting for the accommodation booking.

Website: https://www.hoteltheplaza.com/en/
Address: THE PLAZA 119 Sogong-ro, Jung-gu, Seoul, Korea 04525
Tel: + 82.2.771.2200
Fax: + 82.2.755.8897

All participants attending are required to have adequate medical insurance prior to arrival. Any medical costs incurred during the stay in Korea shall be borne by the meeting participants directly. It is therefore strongly recommended that the participants arrange for their own health insurance.

There are Medical Clinic/ emergency (119) and On-site medical assistance available within the vicinity
Tel: +82 1588 5644
Emergency line: +82 119

Korea Standard Time (UTC+09:00)

- The rapidly increasing temperatures of the previous months start to shallow out in June. The weather is hot and humid, so bring light, sweat-absorbing clothes. Be prepared for the monsoon season from mid-June through early July. The average monthly temperature in Seoul increases to 25–27°C during summer season. Daytime averages hit 26°C and nights only cool to 16°C.

- Precipitation dramatically increases in June as Seoul enters the monsoon season. Rainfall totals in the beginning of June only average 90mm but hit 230mm by the end of the month. The total monthly average comes out to 133mm. The change in the chances of precipitation is equally drastic, at 20% in the beginning of June and 40% at the end of the month. Appropriate wet weather clothing is advised as precautionary step.

- The official currency is the Won. The exchange is available at official foreign exchange booths, banks, airports, department stores, and hotels, based on the current exchange rate. Exchange fees vary by exchange locations.

The current exchange rates are:
1 US Dollar = 1,194.12 KRW
1 EURO = 1,332.97 KRW

Please, note that this is subject to change. The rates quoted are those in force as of the drafting of this information.
When you need to exchange your foreign currency into Korean won, visit a bank or authorized exchange service center. Banks are generally open 09:00-16:00 on weekdays, with the exceptions of Standard Chartered Bank, operating 09:30-16:30, and EVERRICH Bank, with hours of 09:00-16:30.

CREDIT CARD
Most of the businesses in Korea widely use and accept payment by credit cards, including at major hotels, department stores, and general shops. Visa, MasterCard, American Express and other credit cards can be used; however, check the service availability before making purchases as some stores may not provide this service.

ATMS
ATMs are available country wide with 24-hour access. Most accepted international VISA cards. All major international cards are accepted.

TRAVELLERS' CHEQUES
Traveler's checks can be exchanged for cash at banks or exchange booths. A number of stores still accept the checks instead cash. Nonetheless, the forms of credit cards and debit cards have become a more preferred means of payment by travelers. Thus, trading checks is hardly observed nowadays as there is seemingly a decreasing number of stores that offer this service.

TIPPING
Korea is basically a no-tip culture.

IX. EMERGENCY NUMBERS
Police: +82 112
Emergency Medical Services: +82 119
Free phone interpretation service: +82 1588-5644
Inquiries about Seoul: +82 2 120

X. VISA

It is the responsibility of the participants to obtain the visa for Korea. The information provided herein acts only as guidance. A valid passport, not expiring for at least six months from the date of arrival is required for entry into Korea. A valid entry visa is also required for most countries and may be obtained in advance from the Korean Embassy/ High Commission in your country of residence or in a neighboring country.

Foreign nationals entering Korea are required to have a valid passport and a Korean visa issued by the Korean embassy or consular offices in their country. However, citizens from many countries are now permitted visa-free entry for a limited period under certain conditions. In order to check whether you are allowed to enter Korea without visa issuance and for other requirements, please contact a Korean embassy or consular office in your country or visit the following websites to confirm.

Please find more information regarding visas at www.mofa.go.kr
Agenda

DAY ONE
SUNDAY, JUNE 16, 2019
Venue: Seoul Metropolitan Area, Korea

PARTICIPANTS ARRIVAL TO KOREA

DAY TWO
MONDAY, JUNE 17, 2019
Venue: Global Cooperation Centre etc.

KOREA URBAN POLICIES & DEVELOPMENT

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Speaker/Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 – 10:30</td>
<td>Opening Ceremony</td>
<td>Director of Urban Policy, MOLIT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Director of International Business Office, LH</td>
</tr>
<tr>
<td>10:30 – 12:30</td>
<td>[Lecture1] Urban policies of Korea</td>
<td>Deputy Director of Urban Policy, MOLIT</td>
</tr>
<tr>
<td>12:30 – 14:00</td>
<td>Welcoming Luncheon</td>
<td></td>
</tr>
<tr>
<td>14:00 – 16:00</td>
<td>[Lecture 2] Urban Development in Korea and Role of LH</td>
<td>Director of Global Cooperation Centre, LH</td>
</tr>
<tr>
<td>16:00 – 18:00</td>
<td>[Site visit 1] Pangyo New Town</td>
<td>Urban expert, Global Cooperation Centre, LH</td>
</tr>
<tr>
<td>19:00 – 20:00</td>
<td>Dinner</td>
<td></td>
</tr>
</tbody>
</table>

DAY THREE
TUESDAY, JUNE 18, 2019
Venue: Korea Territorial Development Museum, etc

URBANIZATION WITH DIGITAL TECHNOLOGIES

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Speaker/Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00 – 10:00</td>
<td>[Site visit 2] Korea Territorial Development Museum</td>
<td></td>
</tr>
<tr>
<td>10:00 – 12:00</td>
<td>[Lecture 3] Smart City Strategy in Korea</td>
<td>Deputy Director of Urban Economy, MOLIT</td>
</tr>
<tr>
<td>12:00 – 14:00</td>
<td>Luncheon</td>
<td></td>
</tr>
<tr>
<td>14:00 – 15:30</td>
<td>[Site visit 3] TOPIS</td>
<td>Seoul Transportation Information Centre</td>
</tr>
<tr>
<td>15:30 – 16:30</td>
<td>[Site visit 4] Seoul Urban Architecture Museum</td>
<td>Museum</td>
</tr>
<tr>
<td>17:00 – 18:00</td>
<td>[Site visit 5] Cheong Gye Cheon Museum</td>
<td>Museum</td>
</tr>
<tr>
<td>19:00 – 20:00</td>
<td>Dinner</td>
<td></td>
</tr>
</tbody>
</table>
**DAY FOUR**  
**WEDNESDAY, JUNE 19, 2019**  
Venue: Korea Territorial Development Museum, etc.

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00 – 10:30</td>
<td>Lecture 4] Share Mobility Planning for New Town Development</td>
<td>General manager, LH</td>
</tr>
<tr>
<td>10:30 – 12:00</td>
<td>Lecture 5] Living Lab</td>
<td>Urban expert</td>
</tr>
<tr>
<td>12:00 – 13:00</td>
<td>Luncheon</td>
<td></td>
</tr>
<tr>
<td>13:00 – 17:00</td>
<td>[Site visit 6] SK Telecom</td>
<td>SK Telecom</td>
</tr>
<tr>
<td>17:00 – 19:00</td>
<td>[Site visit 7] Han River, Yeouido</td>
<td></td>
</tr>
<tr>
<td>19:00 – 20:00</td>
<td>Dinner</td>
<td></td>
</tr>
</tbody>
</table>

**DAY FIVE**  
**THURSDAY, JUNE 20, 2019**  
Venue: Korea Territorial Development Museum, etc.

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 – 12:00</td>
<td>Workshop 1] NUP Report Presentation</td>
<td>Participants from three countries</td>
</tr>
<tr>
<td>12:00 – 13:00</td>
<td>Luncheon</td>
<td></td>
</tr>
<tr>
<td>13:00 – 15:00</td>
<td>[Site visit 8] The Smartium &amp; Brain storming</td>
<td>Smart house and city exhibition</td>
</tr>
<tr>
<td>16:00 – 18:00</td>
<td>[Site visit 9] Urban Development Site</td>
<td>Seongnam</td>
</tr>
<tr>
<td>19:00 – 20:00</td>
<td>Dinner</td>
<td></td>
</tr>
</tbody>
</table>

**DAY SIX**  
**FRIDAY, JUNE 21, 2019**  
Venue: Global Cooperation Centre etc.

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 – 11:00</td>
<td>Lecture 6] LH &amp; Myanmar’s Industrial Estate</td>
<td>Urban expert, LH</td>
</tr>
<tr>
<td>11:00 – 12:00</td>
<td>Lecture 7] LH &amp; Kuwait Smart City</td>
<td>Urban expert, LH</td>
</tr>
<tr>
<td>12:00 – 12:30</td>
<td>Closing ceremony</td>
<td></td>
</tr>
<tr>
<td>12:30 – 14:00</td>
<td>Farewell luncheon</td>
<td>Downtown Seoul</td>
</tr>
<tr>
<td>14:00 – 18:00</td>
<td>Cultural experience</td>
<td></td>
</tr>
<tr>
<td>19:00 – 20:00</td>
<td>Dinner</td>
<td></td>
</tr>
</tbody>
</table>

**DAY SEVEN**  
**SATURDAY, JUNE 22, 2019**

**DEPARTURE**
BACKGROUND TO THE KOREA EXCHANGE VISIT

BACKGROUND
UN Habitat has been working to support the development and implementation of NUPs globally for the past six years. Over this period, and in consultation with partners, UN Habitat has consolidated normative knowledge and developed tools that support countries with undertaking the NUPs process.

With the adoption of global frameworks such as Agenda 2030, the New Urban Agenda, the Paris Agreement and the Sendai Framework, NUPs have been identified as a key tool to support the implementation and monitoring of the global urban agenda.

This project, which is in its third year, seeks to contribute to a larger response to urbanization and its emerging challenges (demographic, environmental, economic, spatial and social trends) through National Urban Policy and Smart City strategies in three pilot countries while also consolidating and sharing knowledge on urban policy at the global level.

An effective response to the increasing demand for support to develop National Urban Policies requires a concerted effort to develop the necessary tools and knowledge on NUP, enhance capacity including in the areas of smart and green urban development, provide targeted technical and advisory services to member states, and reinforce and establish partnerships while improving advocacy for NUP.

Building on previous project experiences and responding to the growing demand and needs from countries and partners, UN-Habitat, through the National Urban Policy Programme, will continue its support to the three pilot countries, equipping them with relevant tools for the development and implementation of integrated and inclusive National Urban Policy and Smart City Strategies.

There are three main accomplishments expected from the pilot phase of the National Urban Policy Programme:

- Enhanced capacity of sub-national and national governments in the three pilot countries to develop, implement, and monitor and evaluate national urban policy (NUP and SUP) and develop smart city strategies.
- Increased centralization of knowledge and tools on the development, implementation, and monitoring and evaluation of urban policy (NUP and SUP) and smart city strategies.
- Augmented opportunity for knowledge sharing and peer learning activities on urban policy (NUP and SUP) and smart city strategies

Embedded at the core of the New Urban Agenda, National Urban Policies (NUPs) have increasingly been identified as important tools for governments to implement and monitor the progress of global agendas. Well-designed national policy frameworks can help countries, regions and cities achieve economic growth, environmental sustainability and social inclusion. Cities are facing the challenge of rapid urbanization, and governments are devising new ways to combat them, and thus the embedment of smart-city approaches as a key highlight of the New Urban Agenda.

As the number of attempts to answer the challenges of urbanization and to capitalize on its opportunities with digital technologies increases, the concept of the smart city has been popularized around the world. The smart city approach aims to achieve sustainable urban planning, improved connectivity through public and alternative transport, social inclusiveness, institutional integration, energy efficient neighbourhood and buildings, increased access to efficient water and sanitation, social services, a sustainable and resilient environment and integrated agglomerations.

To guide the smart urbanization with digital technologies taking place, local and national governments are increasingly developing smart city strategies. As efforts to develop smart cities are not able to be validated if they are isolated from higher level urban initiatives or statutory requirements, smart city strategies should be embedded in the overall urban vision and especially, incorporated in National Urban Policy. A National Urban Policy (NUP) is an important tool available for governments that seek to manage and direct rapid urbanization, and to turn urbanization to positive effect while accommodating its inevitable stress.
UN-Habitat indicates that NUP is a coherent set of decisions derived through a deliberate government-led process of coordinating and rallying various actors for a common vision and goal that will promote more transformative, productive, inclusive and resilient urban development for the long term.

This 2019 Korea exchange visit for NUP programme will focus on the support to three pilot countries – Iran, Myanmar, Niger State (Nigeria) – in developing smart city strategies that are ingrained with their NUPs. A smart city strategy should enable target cities in three countries to adopt smart city approaches that make use of opportunities from sustainable urban planning, digitalization, clean energy and technologies. The visit would also be an opportunity to exchange experiences and notes on the progress undertaken in each country and learn from inspiring practices. Therefore, it aims to overcome the capacity gap that states can be faced with in the NUP process by providing tools and technical assistance to governments and stakeholders.

