SESSION Two

New Town & Smart City in KOREA

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FACILITATED BY:

UN-HABITAT
FOR A BETTER URBAN FUTURE

Government of Republic of Korea
Embassy of Republic of Korea in Tehran
Korean Contractors Association in Iran

Ministry of Roads & Urban Development
Islamic Republic of Iran
### 1. Land & Urban

<table>
<thead>
<tr>
<th>‘1950</th>
<th>‘2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.jpg" alt="Image of child during Korean War" /></td>
<td><img src="image2.jpg" alt="Image of modern Seoul" /></td>
</tr>
</tbody>
</table>

**Korean War (1950~1953)**
- Urbanization Rate 21%
- GNI per capita $67
- Housing per 1000 people: 162 units (3.28M units / 20.19M people)

**Industrialization (1960~1980)**
- New town (1968~now)
  - *1988 Seoul Olympic
  - *1989~1996 1st Series of Newtown in Metropolitan Area
  - *2000~2015 2nd Series of Newtown in Metropolitan Area

**‘2015**
- Urbanization Rate 92%
- GNI per capita $28,000
- Housing per 1000 people: 364 units (16.2M units / 51.07M people)
## 2. Newtown Promotion

| **Industrialization** | Ulsan (shipmaking & automobile, 1962)  
|                       | Pohang (steel manufacture, 1968)  
|                       | Gumi (textile, 1973)  
|                       | Changwon (machinery, 1977)  
|                       | Yeocheon (chemistry, 1982)  
| **Urbanization**      | Seongnam (1968), Ansan (1977)  
|                       | Mokdong (1983)/Sanggye (1986) in SEOUL  
|                       | 1st Series Newtown in Metropolitan Area (1989~1996)  
|                       | 2nd Series Newtown in Metropolitan Area (2002~2015)  
| **Balanced Development** | Daeduck *(1974)*  
|                       | Gwacheon (1984)  
|                       | Multi-functional Administrative City; Sejong (2005~2030)  
|                       | 10 Innovation Cities (2005~2015)  
|                       | Local New Administrative Cities (Jeonnam, Gyongbuk, Chungnam, Gyonggi) (2003~2020)  
|                       | 6 Enterprise Cities **(2005~)**  
|                       | 8 Free Economic Zone; Incheon, Gwangyang, ... (2003~)  

* research-oriented city  
** enterprise city has been implemented to expand local economic independence and investment in Korea by companies through urban development using private sector capital.
2. Newtown Promotion

- To distribute the industrial functions of the metropolitan area
- Massive provision of housing in SEOUL

1960’s
- Heavy chemical industrial complex development
- To share urban function of SEOUL

1970’s
- Light industrial complex development
- To solve the over-population problem in SEOUL

1980’s
- Newtown with complex functions (administration, innovation, IT, eco-friendly, etc.)

1990’s
- High-tech industrial complex development
- Massive provision of Housing in Metropolitan area

2000’s

Purpose of Newtown Development (by period)
2. Newtown Promotion

1st Series Newtown in Metropolitan Area for housing provision
### Industrialization

- **Industrial Sites and Development Act (1990)**
- Act on Special Cases Concerning the Simplification of Authorization and Permission Procedures for Industrial Complexes (2008)
- Balanced Regional Development and Support for Local Small and Medium Enterprises Act (1994)

### Urbanization

- **Housing Site Development Promotion Act (1980)**
- Housing Construction Promotion Act (1973)
- Act on Acquisition of and Compensation for Land, etc. for Public Works (2002)

### Balanced Development

- Special Act on the Construction of **Multi-functional Administrative City in Yeongi and Gongju as Follow-up Measures for the New Administrative Capital** (2005)
- Special Act on the Construction and Support of **Innovation City according to the Transfer of Government Offices to Regional Locations** (2007)
- Act on Designation and Management of **Free Economic Zones** (2002)

*Planning Standards for Sustainable Newtown (2005)*
### The Main Contents of ‘Housing Site Development Promotion Act’

<table>
<thead>
<tr>
<th>Classification</th>
<th>Key Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>To acquire, develop, and supply housing sites</td>
</tr>
<tr>
<td>Entities</td>
<td>The state, local government, or LH designated by the Ministry of Land, Transportation, and Maritime Affairs</td>
</tr>
<tr>
<td>Target Area</td>
<td>District scheduled for housing site development (zones designated from among urban planning areas and surrounding regions for collective housing site development pursuant to housing site supply plans)</td>
</tr>
<tr>
<td>Use</td>
<td>Housing site (sites for housing construction and public facilities)</td>
</tr>
<tr>
<td>Project Scale</td>
<td>No explicit ground rules</td>
</tr>
<tr>
<td>Land Acquisition</td>
<td>Whole purchase method or exceptional replotting method</td>
</tr>
</tbody>
</table>
4. LH (Korea Land & Housing Corporation)