Specifically, this Exchange Visit to Korea will have three main objectives:

1) **Augment the capacity of policy makers to** develop smart city strategies through the provision of capacity development sessions and through site visits within Korea to relevant locations.

2) **Share knowledge and encourage peer learning between** the project countries and the Government of South Korea, as well as between the project countries themselves.

3) **Prepare action plan** for fast-tracking the implementation of the projects in each respective country.

The Progress Made by the 3 Pilot Countries:

Globally, there has been a number of accomplishments, notably the first annual exchange visit to South Korea took place between December 4 and 8 2017. The visit was jointly organized by UN-Habitat and the Korea Land and Housing Corporation. The Visit brought together the leaders of the projects and governmental representatives from each selected country.

As of 2017/18 reporting, at the country level, a list of accomplishments was recorded in the three pilot countries as briefly highlighted below;

**Iran** has so far participated in the annual Exchange visit in South Korea in 2017, prepared a draft action plan during the same workshop in the exchange visit, launched the discussion paper and diagnostic report of NUP, held two in-country workshops and one workshop in partnership with UN-Habitat headquarter representatives.

The following has been achieved;

- The action plan initiated in the workshop is still being finalized, it will need to be reviewed and adjusted by UN-Habitat according to the new budget and calendar, and finally be validated in-country.
- Formation of one in-country NUP Advisory Board
- NUP process launch meeting:
- Data collection to support elaboration of Smart City strategy
- Completion of one NUP Discussion Report:
- Completion of one Diagnosis paper
- NUP stakeholders’ workshops
- Formulation of National Urban Policy
- Formulation of Smart City strategy

**Myanmar** on the other hand participated in the annual Exchange visit in South Korea in 2017, reviewed, discussed and completed the Rapid Diagnostic Report into a final Diagnostic Report, and finalized the action plan initiated during the workshop in the exchange visit.

The following has been done as of 2018;

- Action plan reviewed and adjusted by UN-Habitat according to the new budget and calendar, and finally be validated in-country.
- Formation of one in-country NUP Advisory Board (National Urban Policy Committee)
- Sub-National Consultation Workshop with States and Regional, June 2018
- National Consultation Workshop, December 2018
• Brief Consultation with Development Partners, June 2018
• Concept Note development on 5 priority areas
• NUP process launch meeting

On-going initiatives and Next steps (2019);
• Updated Diagnostic Reports on each (5+3) priority areas
• Data collection to support elaboration of Smart City strategy; Smart City Workshop
• Consultation with NUC
• Formulation of National Urban Policy
• Formulation of Smart City strategy
• Consultation workshops with Development Partners and Ministries

These are the next steps in Nigeria (2019);
• Formation of one in-country NUP Advisory Board
• Data collection to support elaboration of Smart City strategy
• Completion of one NUP Diagnosis Clinic
• Formulation of National Urban Policy (draft document produced)
• Formulation of Smart City strategy (draft document produced)

The Niger State, Nigeria, in addition to participating in the South Korea visit, they identified the possible technical committee members and finalized the action plan initiated during the workshop in the exchange visit.

In 2018, they achieved;
• Reviewed action plan with UN-Habitat to the new budget and calendar.

• Developed a comprehensive action plan for other on-going urban development projects involving UN-Habitat (integrated territorial development, Urban-rural linkages and new towns)
• Formation of a technical committee
• NUP Feasibility Policy Note (draft document produced)
• Diagnosis paper (draft document produced)
• Mapped and identify key Stakeholders for State Urban Policy
It is a pleasure to welcome, and thank all participants who have travelled here from Myanmar, Iran and Nigeria for their time and commitment in participating in this exchange visit in Seoul, Korea. We intend to learn and share our experiences and ideas on NUP and smart city strategies. On behalf of the entire UN-Habitat team, I would like to express our profound appreciation and gratitude for the close collaboration and continued generous support from the Korean government, through the Korea Land & Housing Corporation (LH), and Ministry of Land, Infrastructure and Transport (MOLIT).

The New Urban Agenda, United Nations’ 20-year sustainable urban development agenda adopted by member states in Quito, Ecuador in October 2016, states that by 2050, the world’s urban population is expected to nearly double, making urbanization one of the twenty-first century’s most transformative trends. In this context, the role of information and communication technologies (ICTs), as enablers of sustainable development is increasingly significant. Cities need to get smarter, with technological solutions deployed to address a wide range of common urban challenges. Smart sustainable cities benefit from improved energy efficiency, reduced environmental pollution and increased social inclusion, while offering businesses a better return on investment and people a happier and healthier living environment.

Indeed, the aim is not technological innovation for its own sake. Technology must deliver specific social benefits for citizens, and economic benefits for businesses, local authorities and national governments. Special efforts should be made to encourage ICT innovations to support environmental sustainability, in keeping with international agreements such as the Paris Agreement, the Sustainable Development Goals and the New Urban Agenda.

In essence, becoming a “smarter city” is a journey, longer for some than others. Smart sustainable city transitions can be complex and challenging, requiring a holistic approach encompassing long-term urban planning, appropriate financing, partnerships and engagement. It thus gives me, and all of us, great pleasure to host the second exchange visit that will take stock of progress made since the last visit in 2017, and explore new developments on NUP and smart city strategies. We expect it to provide peer-to-peer learning opportunities between the three pilot countries about a wide range of urban policies tackling numerous social, environmental and spatial issues, progress made to date and challenges faced, in relevant spheres as well as best practices and valuable lessons learned. Last but not least, I hope all of you will really enjoy your stay in Seoul and explore its nature and culture, and all the elements that make this city so attractive and liveable.

Dr. Shipra Narang Suri
Coordinator, Urban Planning and Design Branch
United Nations Human Settlements Programme
(UN-Habitat)
It is my great pleasure and honor to welcome all of you to Korea for learning from the Korean experience with National Urban Policy and Smart City Strategy here in Seoul.

As the number of attempts to answer the challenges of urbanization and to capitalize its opportunities with digital technologies increases, the concept of smart city has gained momentum, and has been widely used across the world. The New urban Agenda, Para 66, also proposes adopting a smart-city approach that makes use of opportunities from digitalization, clean energy and technologies, as well as innovative transport technologies, thus providing options for inhabitants to make more environmentally friendly choices and boost sustainable economic growth and enabling cities to improve their service delivery. Therefore, I would like to say that it is very timely for the 2019 exchange visit for National Urban Policy to focus on the support to Iran, Myanmar and Niger State in developing smart city strategies. This is also a great time to review and share experiences on the progress made since the last visit in 2017.

The Ministry of Land Infrastructure and Transport (MOLIT) also identifies smart cities as both a new urban paradigm and a future economic growth engine, and thus, established the National Masterplan for Smart City in 2018. According to this plan, MOLIT with the collaboration with local government has embarked on building two new pilot projects-Sejong and Busan EDC- and retrofitting several existing urban areas with smart urban technologies.

In this regard, I would like to encourage all participants from each country to learn and share knowledge on smart cites, as an enabler for developing your own Smart City Strategies in your respective countries.

Last, but not least, I hope all participants will feel comfortable and enjoy your stay in Korea. I am convinced that this second exchange visit will be very fruitful.

KWON, Hyuck Jin
Director-General, Urban Policy Bureau
Ministry of Land, Infrastructure and Transport (MOLIT)
Republic of Korea
On Behalf of Korea Land & Housing Corporation Republic of Korea (LH), it is my great pleasure and honor to welcome all of you to the “National Urban Policy Programme (NUPP)” visit in Seoul, Korea.

As one of the few countries where economic growth and urbanization have gone hand in hand, South Korea has been able to efficiently implement urban development policies in gradual stages.

Urban development in Korea has been led by the public sector, which has been dedicated to urban and housing development. In response to rising issues in cities, the country has adopted large-scale development that carry a number of advantages: the short period of time from planning to moving in, improved self-sufficiency, supply of affordable housing and social mix, transit-oriented development, sustainable business structures, etc.

Since the early 2000s, having created Smart Cities by applying ICT to newly developed urban areas, South Korea has accumulated extensive experience and expertise in this development. We now wish to share our experience and solutions with other nations around the world.

The Smart City that LH is dedicated to creating for the future will be designed for higher quality of life and happiness of the common people, resolving urban issues of low economic growth, low birth rates, demographic aging, youth unemployment, and transportation and security problems as well as responding to global warming and climate change concerns.

I hope that you find “this program” helpful to set a proper direction of smart city development as it will provide opportunities to learn Korea’s history of urban development, relevant policies, representative projects and solutions in new town and smart city development in Korea.

Jae Hyuk LEE
Vice President
Korea Land & Housing Corporation
Republic of Korea
In an increasingly urban world, smart city technologies and systems have rapidly evolved to create a global movement which applies ICT and innovation to enable cities to become more resilient, liveable and inclusive. Smart cities emerged as the global financial crisis was changing the economic, political and social landscape of cities. Becoming smart was also seen as an opportunity to mitigate against the negative consequences of rapid urban population growth and urbanisation through citizen engagement or private-public partnership platforms. The notion of the smart city originates from various urban definitions, which have evolved consecutively from “information city” and “digital city”, to “ubiquitous city (U-City)”, “intelligence city” and “knowledge-based city”. The smart city aims to: 1) improve the quality of life of citizens; 2) enhance the city's effectiveness; and 3) create new values (NIA, 2013; KISA, 2015). Whilst no standard definition exists for the concept, a shared global understanding underpins approaches pursued by supranational bodies, national and local governments and the private sector.¹

A National Urban Policy (NUP) is an important tool available for governments that seek to manage and direct rapid urbanization, and to turn urbanization to positive effect while accommodating its inevitable stress. UN-Habitat indicates that NUP is a coherent set of decisions derived through a deliberate government-led process of coordinating and rallying various actors for a common vision and goal that will promote more transformative, productive, inclusive and resilient urban development for the long term.

From the NUP perspective, the effective implementation of smart city strategies at the national, regional, sub-regional and city scales requires a good curated NUP-smart city approaches that allow it's embedment on the national agenda. There is common awareness of the magnitude and pace of urbanization across the world, and of the profound impacts this is having on infrastructure and livelihoods of city dwellers. Consequently, cities and resulting metropolitan areas now have a clearer indication of what the global imperatives are for the urbanisation agenda. Similarly, much work has been done on preparing smart tools to support those responsible for delivering sustainable urbanization at all levels in order to empower cities towards collective urban innovation across the globe. Building on this understanding, the Korea government, through the three pilot countries, has committed to promoting the sharing of smart city knowledge and best practices through exchange visit to Korea for city leaders thus creating capacity to realize the benefits of smart approaches to urbanisation in their respective countries. The integration of smart cities technology in NUPs for countries has the capacity to improve supra-national, national, regional and city productivity, sustainability and liveability.

In guiding the digital transformation taking place, local and national governments are increasingly developing smart city strategies. These strategies can have a wide variety of goals, including economic, social and environmental and include both national and local approaches. Smart cities involve the development of digital policies and strategies that are people-centred and tap into technological innovations to build the capacities of stakeholders (smart grids, smart government, smart citizenship, etc.). Smart cities use technology to improve the quality of life of urban communities and build inclusive urban societies.

Some local governments have produced smart city strategies (SCS) isolated from higher level urban initiatives or statutory requirements. In the early stages of developing a smart city, political leaders have sometimes organized a new department dedicated only to smart city initiatives, and then attempted to establish an isolated smart city strategy. This approach has some advantages: fast track on establishing strategies, relatively free from administrative bindings and so on. From previous studies, they recommended that SCS should be embedded in the overall urban vision and especially, incorporated into National Urban Policy. A National Urban Policy, as earlier described, is an important tool available for governments that seek to manage and direct rapid urbanization, and to turn urbanization to positive effect while accommodating its inevitable stress.

As efforts to develop smart cities are not able to exist in a vacuum, the strategy for developing smart cities should be intertwined in core urban initiatives. In most cities where smart city policies have been implemented successfully, the frameworks used to implement and develop technological initiatives equating to a smart city, are shared with those of NUP. Indeed, for governments which seek to develop smart cities in transformative, productive, inclusive and resilient ways, it is necessary to mainstream SCS in NUP.

Professor Mustapha is an Architect/Planner and Project Manager, Niger State Urban Support Programme, in charge of the implementation of five development projects with technical assistance of UN-Habitat. The projects include the preparation of Niger State Urban Policy (SUP); developing a Smart City in Suleja, with three components—building a compact, connected and socially inclusive city; establishing an Assembly Plant for Renewable Energy Systems and components such as solar panels, solar refrigerators, fans; and establishing an Institute of Technology in partnership with the Korean Electric Power Corporation (KEPCO); preparing Integrated Development Plans for the cities of Minna and Suleja; and building the capacity of the state institutions in charge of the development and management of the cities. Among the expected outcomes of the projects are to so rearrange the management, governance and financing of the cities that they can provide themselves with modern infrastructure facilities and services on a self-sustaining basis.

Engineer Mohammed Sani Alhassan [(B. Eng. Civil) A. B. U. Zaria] FNSE, FNES, OFr, retired from the Federal Government Public Service of Nigeria in 2011 as the Executive Secretary of the Federal Capital Development Authority (FCDA), a parastatal charged with the planning, design and development of the new Capital City Abuja and the Federal Capital Territory of the country. His career at FCDA spanned from 1981 – 2011 after a brief stint with the Ajoda New Town Development Corporation on national assignment as a member of the National Youth Service Corp and the Niger State government as a Pupil Engineer during which he attended various national and international courses, seminars and workshops prominent among which is the Advanced Management Programme, course 169, at the Harvard Business School, Boston. He resides in Abuja and actively involved in ad-hoc activities with the Niger State Government and the Suleja Emirate Traditional Council.

Dr. Abdul Husaini, the Permanent Secretary, Ministry of Lands and Housing, Niger State, was the pioneer General Manager of Niger State Geographic Information Systems (NIGIS). Before his appointment as the GM of NIGIS, in 2012, he was the Zonal Town Planning Officer, Suleja, Niger State. He holds membership of both Nigerian Institute of Town Planners (NITP) and Nigerian Environmental Society (NES), among many others. He was instrumental for:

i) The acknowledgment of Minna as one of the Regional Centers of Expertise on Education for sustainable Development through RCE Minna (www.rceminna.com.ng)

ii) The inclusion of Minna as one of the 20 foundation member of World Council on City Data (WCCD) (www.dataforcities.org)

iii) The Registration of Minna as the first City in Nigeria with ISO 37120 Certification by World Council on City Data (WCCD) in 2015.

Dr. Husaini is a recipient of the Presidential National Productivity Order of Merit (NPOM) Award, 2018.
IRAN

ZOHEREH DAVOUDPOUR
MEMBER OF BOARD OF DIRECTORS, IRAN’S NEW TOWNS DEVELOPMENT COMPANY, MINISTRY OF ROADS & URBAN DEVELOPMENT, IRAN.

Zohreh Davoudpour is a member of board of directors of the Iran’s New Towns Development Company, Ministry of Roads & Urban Development. She is also an associate professor of urban planning and design. She obtained her Ph.D. in 2001 in Urban Planning from the Azad University of Science and Research, and holds B.S. and M.S. degrees in Economy and Urban Planning from the University of Tehran, respectively.

Over a 30-year career as an urban planner, she has been working in the Ministry of Roads & Urban Development on spatial planning of metropolitan areas (focus on Tehran Metropolitan area and its squatter settlements), modern technologies in urban planning and architecture (electronic city, smart city, etc.), and urban transport planning especially in Iranian new towns. She is a member of Iran Construction Engineering Organization (IRCEO), Iranian Society of Urban Planner and Iran’s Architecture Prideworthies Foundation.

PEDRAM MEHRAIE
URBAN PLANNER AT URBAN REGENERATION COMPANY OF IRAN.

Pedram Mehraie is an urban planner at Urban Regeneration Company of Iran (affiliated to Iran’s Ministry of Roads and Urban Development) since 2017 as the research division head expert. He received his masters degree in urban planning from the University of Tehran, Tehran, Iran in 2015. His research interests in urban planning lie in the areas of scenario planning, strategic planning, and I also have a particular interest in quality of urban life and urban regeneration.

GHOLAMREZA KAZEMIAN
DIRECTOR GENERAL OF URBAN PLANNING & DEVELOPMENT PLANS IN MINISTRY OF ROADS & URBAN DEVELOPMENT, IRAN.

Gholamreza Kazemian is an Associate Professor in urban management & planning at Allameh Tabataba’i university. In the research and educational field, he’s specialised on urban management & governance; urban & regional planning; urban policy making; metropolitan planning & management, management of development. On his administrative records, he’s held several offices including; Deputy of planning institution for Tehran. 2008 – 2011. Professionally, he has been an expert and chief of planning teams at Architecture & urban planning Consultant Engineers in national, regional and local projects. 1990- 2017. He’s authored many publications including;

1) Kazemian Gholamreza, Farajirad kheder, local and regional development: an institutional perspective (in Persian), ISBA publication, 2012
SARA HABIBI
URBAN AND REGIONAL PLANNER, UN-HABITAT, TEHRAN, IRAN

Sara Habibi is urban and regional planner in UN-Habitat, based in Tehran, Iran. The focus of her work is on urban planning related issues, among which National Urban Policy and International Guidelines of Urban and Territorial Planning are most important.

She joined UN-Habitat in June 2015 and has devoted her energy on advocacy and capacity development activities, providing substantive supports on urban planning issues, conducting research, preparing reports, providing technical advice, collaborating with partners and stockholders, supporting workshops and conferences, and assisting in monitoring and evaluation of ongoing activities under UNdAF during the last three years. She has closely worked with relevant stockholders such as international organizations, UN agencies, governmental bodies, local governments, private sector, institutions, universities, and NGOs.

Before joining UN-Habitat, she was working for international consulting engineering groups and research centers. She holds Ph.D. in Urban Planning from University of Tehran, Iran. She has been also lecturing on urban planning at universities. Her articles in journals and conferences show her deep interest in substantive subjects such housing, urban form, compact form, urban sprawl, sustainable development, quality of life and spatial planning.

MYANMAR

EAIN NANN MAY
ASSISTANT DIRECTOR AT THE DEPARTMENT OF URBAN AND HOUSING DEVELOPMENT OF MYANMAR’S MINISTRY OF CONSTRUCTION

Since 2012 Eain Nann May, an architect has been employed as Assistant Director at the Department of Urban and Housing Development of Myanmar’s Ministry of Construction, where she supports the urban and regional development division with her urban development planning expertise. Moreover, she is involved in urban and housing development planning schemes, town development planning, and heritage conservation planning as well as border town development planning projects for a total of twenty-five towns in Myanmar.

Additionally, she contributes and collaborates in various joint initiatives with international organisations such as the JICA, where she has supported in developing master plans for three cities, namely in Pathein, Mawlamyaing and Mandalay. Simultaneously, she regularly participates in various international advanced trainings to deepen her knowledge. Eain Nann May holds a Bachelor’s degree in Architecture and is currently a candidate for a Master of Public Administration. Particularly, her interests are in the field of urban development planning sector, urban-rural linkages as well as land use changes and management.

MOE THIDA
DIRECTOR AT THE DEPARTMENT OF URBAN AND HOUSING DEVELOPMENT AT MINISTRY OF CONSTRUCTION

Moe Thida is a Director from Department of Urban and Housing Development, Ministry of Construction. She has worked there for 20 years and has experiences of foreign investment facilitation, public housing management and urban policy formulation. She achieved her master degree from Tokyo University in field of Public Policy in 2012 and studied in Massachusetts Institute of Technology as Humphrey Fellow in 2014-2015 focusing on housing and urban planning. Currently, she is actively taking part in housing policy formulation of Myanmar.
MOE MOE HLAING MYINT
DEPUTY DIRECTOR OF THE URBAN AND REGIONAL DEVELOPMENT DIVISION

Graduated as Civil Engineer in 1995, Moe Moe Hlaing Myint advanced her academic career with a Master Degree of Urban Environmental Management from the Asian Institute of Technology (AIT), Thailand in 2002.

She started her career as a staff officer at the Urban and Regional Development Division at the Department of Urban and Housing Development under the Ministry of Construction. In 2013, she took over the position of Assistant Director at the same division. Since 2016, Moe Moe Hlaing Myint holds the position of Deputy Director of the Urban and Regional Development Division.

Throughout her long-standing engagement for the Ministry of Construction, she has become an expert on the formulation of town development concept plans for selected secondary towns in Myanmar, as well as town extensions plans in different states and regions of the country. She was involved in Establishment of the Master Plan for Yangon-Hanthawaddy-Bago Corridor and Yangon South-Western Region Development project, which has been implemented in cooperation with the KOICA (Korea International Cooperation Agency). Currently, she is contributing in the Myitkyina-Wynemaw Urban Development Plan-2040 project, which is executed in collaboration with JICA (Japan International Cooperation Agency) and formulation of town development concept plans in Chin State. Since 2015, she is further involving in the project of Korea-Myanmar Industrial Complex (KMIC) development with Korea-Land and Housing Corporation. She is also one of the focal persons involved in the National Urban Policy Programme since 2017 and was also one of the participants to visit the first Korea Exchange Program in 2017.

Urban planning, rural-urban linkages as well as Smart City Strategies build the core of Moe Moe Hlaing Myint’s professional interest.

ANUARDHA PANIGRAHI
CONSULTANT, UN-HABITAT, MYANMAR COUNTRY OFFICE, UNDER MINISTRY OF CONSTRUCTION, GOVERNMENT OF MYANMAR

Anuradha is a young professional and an urban specialist whose career objective is to contribute solutions on local and global urban issues which are of critical importance for now and the future for a sustainable and inclusive environment. She describes herself as an urban researcher, who is inspired by the complex relationship between cities and different communities of urban environment and their importance in building sustainable cities.

She attained her bachelor’s degree in architecture from Mumbai and a Master’s degree in International Planning and Development from Cardiff University, UK. Her interest towards rapidly urbanizing cities has led her to gain practical insights on the subject. She has over 1 year of experience working with Mumbai Environmental Social Network (MESN), an organization which works on various urban issues in Mumbai. Work experience in MESN has supplemented her skills of communicating with the local communities and municipality. Moreover, she has experience working on slum mapping and up-gradation projects, developing a Real-time waste management project for Mumbai city and Open space development in an R&R colony, a project partnered with UN-Habitat. She was also selected to do an internship at UN-Habitat Myanmar where she primarily was engaged in the National Urban Policy Programme and urban projects in the Country.

Currently, she has been engaged as a consultant with UN-Habitat in supporting the Ministry of Construction, Government of Myanmar in the development of the National Urban Policy and Smart City Strategy for Myanmar.
REMY SIETCHIPING  
LEADER, RMPU, UN-HABITAT

Remy leads the Regional and Metropolitan Planning Unit (RMPU) within the Urban Planning and Design Branch of UN-Habitat at its Headquarters in Nairobi, Kenya. With over 20 years of experience, he is currently working on national urban policies within the spatial frameworks, the implementation of the International Guidelines on Urban and Territorial Planning (IG-UTP), regional and metropolitan planning, city-region planning, urban corridors development and clusters, green economy and smart green cities, systems of connected cities, urban-rural linkages.

KIBONG LEE  
SENIOR TECHNICAL ADVISER, UN-HABITAT

Kibong Lee is a Senior Technical Adviser in UN-Habitat, and one of his focuses is on National Urban Policy Programme. Before joining UN-Habitat, he worked for key departments of Ministry of Land, Infrastructure and Transport of Korea for more than 17 years. He was in charge of new towns development and public agencies relocation projects in Korea. As director of Overseas Infrastructure Development Division, he supported urban and infrastructure master plans in the developing countries. He also served other Korean government agencies including Office of the President as assistant secretary, and Office of Development and Settlement of Sejong City as director. He holds a master degree in public affairs from Indiana University in the US, and a bachelor degree from Seoul National University in Korea.

DENNIS MWAMATI  
URBAN AND REGIONAL PLANNER, UN-HABITAT

Dennis is an Urban and Regional Planning professional currently supporting the Regional and Metropolitan Unit in the Urban Planning and Design Branch of UN-Habitat. He previously worked under the same capacity with Urban Planning and Design LAB in the context of the Kingdom of Saudi Arabia integrating Supranational, National and regional components to the specific city profiles of the Kingdom.

Before joining the LAB, he worked with the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) in New York as a policy consultant as well as monitoring and evaluation officer. Dennis also worked as an Urban Planner and Architectural professional in various African countries and East Asia, and has an Organisational Leadership certification from Harvard Kennedy School of government in Boston, USA, and master degree in Human Settlements from KU Leuven, Belgium. He is well versed with urban development issues in Africa, Europe, Asia, as well as Latin and North America.
JONGHYEON LEE  
DEPUTY DIRECTOR OF URBAN POLICY DIVISION, MOLIT

Jongyeon Lee is Deputy Director of Urban Policy Division, Ministry of Land, infrastructure, and Transport (MOLIT). Before joining Urban Policy Division, he has experienced at several departments in MOLIT. Until the beginning of 2019, he worked for Planning and Coordination Office and organized successfully Metropolitan Transport Committee, which is newly established in 2019. He also worked at Urban Vitality Division and participated in a task force in charge of Urban Regeneration New Deal project. In addition, he worked at the Railway Construction Division, and was in charge of planning railway system in Korea.