**CENTER**
5 Divisions, 2 Departments, 1 Research Institute, 48 Offices

**LOCAL**
12 regional divisions, 11 business divisions
12 branches

**FINANCIAL**
Asset: 167.7 trillion won, Liabilities: 138.1 trillion won
Equity: 29.6 trillion won

**WORKFORCE**
6,684 employees
4. LH (Korea Land & Housing Corporation)

KNHC: Construction, Supply and Management of Housing
Established in July, 1962

KLC: Development of Residential Land, New Towns and Industrial Complexes
Established in April, 1975

Residential Welfare

Balanced Development of National Land
Established in October, 2009

<table>
<thead>
<tr>
<th>Standard &amp; Poor's Ratings Services</th>
<th>Moody's Investors Service</th>
<th>Fitch Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+ (Stable)</td>
<td>A1 (Stable)</td>
<td>AA- (Stable)</td>
</tr>
<tr>
<td>A+ (Stable)</td>
<td>Aa3 (Stable)</td>
<td>AA- (Stable)</td>
</tr>
</tbody>
</table>

1. Improvement of National Housing Welfare
2. Promote Efficient Use of National Land
3. Contribute to Economic Development
Urban Land Development 1,068㎢ (about 6% of Korea’s urban areas)
Housing sites and Newtown area 650㎢ (larger than the area of SEOUL)
1st Series of Newtown in Metropolitan Area, 2nd Series of Newtown in Metropolitan Area
9 out of 10 Innovation Cities, Multi-functional Administrative City; Sejong(2005~2030), Free Economic Zone
4. LH (Korea Land & Housing Corporation)

Public Housing Supply 2.5M units (15% of Korea’s housing)
- Rental Housing 1.3M units, Houses for Sale 1.2M units

Rental for citizens
660,000

Permanent rental
370,000

Public rental
220,000
4. LH (Korea Land & Housing Corporation)

16 sectors of Newtowns in the Metropolitan Area (1\textsuperscript{st} 5, 2\textsuperscript{nd} 11)
Public Housing Supply 2.5M units (15% of Korea’s housing)
- 1\textsuperscript{st} : 1989~1996, 5000$/GNI per capita
- 2\textsuperscript{nd} : 2000~2015, 16000$/GNI per capita, sustainable & self-sufficient, smart city
<table>
<thead>
<tr>
<th>Category</th>
<th>Total</th>
<th>Bun-dang</th>
<th>Il-san</th>
<th>Pyongchon</th>
<th>Sanbon</th>
<th>Jungdong</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area (km²)</td>
<td>50.1</td>
<td>19.6</td>
<td>15.7</td>
<td>5.1</td>
<td>4.2</td>
<td>5.5</td>
</tr>
<tr>
<td>Household (thousand)</td>
<td>292.0</td>
<td>94.6</td>
<td>69.0</td>
<td>42.0</td>
<td>42.0</td>
<td>42.4</td>
</tr>
<tr>
<td>Population (thousand)</td>
<td>1,168</td>
<td>390</td>
<td>276</td>
<td>168</td>
<td>168</td>
<td>166</td>
</tr>
<tr>
<td>Green areas (%)</td>
<td>19.0</td>
<td>19.4</td>
<td>23.5</td>
<td>15.7</td>
<td>15.4</td>
<td>10.7</td>
</tr>
<tr>
<td>Costs (US$, million)</td>
<td>9,753</td>
<td>3,875</td>
<td>2,478</td>
<td>1,099</td>
<td>587</td>
<td>1,714</td>
</tr>
</tbody>
</table>

1st Series Newtown in Metropolitan Area
5. Implications of Newtown

Exclusive organization dealing with new town development
(public corporation ; LH)

Public corporation related to SOC

Private corporation

Building
- Housing
- Office
- Commercial
- Hospital
- School

Infrastructure
- Road
- Railway
- Water supply & Sewage
- Electricity
- Telecommunication
- Energy

Environment
- Park
- Green Space
- Waste disposal facility
- Sewage disposal facility
- Open space

Socio-Economy
- To facilitate national/regional economy
- Social mix
- To vitalize the community

To present a comprehensive solution that can cope with rapid urbanization
### 5. Implications of Newtown

<table>
<thead>
<tr>
<th>Success Factors</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Strong and consistent policy</td>
<td>➢ Land speculation around the site</td>
</tr>
<tr>
<td>➢ High quality to attract people</td>
<td>➢ Encroachment on farmland</td>
</tr>
<tr>
<td>➢ Establishment of legal framework</td>
<td>➢ Resistance from residents</td>
</tr>
<tr>
<td>➢ Autonomous implementing body (LH)</td>
<td></td>
</tr>
<tr>
<td>➢ Based on profitability (Feasibility)</td>
<td></td>
</tr>
</tbody>
</table>
6. Smart City in Korea

“Smart City”

(Wikipedia) A Smart City uses information and communication technologies (ICT) to enhance quality, performance and interactivity of urban services, to reduce costs and resource consumption and to improve contact between citizens and government.