HEEJEONG CHOI  
DEPUTY DIRECTOR OF URBAN ECONOMY DIVISION, MOLIT

HeeJeong Choi, a deputy director of Ministry of Land, Infrastructure, and Transport (MOLIT), attained her bachelor’s and master’s degree in Urban Engineering from Hanyang University. She has had steady interest especially in urban development and smart city. She worked under Urban Vitality Division covering land use control and city disaster prevention, and currently is in charge of international cooperation for smart city under Urban Economy Division. She is also supervising the ‘World Smart City Expo’ which will be held from 4th~6th of September at KINTEX, Goyang-si, Korea.

JUNGIK KIM  
DIRECTOR OF THE GLOBAL COOPERATION CENTE, LH

Jungik Kim is Director of Global Cooperation Center at Korea Land & Housing Corporation (LH). He is a Project Management Professional (PMP) and received his doctorate in Regional Planning from the University of Illinois at Urbana-Champaign, USA, a Master’s degree in City Planning from University of Pennsylvania, and an undergraduate degree in Economics from Sung Kyun Kwan University, Korea. He has extensive work experiences over 31 years with LH, ranging from planning, evaluation, spatial analysis, compensation and marketing.

DR. JUNYOUNG CHOI  
MANAGER OF THE URBAN PROJECT OFFICE, LH

Dr. Junyoung Choi holds a bachelor, master and Ph.D. degree in urban planning and GIS from Hanyang University. He worked at the urban information research center and BRT research team in Seoul Institute from 2001 to 2003 and policy research center in KLID from 2003 to 2006 as a research fellow. He joined LH in 2006 and participated in National Spatial Data Infrastructure and Spatial Big Data project development. He was secondment to UN-Habitat in Nairobi, Kenya as a smart safer city expert for 6 months. He is currently a manager of urban project office in LH managing and developing Paju new town. Also, he is a member of special committee on smart city in the Korean Association of Regional Information Society.
Jungwoo Park, a Project Coordinator of International Business Office, received a Bachelor’s degree in Architecture Engineering from Korea University and a Master’s degree in Urban Planning from Seoul National University. He also studied International Development and Regional Economy from Rutgers, The State University of New Jersey and earned CFA and CCIM. After he joined LH in 2004, he performed projects dealing with distribution complex, industrial complex, FEZ, and urban regeneration. Since 2015, he has been working at the International Business Office covering Industrial Complex projects in Malaysia, Indonesia, Vietnam and Myanmar.

Jungwoo Park
ADJUNCT PROFESSOR, KYUNGSUNG UNIVERSITY

Jungwoo Park, an adjunct professor of Kyungsung University and a chief researcher of Smart Community Research Center (SCRC), received his Bachelor’s degree in Urban Engineering, Master’s and Doctor’s degree in Geomatics from Busan University. He participated in U-City R&D as a researcher, managed living-lab among smart city-test sites creating projects from 2016 to 2017, studied vitalization of smart city governance, and established a basic structure of smart city demonstration project for built-up area. He is currently managing Living-lab with LH for constructing smart city service in living space in Sejong-si.

Dongyeong Kim, a Project Coordinator of International Business Office, received a Bachelor’s degree in Architecture Engineering from Korea University and a Master’s degree in Urban Planning from Seoul National University. He also studied International Development and Regional Economy from Rutgers, The State University of New Jersey and earned CFA and CCIM. After he joined LH in 2004, he performed projects dealing with distribution complex, industrial complex, FEZ, and urban regeneration. Since 2015, he has been working at the International Business Office covering Industrial Complex projects in Malaysia, Indonesia, Vietnam and Myanmar.

JUNGWOO PARK
ADJUNCT PROFESSOR, KYUNGSUNG UNIVERSITY

DONGYEONG KIM
PROJECT COORDINATOR, INTERNATIONAL BUSINESS OFFICE, LH

Philjae Hwang, a head of Kuwait project supervising the smart city project in Kuwait, earned his BA & MA in Civil Engineering from Hanyang University, Korea and holds a one-year Diploma Course on City Planning and Real Estate. After he entered Korea Landing & Housing Corporation in 1990, he has been managing various types of urban development projects including housing site, industrial complex, urban regeneration, and new town development for 25 years.

PHILJAE HWANG
HEAD OF THE KUWAIT SMART CITY PROJECT, LH
Korea’s Efforts to Meet UN SDGs: K-SDGs and Cases of Application on Korean Smart City Development

Janghwan Seong, Ph.D.
Director, Global Partnership Office, Land & Housing Institute

Keywords: UN SDGs, Goal 11, K-SDGs, Sustainable Development, Korea

“Korea’s Efforts to Meet UN SDGs, K-SDGs“

A city does not exist on its own, but rather can be understood as an organic space which is part of a bigger area that includes the suburban area, and the rural areas. Unplanned urbanization will have implications not only on people but also the vulnerable farm lands, which the wellbeing of people depends upon, and the ecosystem. Therefore, urbanization and building dwellings the right way is related to the sustainable world we talk about on a vertical level (i.e. nation, municipalities, places) and the horizontal level (i.e. urban, suburban, and rural areas) alike. Professor Jeffry Sacks of Columbia University, who laid the blueprint of the UN SDGs, leads the SDSN (Sustainable Development Solution Network), which argues that building inclusive, productive, and resilient cities can help a nation meet its SDGs. Such claim was reflected on the 11th out of the 17 UN SDGs, Make Cities and human settlements inclusive, safe, resilient and sustainable. It highlights eliminating severe urban poverty, improving the accessibility of the transportation disadvantaged, improvement of living standards, efficient land use, and climate-and-disaster-resilience.

Meanwhile, in its response to a universal values and goals of the international community to be met by 2030, the UN SDGs, Korea has enacted laws including “The Sustainable Development Act”, “The Framework Act on Low Carbon, Green Growth”, and “The Framework Act on International Development Cooperation”, and enforces legally identified plans to meet the targets set in the UN SDGs. Also, it develops and manages national SDGs called K(Korean)-SDGs for the concrete implementation and achievement of the SDGs. K-SDGs can be summed up as processes of devising detailed action plans by combining the sustainable development indicators managed from before the introduction of the UN SDGs and the major indicators home and abroad. In setting K-SDGs Indicators by each goal, the civil society, government workers, and the academia participate in the process through K-SDGs Working Group and K-MGoS (Korea-Major Groups and Other Stakeholders), forming a private-public-academic governance system.

<table>
<thead>
<tr>
<th>Major Domestic Indicators</th>
<th>Existing Indicators of Sustainable Development</th>
<th>Major International Indicators (UN SDGs, OECD BU, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Set up comprehensive goal and indicator system of K-SDGs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Set goals by K-SDGs indicator</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Set up K-SDGs strategy</td>
</tr>
</tbody>
</table>

<K-SDGs Devising Process>
Indicators of Goal 11 are mostly either Tier-Ⅱ (has an internationally established methodology and standards are available, but data are not regularly produced), Tier-Ⅲ(no internationally established methodology or standards are yet available for the indicator), making it impossible to gain or develop indicators by country in cases and including some contents that are not realistic. But luckily, the indicator by sector managed by the Korean government had a wide spectrum including many replaceable indicators. Though not perfect, devising these replaceable indicators served as a starting point of social discourse to meet the target of Goal 11.

**<Detailed Goals and Indicators of UN SDG 11 and Korea’s K-SDGs Indicators >**

<table>
<thead>
<tr>
<th>Goal 11 of UN SDGs</th>
<th>Indicator</th>
<th>K-SDGs Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1</td>
<td>Proportion of urban population living in slums, informal settlements or inadequate housing</td>
<td>(MOLIT)</td>
</tr>
<tr>
<td></td>
<td>11.1.1</td>
<td>1. Number of units supplied of public rental housing (10,000 units)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Number of beneficiary household of housing allowance (10,000) and its finance (Trillion KRW)</td>
</tr>
<tr>
<td>11.2</td>
<td>Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities</td>
<td>(MOLIT, MOIS)</td>
</tr>
<tr>
<td></td>
<td>11.2.1</td>
<td>1. Share of public transportation means (%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Accessibility rate of the transportation disadvantaged marked by means including bus for the disabled and metro use rate (%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Green transportation stimulation rate: share of bicycles (%), road extension per person (m/person)</td>
</tr>
<tr>
<td>11.3</td>
<td>Ratio of land consumption rate to population growth rate</td>
<td>(MOLIT, MOIS)</td>
</tr>
<tr>
<td></td>
<td>11.3.1</td>
<td>1. Land use ratio within semi-urbanized zones (%)</td>
</tr>
<tr>
<td></td>
<td>11.3.2</td>
<td>2. Budget ratio of citizen participation facilitation (%)</td>
</tr>
<tr>
<td>Goal 11 of UN SDGs</td>
<td>Indicator</td>
<td>K-SDGs Indicator</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------</td>
<td>------------------</td>
</tr>
<tr>
<td>11.4</td>
<td>11.4.1</td>
<td>Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(CULTURAL HERITAGE ADMINISTRATION)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Number of registered world cultural heritage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Budget for preservation and protection of world cultural heritage</td>
</tr>
<tr>
<td>11.5</td>
<td>11.5.1</td>
<td>Number of deaths, missing persons and persons affected by disaster per 100,000 people</td>
</tr>
<tr>
<td></td>
<td>11.5.2</td>
<td>Direct disaster economic loss in relation to global GDP, including disaster damage to critical infrastructure and disruption of basic services</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(MOIS, MOLIT)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Number of deaths from social disaster per population of 100,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. National restoration budget compared to damage from natural disaster</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Ratio of municipality which has a disaster preventive model of urban planning based on analysis of vulnerability to disasters of cities (%)</td>
</tr>
<tr>
<td>11.6</td>
<td>11.6.1</td>
<td>Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities</td>
</tr>
<tr>
<td></td>
<td>11.6.2</td>
<td>Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ME, MOTIE, MOIS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Number of days which marked “Bad” level of find dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Waste generation volume of households and businesses (Ton/GDP 1Billion KRW)</td>
</tr>
<tr>
<td>11.7</td>
<td>11.7.1</td>
<td>Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities</td>
</tr>
<tr>
<td></td>
<td>11.7.2</td>
<td>Proportion of persons victim of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous 12 months</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(MOLIT, MOIS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Area size of urban park per person (m²)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Population number with easy access to park facilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Portion of walking path</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Portion of disabled-friendly public buildings</td>
</tr>
</tbody>
</table>
### Goal 11 of UN SDGs

<table>
<thead>
<tr>
<th>Target</th>
<th>Indicator</th>
<th>K-SDGs Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.a</td>
<td>Proportion of population living in cities that implement urban and regional development plans integrating population projections and resource needs, by size of city</td>
<td>(ME, MOLIT, Korea Forest Service) The number of municipalities that set Urban/County Basic Plans which reflect the natural preservation plan</td>
</tr>
</tbody>
</table>

* Government offices managing the K-SDGs indicators are given in ()


### “Cases Analysis of Major Korean Smart Cities using UN SDGs Indicators: Sejong and Pangyo”

A case analysis was carried out using some indicators (11.2.1 and 11.7.1) of SDG 11 on two of the recent smart cities developed by LH (Korea Land & Housing Corporation) – Sejong City, a multi-functional administrative city, and Pangyo, a blend of high-tech industry valley and residential town in the suburb of Seoul.

Applying indicator 11.2.1 (convenient access to public transport) on the cities, the analysis results showed that cities mostly had excellent road and public transport accessibility. It is interpreted that it owes to having transport effect evaluation were taken into account from the development stage such as intra-and-inter-city connectivity or connection to nearby road infrastructure.

Applying indicator 11.7.1 (access to green and public space), the analysis results showed a good level of access to green spaces and public spaces. This owes to the fact that the cities were applied a design technique that organically connects the natural environment and spaces existing from before development of the cities, the developed public spaces and the dwelling.

Of course, these cities are smart cities propelled by government policy based on special purpose of the central and local governments, and it may be well expected of both cases to show excellent level of satisfying the indicators. But it is worth noting that Korea has institutional mechanisms to ensure the sustainability of a city including smart city work manual, sustainable smart city planning standards, urban basic plans and management plans, district unit plans in place for decades as the baseline means of developing and managing smart cities and incumbent cities. Moreover, it has been long since it became commonly expected for cities to have a stable supply of urban infrastructures such as public transport and public spaces in smart cities and incumbent cities alike. And the more recent focus which are part of Korea’s national agenda, disaster response and prevention, environmental issues such as fine dust, are backed by government-wide measures.

<Case Analysis of Major Korean Smart Cities using Goal 11 Indicators >

<table>
<thead>
<tr>
<th>City Layout</th>
<th>Accessibility of Public Transportation (Indicator 11.2.1)</th>
<th>Accessibility of Green and Public Space (Indicator 11.7.1)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="City Layout" /></td>
<td><img src="image2.png" alt="Accessibility of Public Transportation" /></td>
<td><img src="image3.png" alt="Accessibility of Green and Public Space" /></td>
</tr>
</tbody>
</table>
"Creating Sustainable Cities and Dwellings Beyond Indicators"

Concluding from the case analyses results, cities are largely accepting the direction of the SDGs at least for Goal 11. Relatively newly development cities have a mix of various housing environments in consideration of different household member characteristics, economic situations including individual income level, and the cities provide growing means of transportation to widen common access to public transport. In addition, public spaces as parks and green space are growing in area size in line with growing leisure time and living standards, and cities are responding to growing demand for clean urban environment and a disaster-proofed life by continuously putting in more environmental hygiene facilities and disaster prevention facilities resulting in a stronger urban management capability.

In incumbent cities, urban regeneration projects propelled by national policy propose various measures to keep the existing urban infrastructure and raise the resilience of old facilities instead of demolishing them, leading some inspiring attempts to improve the quality of urban environment in Korea.

With regards to the direction of SDG 11 being a sustainable city and developing dwellings, developing a living environment to ensure human dignity would be the most important agenda. As illustrated in indicator 11.1.1 of Goal 11 (Proportion of urban population living in slums, informal settlements or inadequate housing), the international community along with the UN are calling for efforts to improving the quality of life of citizens inhabiting slums and informal settlements, and its relevance is strengthened as it is named a basic principle for the international society for the following 15 years. Korea must also work in the same direction to, in a narrow sense, propose project plans that align with the goals and indicators of SDG 11 as a member of the International Development Cooperation Programmes, and, in a wider sense, respond with close concentration to raising the quality of life of its citizens and to contribute to the international goals as a mature member of the international community.
**Overseas Cases of Korea’s Smart Transport Project**

*Oh Joong-su*

Team Manager, LG CNS Smart City Business Team

**Keywords:** Smart transportation, TOPIS, overseas projects

- **Korea’s Smart City Implementation Strategies and Current Status**

Since the 2018.1.29 announcement of the government’s Smart City implementation strategies and the development plans of Sejong 5-1 Life Zone and Busan EDC (Eco Delta City) as National Pilot Cities, Smart City has become the buzzword for local governments and the industries in Korea. The Ministry of Land, Infrastructure and Transport (MOLIT), who is at the head of the Smart City projects of the nation, is seeking to overcome the limitations of the U-City project of the past and evolve the past model to a Smart City by harnessing data-based city platforms. Towards these goals, the Ministry is presenting implementation strategies tailored to each development phase of a city to accelerate the project. First, cities at the “new development stage” transform into world’s leading National Pilot Cities by applying future technologies and new city operation models. Cities that have already been developed that are at the “operation stage” become places where data hub models and diverse smart solutions are developed and demonstrated in conjunction with the national strategic R&D. In addition, new policy projects are spearheaded to apply creative ideas from private businesses, local governments and universities that are collected via an open competition for Smart Challenge and complexes with special themes in order to solve actual problems in the city. Lastly, cities in the “deterioration and decline stage” are implementing urban renewal projects not only in the physical sense, but also in the Smart City way by introducing a Smart City service.

The national Smart City project not only aims to make the urban management and the civil service more efficient, foster the new technologies and businesses of the 4th Industrial revolution, but also to enhance the competitiveness of the nation by producing prompt results of Smart City and to import the model based on Korean references to overseas.

- **Cases of Overseas Projects from the Perspective of Smart City Service**

Smart City did not emerge as a buzzword just recently. In fact, Korea has seen a similar U-City Project from the as early as the 2000s. It was through this project that the infrastructure for Smart City 1.0 was set in place, and the vertical services such as the urban administration, transport, safety, and urban facilities management were established. What changed with the age of Smart City 3.0 are the civil participation, the perception of city in terms of data and platform (City as a Platform), participation from the private businesses and the sustainability of the business-model-based services.

There has been a steady stream of overseas projects which were based on Korean references, the private investment business model, and Public Private Partnerships in the field of transport and energy. The LG CNS Smart Transportation overseas project is introduced in the following as a case in point.

**LG CNS Smart Transportation Service**

The smart transportation service of LG CNS is not just about applying smart technologies to transportation to improve mobility. It’s about providing environmentally friendly and safe transportation services and solutions. Once securing the solutions through R&D in Korea, LG CNS differentiates its services with a focus on technology and verifies the references, creating the world’s best practices in overseas projects. As a turn-key solution provider for public transportation systems, LG CNS has solutions for traffic management, fare collection, EV charging infrastructure, and the control of autonomous cars. Especially, LG CNS provides operation and management services for public transportation in the field of traffic management and fare collection based on the Intelligent Transportation System (ITS), Bus Management System (BMS), the traffic operation information service and the card.
**History of LG CNS Smart Transportation Overseas Projects**

- **New Transportation Card System of Seoul City (2004)**

  On July 1, 2004, Seoul saw a huge reformation of the city's public transportation with the new transit card system named T-money service. Citizens of Seoul could now transfer between public transit including the bus, the subway, and the urban metro free of charge, and pay fare based on their travel distance conveniently with a single T-money card. Seoul City was able to secure the best practice in reforming the transportation system by successfully transforming the city's public transport system funded by private investments with no budget prepared in advance. LG CNS established the KScc (Korea Smart Card Corp.) in partnership with Seoul City to provide for a stable business environment. The corporation has now grown to 260 employees with an annual revenue of 257 billion Korean Won. Despite confusions that came with the radical reformation of the transit system, LG CNS showed its true caliber by drawing the company's technological prowess and capabilities to settle the chaos no later than in just a few days. Today, T-money can pay for the public transit in the metropolitan area such as the airport railroad, intercity and express buses and the tunnel toll on top of the city bus, subway, and taxi. The service is growing to encompass the whole nation, and is expanding beyond the realm of transportation into the micropayment fields, such as convenience store payment.

- **Seoul TOPIs (2005 - 2009)**

  Starting with the establishment of the Intelligent Transport Model City and Seoul City's traffic information system for city expressways in the early 2000s, Korea's traffic information systems have evolved exponentially in terms of the quantity of technology and traffic information by undergoing a myriad of traffic informatization projects. However, as systems were being built separately, be it the Ministry of Land, Infrastructure and Transport (collection of information of expressways and national highways), the National Police Agency (collection of the traffic information of the city roads & traffic enforcement), local governments (collection of traffic information within jurisdictions), or the private traffic information provider, the information provided to citizens was poor in quality though not in quantity. Especially, an integrated traffic information system that could provide an overview by gathering individual pieces of information in one place was not yet in place. Seoul TOPIc (Transport Operation & Information Service) connects all traffic information that is collected through individual systems in Seoul, such as Seoul's traffic information of the urban expressways, BMS, transportation card usage information, the traffic and video information by the National Police Agency, the automated traffic enforcement information, Korea Expressway Corporation's expressway communication information, videos of firefighting and disaster prevention, traffic broadcasting. It is an integrated overarching service center for traffic information which operates and manages the traffic situation in Seoul. By utilizing the integrated traffic information, Seoul City is establishing the traffic policies scientifically.

  Seoul TOPIs was built to be a three-stage project spanning the timeframe from 2005 to 2009. The Seoul TOPIs Center, established by the proposal by LG CNS to Seoul City, is now expanded to the Seoul Safety center, which shows another best practice, as it is frequently visited by traffic-related institutions from numerous countries around the world.

- **Start of the Overseas Projects (2008 - 2011, New Zealand & Malaysia)**

  The massive settlement capabilities that came with the establishment and operation of the Seoul City transportation card, and the experience of building a multi-modal & distance-based fare collection structure experience and an integrated transfer system led LG CNS to projects overseas. The public transportation card for Wellington City of New Zealand in 2008 is the first overseas project for the smart transportation of LG CNS. The user information in the Wellington City transportation cards are settled in the T-money center located in Seoul, which greatly reduced the system building costs for the local bus companies. Thanks to this advantage, the project expanded to Auckland City as well. Furthermore, the transportation card system for Seoul City was also introduced into the 1,500 buses by Kuala Lumpur City, Malaysia. Not only the card terminals, but also the ticket vending machines (TVMs) were included, adding greatly to the convenience of the system. This was the beginning of the expansion of the system to the all of the buses in Kuala Lumpur City.
**Rising as Global Smart Transportation Player (f2011 September onwards, Colombia, Greece, Qatar)**

The Colombia Bogota transportation card system is an automated fare collection and bus management system for 12,000 buses that operate in the city of Bogota and the 40 train stations on the three BRTs. Since construction took off at the end of 2011, some routes are already completed and in operation. The plan is to complete the construction for the new routes by the beginning of 2014, and integrate all of modes of Bogota's public transportation, including the BRT buses and stations already established during Phase 1 and 2, into a single transfer system by 2015. It is expected that the project, which also includes 15 years of operation after the completion of the system, will revolutionize the public transportation system of Bogota, Colombia, as much as it did in Seoul City. The government of Colombia and Bogota City have taken every care at the national level in implementing the project, and opened the entire process to the public eye, going so far as to broadcast the public hearing for the final evaluation live on terrestrial TV to preclude any controversy and ensure impartial selection of the project partner. During the 1-year bidding process, LG CNS engaged in fierce competition among global players from Spain, Brazil, and other parts of the world. The company won the contract and surprise the world again with the seamless launching of the service, rising as a robust global player in the smart transportation field.

Since then, LG CNS has competed with global players in the fields such as automated fare collection (AFC), fleet management system (FMS), platform screen door (PSD) and railway communication. From the e-Ticketing in Athens, Greece, MRT railway communication in Kuala Lumpur, Malaysia, AFC & FMS in Penang, Malaysia, to the PSD project in Qatar, LG CNS is successfully engaging in numerous projects.

**Implications of Overseas Projects**

As the case of LG CNS’ smart transportation shows, the domestic market provides the foundation for creating the world’s best cases and practices. In other words, new business models and business opportunities in new fields must be verified in the domestic market first. By keeping tabs on the various policy ideas, trends, developments, we discover create new service areas other than our home ground of transportation, and create large-scale projects. At the same time, the solutions that have been already verified are to be exported to overseas markets, forming a virtuous cycle between the domestic and the overseas markets. The overseas markets should be able to be expanded both vertically (field of business) and horizontally (region) centering on the hubs so as to allow multi-operation and management. The key to enabling this in the overseas markets is not only the technical cooperation between large companies and SMEs in Korea, but also localizing the project by securing reliable partnerships in the local enterprises.

LG CNS has accomplished some 800 billion won exports with the public transportation case alone. If so, why wouldn’t the potential for Smart City, the very meeting point of all business domains, or the convergence of urban development, construction and ICT technologies, be of an astronomical scale?
Iran’s New Town: A Transition from Classical to Smart Cities

Zohreh Davoudpour

Member of board of directors, Iran’s New Towns Development Company, Ministry of Roads & Urban Development, Iran

Key Words: New Town, Smart City, New Generation of Iran’s New Towns

A. The History of Creating First Generation of New Towns

Increasing population growth is one of the most important features of developmental changes in Iran after the Islamic Revolution. This issue in addition to the large damage caused by the imposed war and the changes in the system of governance of the country is one of the most important factors influencing urban development in the first and second decades after the Islamic Revolution.

In the 1980s, the physical expansion of cities, the settlement of a large number of new-towns in the suburbs, especially large cities, and the rise in land and housing prices in the Cities range, made housing difficult for low-income classes. The increase in the population of the metropolises of the country has led to the development of an inordinate and heterogeneous body of these cities and faces citizens’ lives with new problems. Complications due to residential and demographic Densities, negative environmental consequences, the destruction of agricultural land and gardens, increased traffic severity, etc. are among these problems.

Irregular migration to the big cities and the resulting problems encountered urban planners with the fact that in practice, the towns’ physical body will not be able to provide housing and other needs of citizens by means of modernization and reconstruction. Therefore, the plan for the construction of new towns was proposed by the Ministry of Housing and Urban Development and approved by the Government.

Therefore, the first generation of new towns in the country after the Islamic Revolution could be considered as a product of an approach based on balancing the concentrating population in large cities and controlling and mitigating the consequences of it.

With this view, the most important primary goals of creating new towns after the Islamic Revolution are as follows:
- Distribution of the population and activities in the country through the completion of the urban network;
- Assist in the quantitative and qualitative implementation of housing development programs and to create a balance in the housing market;
- Establishing suitable housing areas for the staff of newly established activities.

The pre-mentioned foregoing goals can be expressed in a more concrete way:
- Avoid extravagance development around metropolitan areas;
- attracting the population of the mother city’s overflow;
- Avoid rising land prices in the mother city;
- Refining the mother city to organize future development and urban environmental protection;
- Avoid creating slums in big cities.
- Prevent the destruction of agricultural land in the suburbs of large cities.

From the above objectives, it is concluded that the first generation of new post-revolutionary towns in Iran, independent cities in order to balance the distribution of population, facilities and activities in one region, relative self-sufficiency in terms of employment and facilities, observance of environmental principles, and

---

2 Davoudpour, Zohreh, The role of new towns in the formation of settlements of Tehran metropolis, 2006.
ultimately separation from the problems of big cities has been created. Today, after nearly three decades of
the first approval of the creation of new towns in Iran, other goals can be added to the above the foregoing
topics; including the creation of new towns in order to settle the population of cities faced with environmental
problems and natural disasters. This attitude toward new towns that they considered a policy to provide social
housing groups and to attract the population of large cities overflow by the government was in the fifth, sixth,
seventh and eighth governments, but during the ninth and tenth governments, with the introduction of the
housing policy of the Mehr housing program And to strengthen the role of government in providing housing
for low-income groups, new towns have also been considered as one of the options for creating Mehr-housing
program. In fact, the role of the settlement and the dormitory of the new towns that preceded continued
during the ninth and tenth governments and combined with the features of the Mehr housing. As a result
of this policy, a lot of lands was assigned in new towns without prior studies and regard to the policies and
targets set for these towns and predicted population segments, and was devoted to the construction of Mehr
housing, based on management orders.

Based on what has been said, in fact, the formation of new towns was a passive response by the government
to rapid population growth and widespread immigration to major cities, regardless of the basic needs of a city,
such as the functional and economic role, facilities of living and etc. in the form of a governmental prescription
was created and expanded.

Today, 29 new towns are considered by the new town development company (NTDC), of which 17 are currently
in operation. Of these, 13 new towns have been built around the country's metropolises: Parand, Pardis and
Andisheh around Tehran; Hashtgerd around Karaj, Golbahar and Binalood around Mashhad; Sahand around
Tabriz; Sadra in northeastern Shiraz; Baharestan; Majlesi; Foulad Shahr in the urban area of Isfahan; Ramin and
Shirinshahr around Ahwaz. As previously mentioned, the role of these towns was to meet the metropolitan
issues and provide the housing needed by the crowd overflow of these metropolitan areas.

B. The Necessity of change the Approach in the New Generation of New Towns

The pathology of the country's first-generation new towns over the past two decades has shown that there
are fundamental barriers and challenges to achieving its goals, or even deviations from the achievement of
planned quality of the environment. The results of the survey necessitate the need to change the approach
to new towns. Hence, an immense and managerial approach to new towns has changed in the country's
governmental Pillars, the Ministry of Roads and Urban Development, and the new towns development
company, and plans and actions have been taken to create the second generation of these towns. Over
the past decades, given the immense growth of the country's population and the growth of metropolitan
populations, the policy was to create new towns in order to absorb population overflows, but now, given the
population growth of the country, the issue of overflow of the population is no longer the first priority, but the
current policy of orientation of new towns is about creativity or entrepreneurship. This change in approach
is identifiable from a number of dimensions. On the other hand, managers and officials of government
agencies in announcing their opinions in the specialized and media associations have announced this change
of approach and on the other hand, the study of official documents suggests the adoption of a new approach
to new towns in the second generation of these towns. In a new approach to new towns by Governmental
Management Institutions, private sector, specialized and academic institutions, the following objectives and
characteristics are considered for these towns and are considered in future planning and actions:

- Ensuring residents' welfare and intelligent access to service systems;
- Environment-friendly smart cities frameworks with energy-efficiency optimization approach in urban,
district and building scale;
- An attempt to realize the various aspects of the creative and the entrepreneur cities;
- Using industrial and economic Clustering capacity and utilizing the opportunities of Knowledgebase
urban development.

Due to the reasons and features outlined above, the need to change the attitudes towards new towns and to
track the emergence and creation of new generations of these towns has been emphasized in the documents
of the future guide of management and Governmental agencies. The National Development Plan for Iranian
New Towns on the horizon of 2040 attempts to map the future path of the country's new towns, in locating
and developing the new generation of these towns, their main features and functions. In this document, in
view of the necessity of Evolution in development approaches of new towns and the transition from quantity
to quality in these towns, the following ten principles are proposed to follow up the operation of the new generation of new towns:\(^3\):

- **Principle 1**: Conservation of Natural Resources, Environmental Storage and Agricultural Lands;
- **Principle 2**: Mixed design (in the sense of mixed landuse, mixing between types of housing, as well as mixing social classes), which will lead to the realization of the inclusive city;
- **Principle 3**: Walkability and encouragement of planning and design based on pedestrian movement and bicycle use;
- **Principle 4**: Design and planning based on public transportation;
- **Principle 5**: Use of new towns in the execution of national and regional development programs;
- **Principle 6**: Relying on the private sector and modern financing methods;
- **Principle 7**: Attention to quality and efficiency in the design and implementation of new towns;
- **Principle 8**: Providing background for social integration and the gradual formation of identity in new towns;
- **Principle 9**: Diversity in urban design and quality architecture;
- **Principle 10**: To pursue the operationalization of the capacities for the realization of creative, entrepreneurs and Knowledgebase cities.

C. Smart New Towns; the New Development Paradigm

Based on what has been said, one of the new concepts to confront the current challenges of the new towns in the area of urban planning, in line with the principles outlined above and the creation of a new generation of new towns is the concept of smart city, which has attracted a lot of attention in recent years. The smart city is considered as the centrepiece of the Millennium transition and Development Program, which means opening up new concepts in urban planning, especially in new towns, which combines the capabilities of the real and virtual world to solve urban problems. In this approach, urban planners and designers are faced not only with new issues and phenomena in urban planning, especially in the design of residential neighbourhoods, public roads and places, but they also go towards the virtualization of urbanization’s process template.

The use of intelligent city hardware and software mechanisms for a country like Iran whose cities are wandering between the transition from traditional, modern, and postmodern models is imperative, but there are many shortcomings in the existing fields for moving in this direction\(^4\). On the one hand, as a centre for innovation, a smart city turns into a laboratory for testing. On the other hand, building a smart city requires integrated measures at various levels of urban management, social organization, and economic context. Smart city is a holistic concept aimed at confronting the contemporary challenge and exploiting the opportunities provided by the advances in information and communication technology and urbanization. Therefore, given the nature of new towns, which are always considered as urban planning workshops, as well as pre-thoughted planning and design pattern in them, combined with the integration of management activities, social and economic processes and activities, these towns, especially new generation towns with innovative, entrepreneurship and knowledgebase approaches, can provide a good foundation for the realization of a smart city. Therefore, the new generation of Iran’s new towns are supposed to be intelligent cities with healthy, green and low carbon environment, energy optimization, increased resilience, construction technologies, the impact of communication and information technology on providing services, creating advanced and accessible communication lines and information, solar and wind power plants, construction and maintenance of roads and intelligent transportation systems have been realized in them.

Based on the above-mentioned features, the new towns construction company decided to construct 12 new towns as smart cities in the form of new generations of new towns, according to which four new towns of Ivanakey (Semnan), Amirkabir (Arak), Siraf (Assaluyeh) Tiss (Chabahar) entered the execution phase and the eight new towns of Houra (Hamadan), Koushk and Mokran (Hormozgan), Tabnak (Lamerd), Pars (Bushehr), Khwarazmi (Tehran), Samangan (Sirjan) and Sanandaj (Kurdestan) are in The stage of locating, designing and obtaining approval by law enforcement agencies.

---

4 Cairney, T. & Speak, G. (2000). Developing a ‘Smart City’: Understanding Information Technology Capacity and Establishing an Agenda for Change. Centre for Regional Research and Innovation, University of Western Sydney
Role of Smart Cities Strategy in Upstream Urban Plans in Iran

Pedram Mehraie
Urban Planner at Urban Regeneration Company of Iran

Key Words: Smart Cities, Urban Plans, Information and communications technology (ICT)

In general, legal requirements pertinent to the approach of smart city in Iran are mostly defined under the topic “Information and Communication Technology”. Some of the essential documents in which the issue of “Information and Communication Technology” is referred to are listed hereunder:

- I.R. Iran’s 20-year vision document;
- Comprehensive scientific map of the nation;
- Rules of the 5-year plans for development of the nation;
- Strategic document of Iranian information society.

The above documents may be reviewed in two levels:

1- National development documents with a special emphasis on providing the infrastructures and facilities required for smartization of public institutions, facilitation of e-economic exchanges, smart education and in general, increase of efficiency in economic, social and cultural areas through solutions which are based information and communication technologies.

2- Specialized policy-making documents regarding information and communication technology dealt with codification of practical strategies to smartize economic, social and cultural procedures by enjoying the macro policies defined in the national development documents.

1- General policies mentioned in the national development documents

1-1- ICT provisions in I.R. Iran’s 20-year vision document

ICT is referred to in I.R. Iran’s 20-year vision document in general and under clauses 9 and 48 in specific. The necessity for organizing the facilities and capacities of the nation to acquire modern technologies in information and communication has been pointed out in clause 9. Clause 48 specifically points to “promotion of capacities and capabilities of cooperative sector through facilitating in the process of accessing to resources, information, communication technology and development of its technical, economic and financial links”.

1-2- ICT provisions in the general scientific map of the nation

In the general scientific map of the nation, besides declaring ICT issue as one of the top priorities in science and technology of the nation, development of e-education system and e-health is pointed out as the most essential issues needed to be addressed.

1-3- ICT provisions in the Third Development Plan Law

In the Third Development Plan Law, assignment of the provision of ICT services to the private sector, enhancement of private sector engaged in ICT, decrease of government monopoly, development of ICT communication infrastructures by establishment of independent and parallel networks for ICT services (post and telecommunication) by the nongovernmental sector, enhancement of IT industry, decrease of digital gap and finally, special attention to ICT applications such as e-commerce and e-tax are among the essential issues addressed in ICT area.

1-4- ICT provisions in the Fourth Development Plan Law

Over 41 provisions in the Fourth Development Plan Law were related to ICT. From among 41 provisions pertinent to ICT in the Fourth Development Plan Law, development of e-government and helping the development of ICT industry were the two issues which were received most attentions. E-government, banking and e-commerce, e-education, e-health, ICT industry, legal, information and communication infrastructures are among the issues discussed in ICT area in the Fourth Development Plan Law.
1-5- ICT provisions in the Fifth Development Plan Law

Over 32 articles of the Fifth Development Plan Law are associated with ICT area. Article 46 of the plan may be considered as a prominent example of developmental provisions in this area. Complete development of national information network, development of e-government and e-services, emphasis on development of e-commerce infrastructures, completion of infrastructures for local and property data as well as infrastructures for identity and property information, use of e-signature, increase of efficiency in economic, social and cultural areas, attention to development and enhancement of IT industry were among other provisions pertinent to ICT in the Fifth Development Plan.

1-6- ICT provisions in the Sixth Development Plan Law

In its articles 67—69, the Sixth Development Plan Law has specifically focused on the issues pertaining to ICT. In article 67, measures such as increase of transfer (transit) capacity, bandwidth, development of infrastructures of e-services in deprived and rural zones, development of e-government and preservation of integration of national information system, electronification of all procedures and services with electronic capability, completion of databanks, development and establishment of e-treasury and authentication of e-documents have been mentioned. In article 68, development of online electronic contents and services operation of e-tax systems, e-government transactions and e-health have been emphasized by covering all beneficiaries. Moreover, the government is obligated to make the necessary arrangements in this regard to decrease a minimum of 12.5% per year from personal referrals to the executive organizations, achieving a minimum of 7.5$ annual grown in electronification of transactions and trade of goods and services in the nation and increase of appropriate digital contents up to 10 times. Article 69 of the said law has bound the Ministry of Communications and Information Technology to provide for free the students in small cities below 20,000 people, villages and suburbs of large cities with electronic access to educational contents both hardware and software, professional skills education and technical and social skills. Moreover, by virtue of article 108 of the said law, Ministry of Road and Urban Development is obligated to take action in smartization of main passageways, squares and expressways in the centers of provinces and metropolises through control systems.

2- Specialized policy-making documents in ICT issue

2-1- Strategic document of Iranian information society

Strategic document of Iranian information society is in fact a national strategic plan to form the information society in Iran of which main emphasis is not based on ICT, but on a network society in which ICT is a means to access social goals. The necessity for realization of such information society intended by this document is the achievement of 5 strategic areas as follows:

2-1-1- Access to a network-based environment: Establishment of infrastructures and securing private and public access for all individuals, groups and institutions of society to high quality communications and securing digital contents in proportion to the needs of people.

2-1-2- Human development, network-based science and education: Optimization of national educational system, providing the required infrastructures for education of manpower of the nation to attend the network-based world.

2-1-3- Network-based society: Network-based strategy seeks to increase the use of IT in routine life of citizens and utilizing that in workplace of public and private organizations. Therefore, the solutions provided under this strategy, securing the needs of family, internal procedures of economic firms and daily duties of public and private organizations may be made through online mechanisms.

2-1-4- Network-based economy: Major topics in this area include utilization of ITC capabilities in order to boost e-business, increase of occupations arising from use of ITC and increase of capabilities and services of government in a smart way.

2-1-5- Policies governing the development of information society: Providing the necessary ground for development of the above topics are addressed in this area. The most essential strategies under this area include establishment of an integrated guiding institution in IT area and security for information exchange space.
Conclusion

By reviewing the strategic policies and documents pertinent to smart city which have been discussed in Iran mainly in the form of strategies and policies associated with ICT topic, one may conclude that in addition to mere technical and technological aspects, such policies enjoy economic, social and cultural aspects as well. This multidimensional approach can be seen both in national macro policies and in the strategic document of Iranian information society. Therefore, in addition to accurately measure the policymaking condition in relation to smart city in Iran and to make a comparative study on the contents of smart city and the strategies mentioned in the national policymaking documents, dimensions and features of smart city and the corresponding strategies of each feature in national documents are discussed:

In the studies related to smart city, 6 main aspects are considered for the projects and initiatives associated with smart city:

- **Smart Economy:** By Smart Economy we mean e-business and e-commerce, increased productivity, ICT-enabled and advanced manufacturing and delivery of services, ICT-enabled innovation, as well as new products, new services and business models. It also establishes smart clusters and eco-systems (e.g. digital business and entrepreneurship). Smart Economy also entails local and global inter-connectedness and international embeddedness with physical and virtual flows of goods, services and knowledge.

- **Smart People:** By Smart People we mean e-skills, working in ICT-enabled working, having access to education and training, human resources and capacity management, within an inclusive society that improves creativity and fosters innovation. As a characteristic, it can also enable people and communities to themselves input, use, manipulate and personalize data, for example through appropriate data analytic tools and dashboards, to make decisions and create products and services.

- **Smart Governance:** By Smart Governance we mean joined up within-city and across-city governance, including services and interactions which link and, where relevant, integrate public, private, and civil so the city can function efficiently and effectively as one organism. The main enabling tool to achieve this is ICT (infrastructures, hardware and software), enabled by smart processes and interoperability and fuelled by data. International, national and hinterland links are also important (beyond the city), given that a Smart City could be described as quintessentially a globally networked hub. Smart objectives include transparency and open data by using ICT and e-government in participatory decision-making and co-created e-services, for example apps.

- **Smart Mobility:** By Smart Mobility we mean ICT supported and integrated transport and logistics systems. For example, sustainable, safe and interconnected transportation systems can encompass trams, buses, trains, metros, cars, cycles and pedestrians in situations using one or more modes of transport. Smart Mobility prioritizes clean and often non-motorized options. Relevant and real-time information can be accessed by the public in order to save time and improve commuting efficiency, save costs and reduce CO2 emissions, as well as to network transport managers to improve services and provide feedback to citizens. Mobility system users might also provide their own real-time data or contribute to long-term planning.

- **Smart Environment:** By smart environment we include smart energy including renewables, ICT enabled energy grids, metering, pollution control and monitoring, renovation of buildings and amenities, green buildings, green urban planning, as well as resource use efficiency, re-use and resource substitution which serves the above goals. Urban services such as street lighting, waste management, drainage systems, and water resource systems that are monitored to evaluate the system, reduce pollution and improve water quality are also good examples.

- **Smart Living:** By Smart Living we mean ICT-enabled life styles, behaviour and consumption. Smart Living is also healthy and safe living in a culturally vibrant city with diverse cultural facilities, and incorporates good quality housing and accommodation. Smart Living is also linked to high levels of social cohesion and social capital.
<table>
<thead>
<tr>
<th>Smart City Components</th>
<th>I.R. Iran’s 20-year vision document;</th>
<th>Comprehensive scientific map of the nation</th>
<th>Rules of the 5-year plans for development</th>
<th>Iranian information society strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart Economy</td>
<td>development of technical, economic and financial links</td>
<td>-</td>
<td>e-commerce - e-tax - banking and e-commerce - development and establishment of e-treasury and authentication of e-documents - e-government transactions</td>
<td>- Securing the needs of family, internal procedures of economic firms through online mechanisms - boost e-business, increase of occupations arising from use of ITc</td>
</tr>
<tr>
<td>Smart People</td>
<td>-</td>
<td>development of e-education system and e-health</td>
<td>development of e-education system and e-health</td>
<td>Optimization of national educational system, providing the required infrastructures for education of manpower of the nation to attend the network-based world</td>
</tr>
<tr>
<td>Smart Governance</td>
<td>-</td>
<td>-</td>
<td>development of e-government and e-services</td>
<td>Securing daily duties of public and private organizations through online mechanisms</td>
</tr>
<tr>
<td>Smart Mobility</td>
<td>-</td>
<td>-</td>
<td>smartization of main passageways, squares and expressways</td>
<td>-</td>
</tr>
<tr>
<td>Smart Environment</td>
<td>-</td>
<td>-</td>
<td>completion of infrastructures for local and property data</td>
<td>-</td>
</tr>
<tr>
<td>Smart Living</td>
<td>facilitating the process of accessing to resources, information, and communication technology</td>
<td>development of e-education system and e-health</td>
<td>- establishment of independent and parallel networks for ICT services - development and establishment of e-documents</td>
<td>- Establishment of infrastructures and securing private and public access for all individuals, groups and institutions of society to high quality communications - Increase the use of IT in routine life of citizens and utilizing that in workplace of public and private organizations</td>
</tr>
</tbody>
</table>
What is “SMART” for Myanmar?

Anuradha Panigrahi
Urban Specialist, UN-HABITAT

Key Words: Smart City Strategies, Urbanisation, Sustainable Innovations

One of the most pressing issues of urban planning is to respond to the growing urbanization and the growth of informal settlements. UN has predicted, “By 2030, there will be more than 500 cities in the world with populations of more than 1 million each; more than half of these cities will be in Asia” (United Nations, 2016). Cities, where most of the resources are consumed, have become the economic and social machines of countries. In Myanmar, the rate of urbanization has been comparatively lower to other neighbouring countries in the region, although the rate of urbanization is concentrated in the 3 major cities of Myanmar. However, the rate of urbanization in the three cities is growing at rapid speed which is resulting in highly densified organically growing cities, over-pressured demand of municipal services, shortage of affordable housing and mobility challenges.

On the contrary Myanmar’s newly built capital; Nay Pyi Taw faces a different planning issue of urban sprawl. This call for moving the capital from Yangon to a rural mountainous valley in the southern Mandalay region was from the Myanmar Military government (Preecharushh D, 2010). The capital city covering 1036 sq.km of area is designed in such a way that it has resulted in different zoning areas without mix development strategy producing higher commuting costs, loss of agricultural land, and unsafe urban environment giving rise to unsustainable and inefficiencies. Thus, the urgency around these trivial problems demand sustainable and smart strategies to manage cities. In the light to respond to these problems, Myanmar determined to address the urban problems through developing a National Urban Policy for the country integrated with Smart City Strategy.

Around the world, countries are looking towards smart solutions/innovations to manage the comprehensive development of physical, institutional, social and economic infrastructure of rapidly urbanizing cities. A Smart City is generally defined as “The use of Smart Computing technologies to make the critical infrastructure components and services of a city—which include city administration, education, healthcare, public safety, real estate, transportation, and utilities—more intelligent, interconnected, and efficient” (Chourabi et al., 2012). In my opinion, the definitions around the globe around Smart cities heavily feature the use of ICT. But, one may argue are citizens in the least developing countries able to adapt to ICT based solutions? Or will the governance of these countries can be governed with the help of ICT. For example, in Myanmar introduction of electronic bus cards in 2016 was not fully successful due to the lack of awareness and application amongst the citizens. In India, the introduction of RFID tags on garbage trucks to map their routes was notoriously taken advantage of by the drivers and the data mapped was highly incorrect. Thus, the idea of developing a smart city should not only look at introducing ICT systems, but should first critically analyse if and how this will help the citizens and the government to sustainably run their cities.

A smart city in India will have very different implementations of technologies given the context than in Europe or South Korea. The approach to smart cities is varied across countries. For example, the government of India introduced a top-down approach of Smart Cities Mission in 2016, with an objective of promoting and retrofitting cities with sustainable and inclusive development using a strategy of area-based development. Whereas, in Netherlands the approach towards smart cities is a bottom-up approach where pilot projects are being developed in cities with active citizen participation. While in China, based on green field development the government is piloting 500 smart cities in a top-down approach by heavily investing in smart economies, intelligent traffic management and creating new smart cities. As is evident, there is no one way to approach smart cities, and countries around the world are adopting strategies that fit their context.

Meanwhile, in Myanmar there is no national level smart city strategy yet, although the 3 major city development authorities have been very enthusiastic about implementing smart ICT (Information, Communications and Technology) innovations in managing their cities since 2017. As of today, city development authorities are implementing smart solutions with a top-down approach investing in new eco-green cities, ICT-led infrastructure management and conserving and improving existing areas in the cities.
The Mandalay City Development Committee has been implementing Smart innovations in different infrastructure management projects such as traffic management, road safety, public transport, increased pedestrian mobility and good solid waste management systems. The MCDC has been working on some of these aspects such as internet-connected sensors to manage traffic at junctions, GPS systems in garbage trucks to map the daily routes and drone mapping of Households to map garbage routes.

The Nay Pyi Taw City Development Committee is now starting to work on a vision of Green and Liveable city, where they are trying to set up GIS (Geo-information System) and collect data on four different aspects such as clean water, smart street lights, traffic control system and affordable housing for retired government officials.

The Yangon City Development Committee (YCDC) along with Japan International Cooperation Agency (JICA) have cited smart-city policy initiative in the Strategic Urban Development Plan of the Greater Yangon Region 2040. The smart-city policy in very limited scope talks about advancement of smart technologies such as energy recycling, electric buses and energy management systems. YCDC’s smart city vision also cites the conservation of downtown Yangon area. Apart from the 3 cities, other cities like Magwe have been adopting smart solutions like installing solar power plants which aims to supply 8 percent of the country’s electricity through renewable energy sources such as wind and solar power, by 2020.

As can be observed in Myanmar, the cities are eagerly implementing wide-ranging smart solutions as key instruments to improve the management of their cities, but there is an imperative need to introduce citizen participatory approaches in implementing these visions. As suggested by Ratti and Townsend, 2011, “Top-down visions ignore the enormous [and] innovative potential of grass-roots efforts”. Thus, if these cities start adopting a mix of top-down and bottom-up approaches in their development and implementation strategy the issues can be tackled more efficiently and successfully. For instance, introducing pilots in communities with citizens on awareness of segregation of waste, harmful effects of gasses produced from dumping ground and smart mapping of wastes can help the authorities to efficiently manage their resources and make environmentally safe cities. Another example would be, pilots like designing public spaces with the communities using smart applications like Minecraft for a more integrated urban development. Furthermore in my view, Myanmar’s national smart city strategy should address ‘smart’ in relation to not only ICT-run solutions in the three cities but should also focus on sustainable regional development of other cities and towns.

In conclusion, the Korea exchange visit should be used as a learning opportunity to highlight how context specific smart solutions can be adopted and address capacity building initiatives for government resources. Additionally, visiting Korean smart cities will also be an enriching learning experience for the three participating countries, to study how the Korean governments’ priorities and visions have shaped the implementation of their smart cities.
Planning Process and smart city approach in Myanmar

Moe Moe Hlaing Myint
Department of Urban and Housing Development, Ministry of Construction, Myanmar

Key words: Planning Process, Planning Legislation, Smart city strategies

Myanmar is located in Southeast Asia and bordered with China, Laos, Thailand, Bangladesh and India. It is composed of 7 States, 7 Regions and one union territory. By the Population and Housing Census 2014, country population is 51.486 million and the national population growth rate is 0.89%. 30% of the population lives in urban area. Average urban population growth rate is 1.67.

Majority of urban population is concentrated in three major cities. However, secondary cities with population above 50,000 will be increasing annually. The urban population is expected to rapidly increase from 15.4 million in 2014 to 20.4 million in 2030. Unplanned and uncontrollable development is leading to cause the urban sprawl and informal settlements therefore we need systematic and sustainable development plans for every each town in Myanmar. Urban growth tends to push land price high as well as land speculation. Scarcity of land and employment opportunities in rural is pushing people to the cities. Most of the urban issues are based on the basic urban services such as the traffic congestion, electricity shortage, flooding and solid waste.

Department of Urban and Housing Development (DUHD), Ministry of Construction set up the National spatial development framework Plan which is adopted with Yangon and Mandalay Bi-polar development concept linking to the border trade towns by 4 Economic corridors for balanced regional development. Recently Myanmar Sustainable Development Plan (2018-2030) was launched with the long term vision of “a peaceful, prosperous and democratic country”. MSDP is structured around 3 Pillars, 5 Goals, 28 Strategies and 251 Action Plans. All are firmly aligned with the SDGs, the 12 Point Economic Policy of the Union of Myanmar, and various regional commitments.

During 2011 to 2019, DUHD developed more than 100 town development conceptual plans in each of States and Regions in Myanmar. DUHD is trying to establish National Urban System Plan. Myanmar National Building Code also developed in 2016 by Ministry of Construction collaboration with UN-Habitat and Condominium Law also already promulgated in 2018. And drafting the Urban and Regional Development Planning Law which is revising in Parliament and it will be stronger law enforcement in urban legislation.

There are a lot of constraints in planning process because lack of reliable data and maps, weakness in sectoral coordination/collaboration, lack of integration in land information and management system, lack of awareness on urban planning even in the administrative level, limited number of staff in planning field, etc.

Since the establishment of the Sustainable Development Goals and the New Urban Agenda, we have been planning cities or towns in line with and more focusing on the NUA principals and SDGs. Regional and National consultation forums were held to formulate the National Urban Policy in 2018 and 2019 respectively. As the Union Government has been focusing to formulate the NUP, States and Regional Governments also initiate the smart city approach with pilot projects in their cities especially in Yangon, Mandalay and Naypyitaw capital. Although those cities are transformed to the smart, existing physical infrastructure is still needed to upgrade and citizen awareness to use the application of ICT also needed to widely promote. Human resource development and capacity building also need to be developed for both union and local level institutions.

We are now practicing multi-stakeholder participation in planning of city development, preparing the data bank through city profile to be obtained reliable data of cities, land use mapping by GIS and introducing smart city strategies especially in Kalaw City Development Planning Process. In Union Level, there are four Mega Smart Projects, Smart District, Eco-Green City and Korea-Myanmar Industrial Complex in Yangon Region and New Mandalay Resource City in Mandalay Region by the smart city approach. All are in planning stages and Government needs to establish the suitable smart city guidelines for implementation of those projects. Construction, Housing and Infrastructure Development Bank (CHID) introduced affordable housing for people collaboration with DUHD using JICA two-step loan. Those housing must be designed consideration with earth-quake resistant, appropriate building material and energy efficiency for the sustainable development of housing sector.
In Nay Pyi Taw, local government setup the vision as “a Green and livable city, the centre of knowledge hub and as international aviation transit, cargo and logistics hub” focusing on housing and social infrastructure, quality environment and built infrastructure with the pilot projects of affordable housing and low-cost housing project and international comprehensive university project. In Yangon City, local government setup the vision as “an Attractive International Port and Logistic Hub – A city of Blue, Green and Gold” focusing on Civic and Social, Health and Well-being and Built Infrastructure with the selected smart city pilot projects such as Conservation of Yangon City Downtown Area, Low Cost Rental Housing and Transit Oriented Development. In Mandalay City, local government setup the vision as “Mandalay aspires to be a city with safe and smooth mobility” focusing on traffic management, road safety, public transport, parking and walkway management and good management of solid waste and waste water, water supply, and public transport with the selected smart city pilot projects such as Traffic Congestion Management and Solid Waste and Waste Water Treatment. Even though, Regional governments still need to setup appropriate and clear strategies to implement the pilot projects.

In union level, the priority concept notes are drafted for five priority areas such as Municipal Governance and Finance, Urban Legislation, Land Governance, Housing and Environmental & Climate Change. Additionally, DUHD is preparing the Balance Spatial Distribution, Socio-economic Development and Urban Infrastructure & Service provision as well. Drafting the chapters on each priority area will be finalized in June 2019 and Policy formulation will be drafted in August 2019. Recently National Urban Committee was formed with totally 23 members chaired by Union Minister of Ministry of Construction and including 6 deputy ministers from relevant ministries, permanent secretaries, parliament members, etc. Pre-National Urban Forum is supposed to hold in 2019 October in Nay Pyi Taw and Final National Urban Forum will be targeted in 2020 February. And intend to submit NUP documentation statement to WUF-10 in 2020.

According to develop the smart city strategy for selected cities in Myanmar, we need to be adaptable with global practices. We are expecting to learn suitable approaches to setup the smart city strategies and action plans to implement the smart city pilot projects, issues and problems while implementing the pilot projects and how to overcome those issues and problems especially in Korea, Iran and Nigeria contexts. Besides, we would like to learn how to link and coordinate between Union level and State & Region levels and local level as well. Finally, we will introduce and share appropriate strategies of smart city for Myanmar through forthcoming urban forum in Myanmar.
1. BACKGROUND

In May, 2017, the Governor of Niger State, Nigeria, Alhaji Abubakar Sani Bello participated in a high-level panel of Ministers at the Second International Conference on National Urban Policy in Paris, France. He requested for assistance from UN-Habitat and related institutions to implement the following priority projects: prepare Niger State Urban Development Policy (SUP); prepare a Plan for developing a Smart City near Suleja; prepare an Integrated Development Plans for the cities of Minna and Suleja; and strengthen and build the capacity of the state institutions in charge of the development and management of the cities.

The expectation of the Governor is that the SUP will provide the government a coherent basis for managing the consequences of unplanned and uncontrolled urbanization in the State including unemployment, poverty, Youth bulge and environmental degradation. There is equally the expectation that developing a pilot Smart City will enable the government develop strategies that will complement the implementation of the NUP through sustainable urban planning, social inclusiveness, energy efficient buildings and more efficient use and management of urban infrastructure; enable the state government to enhance the transparency and accountability of the cities to their residents; and operate on self-sustaining basis.

2. PREPARATION OF THE STATE URBAN DEVELOPMENT STATE URBAN DEVELOPMENT POLICY (SUP)

Niger State government has received a grant from the South Korean government to develop its SUP; while UN-Habitat is providing the State government technical assistance and has since hired a Human Settlements Consultant to assist with the process.

To ensure effective support at the highest political level and participation of critical stakeholder groups in the process of developing the SUP, a Steering committee and a Technical Support Team have been established. Similarly, the strategies adopted to generate the evidence and data required for preparing the SUP make the process of preparing the SUP are summarized below:

- Stakeholders in each of the 25 local governments of the State have been identified, sensitized and engaged in generating data on their development challenges and economic development potentials. This has provided the basis for preparing the Feasibility and Diagnostic Reports for the SUP;
- Town Hall meetings will be held in five cities to present the analyzed data to them for concurrence and validation;
- A Statewide Urban Forum will be organised to all stakeholders from all parts of the State to develop a shared understanding and concurrence;
- A draft SUP will be produced and circulated for review;
- A validation Workshop will be organised to validate and adopt the SUP and clean copy presented to the Governor;
- The SUP will be enacted into Law by the Niger State House of Assembly; and
- Implementation of the SUP will commence across the state.

3. PLANNING AND DEVELOPMENT OF PILOT SMART CITY, SULEJA

A total of 11,000 hectares of land has been acquired by Niger State Government for the development of the pilot Smart City project. In practical terms, the expectation of the State Government is that the Smart City will provide a lifestyle and environment which is effective, efficient and enjoyable for all the residents; and to fuel sustainable economic development, with data-driven management of infrastructure and natural resources, and effective citizen participation in their governance.
3.1 Main Components of the Pilot Smart City Project

a. **Advanced Meter Infrastructures** - to allow two-way communication between services provider and customers; obtain data with help of smart meter installed in various structures within the Smart City, such as residential, commercial, recreational; assist in cost control and minimizing the wastage of energy. Smartphone apps will enable consumers to effectively monitor and manage the systems within their households.

b. **Smart Street Lights** - LED-powered lights with internet connectivity to enable fault reporting and localized adjustment of light intensity and color. Such Smart Street lights are expected to reduce the cost of electricity usage; and reduce maintenance costs. CCTV with motion detecting cameras will be mounted on the Smart Street Light poles to enhance citywide security.

c. **Smart Buildings** - to deploy Internet of Things (IOTs) and sustainable building technologies to reduce energy and water consumption and reduce waste. These include assorted household appliances, CCTV, fire and burglar alarms, lighting etc.

d. **Open Data** – to be used by the citizens to monitor and evaluate the level of service offered by the state and local governments; engage and empower citizens actively to participate in urban governance; and to generate improvements to their communities and neighborhoods.

e. **Assembly/Manufacturing Hub (For Nigerian Market and for Export)**

   a. Compact Fluorescent and LED light bulbs;
   
   b. Solar panels, Inverters, Batteries and Smart controls;
   
   c. Smart and Micro Grids;
   
   d. Miniaturized Windmills for household power supply;
   
   e. Solar Refrigerators; Air-conditioners; Fans; and Cookers.

f. **Establish Niger State Institute of Technology**

   This is to be established in collaboration with Korean Electric Power Corporation (KEPCO) Academy, South Korea for Training on all aspects of the sales, repair and be assembled on the site.

4. **EXPECTED OUTCOMES OF THE SMART CITY PROJECT**

   The development of Smart City, Suleja will enable the government:
   
   - To retrofit public and cultural buildings with energy efficient building materials and components in other cities of the state;
   
   - To Incentivize urban home owners to replace their Water Heaters with those powered by Solar and to introduce LED light bulbs etc.; and
   
   - To amend State Planning Law to institutionalize the use of low carbon building materials; planning housing projects that are compact, connected, socially inclusive and resilient; and to institutionalize the design of buildings, especially housing, based on Passive and Zero Energy concepts and Bioclimatic Architecture.
5. TECHNICAL AND FINANCIAL ASSISTANCE FROM SOUTH KOREAN GOVERNMENT

We have secured technical and financial assistance from the South Korean Government to prepare the Feasibility, Master Plan and design of the buildings. We will also be able to access concessional loan from Economic Development Cooperation Fund (EDCF) and Multilateral Development Banks (MDBs) to develop other aspects of the project. Meanwhile, we have embarked on the sensitization of stakeholders on the scope and potential benefits of our project.

6. OUR EXPECTATIONS FROM THE EXCHANGE VISIT

We are expecting:

- Very constructive comments/suggestions from both the attendees and experts from Korea and UN-Habitat;

- To meet with related Korean public and private sector institutions to discuss and, hopefully conclude, the partnership to establish an Assembly Plant for renewable energy systems and components in Suleja, as part of our Smart City project; and

- To meet with the officials of KEPCO to discuss the establishment of a Niger State Institute of Technology and hopefully, agree the way forward.
CONTINUE YOUR ENGAGEMENT WITH THE NUP AND SMART CITY STRATEGIES

As illustrated throughout the Think Piece Series, the local implementation of the Smart Cities Strategies requires the active engagement of national governments, local authorities, planning professionals and their associations, and civil society organizations for their adoption and use, an engagement that can take place through multiple actions working across different levels.

These actions include:

- Raise awareness and advocate for the improvement of urban and territorial planning, by localising the Smart City Strategies to the specific pilot country context, or enabling other types of advocacy platforms.

- Document and share inspiring practices or experiences from your country, whether it is a neighbourhood-level intervention or a transnational initiative.

- Support tool development for localising the SCS across different levels and sectors, by providing with a testing ground for their improvement, validation and diffusion.

- Build capacity of local planning constituents by hosting learning and/or training events in your city or country for representatives of the three pilot countries.

- Encourage the SCS mainstreaming in planning education to build local capacities on urban and territorial planning using the NUP and IG-UTP as a reference framework.

- Carry out a multi-stakeholder smart city strategies’ assessment to identify entry points and develop a road map for the improvement of the local planning system.

- Subscribe to the NUP/ smart cities as well as other related Newsletters by contacting our team at kibong.lee@un.org and mwamati@un.org to receive updates on activities and tools being developed by UN-Habitat’s smart city initiatives.

If you would like to know more about the mainstreaming of Smart cities in NUP, and take part in these or other activities towards more compact, socially inclusive, better connected, integrated, and climate resilient cities and territories, please contact our team at the Regional and Metropolitan Planning Unit in the Urban Planning and Design Branch of UN-Habitat at kibong.lee@un.org and mwamati@un.org.
Acknowledgements

Organised by:

UN-Habitat

FOR A BETTER URBAN FUTURE

LH
KOREA LAND & HOUSING CORPORATION

Sponsors:

MOLIT
Ministry of Land, Infrastructure and Transport