(Korea) U-City has been promoted in Korea as Smart City (U; Ubiquitous)

Enacted Act on the Construction, etc. of Ubiquitous Cities (2008.3.28)

U-City law was enacted by Ministry of Land, Transport and Maritime Affairs after cooperation with relevant ministries and public opinion investigation

('07.12 submitted to National Assembly ⇒ '08.3.28 proclaimed the law)

Established Smart City National Plan [1st (09.11), 2nd (13.11)]

Established Smart City National Plan to suggest long-term blue print and direction of improvement

National R&D (2007.08~2019.6)

1st R&D : U-Eco City(2007~2013, Total Research Expense $85M, Foundation Technologies such as Integrated platform, etc.)

2nd R&D : Advanced U-City R&D Consortium(2013~2019, Total Research Expense $20M, U-City Expansion such as Construction of Test Bed, etc.)
6. Smart City in Korea

Smart City: Basic urban infrastructures are being provided and public services

3 Factors: High speed communications networks + Integrated platforms 
+ Urban information centers

- Traffic/Safety
  - Traffic Information System
  - Station Media Board
  - Vehicle Number Reassurance service
  - BIS, Real-time Signal Control

- Public Facilities
  - Urban Infrastructure
    - Public Facilities
    - Underground Facilities

- U-Parking
  - Streetlight Management

- Wired & Wireless Portal
  - Media Board

- U-Civil Service
  - Public Area Security
    - Pollution Information
    - Disaster Prevention, Disaster Monitoring

- Public Utility Management
  - Weather Information
  - Water Leakage Management

- Urban Infrastructure
  - Public Facilities

- Integrated Operation Platform

- Public Information Network

- Private Information Network

- Private Service
  - Sports Facility
  - Culture/Entertainment
  - Restaurant
  - Traffic/Police Security
  - Medical Facility
  - Shop, Business

- Public Service (infrastructure)
  - School
  - Academy
  - English Town
  - Security Check

- U-City Tour
- U-Communication
- U-Remote Video Health Care
- U-Intelligent Walking Guide
- U-Learning
- U-Fitness
  

6. Smart City in Korea

<table>
<thead>
<tr>
<th>Pilot City</th>
<th>U-City Plan</th>
<th>Foundation Construction Work</th>
<th>Innovation City</th>
<th>Etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seoul, Incheon, etc (15 Cities)</td>
<td>Busan, Wonju, etc. (25 Cities)</td>
<td>Gangneung, Gwangju, etc. (10 Cities)</td>
<td>Gwangju, Daegu, etc. (10 Cities)</td>
<td>Daejun, Sejong, etc. (14 Cities)</td>
</tr>
</tbody>
</table>

Gyeonggi Province (16)
- Test City
  - Ansan, Namyangju
  - U-City Infrastructure Initiative
    - Uijeongbu
- Ubiquitous City Plan
  - Yangju, Hwaseong, Dongducheon, Namyangju, Uijeongbu, Gimpo, Suwon, Sungnam, Paju, Gwangyang
- Other U-Cities
  - Pyeongtaek, Paju, Hwaseong, Yangju, Yangju, Goyang, Dangjin

Cheongcheongbuk Province (8)
- U-City Infrastructure Initiative
  - Jacheon, Chirung, Gyeongju
- Ubiquitous City Plan
  - Cheongju
- Other U-Cities
  - Cheongju, Asan, Hongseong, Guseok

Jeolla Province (5)
- Test City
  - Naju, Jeonju, Yeosu
- Ubiquitous City Plan
  - Yeosu
- Other U-Cities
  - Gimje, Jeongeup, Muan

The Rate of Smart City Promotion & Plan Application
(NEWTOWN & EXISTING CITY)

- Metropolitan Area: 33 Municipalities
- Non-Metropolitan Area: 18 Municipalities
- Total: 51 Municipalities

The Rate of Smart City Promotion & Plan Application
(METROPOLITAN & NON-METROPOLITAN AREA)

- Metropolitan Area: 100% (33 Municipalities)
- Non-Metropolitan Area: 55% (18 Municipalities)
- Total: 88% (51 Municipalities)
Smart City construction costs about $13.6 Billion (330M m²)
Approximately 1%~2% of total urban construction costs
The cost of maintaining smart city is about 10% of construction cost

Expenses U-City Establishment (330 Mm²)

<table>
<thead>
<tr>
<th>Metropolitan Area</th>
<th>Non-Metropolitan Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cost</td>
<td>$1237.6B</td>
</tr>
<tr>
<td>U-City construction cost</td>
<td>$13.6B 1.07%</td>
</tr>
<tr>
<td>Software, 52%</td>
<td>$1074.5B</td>
</tr>
<tr>
<td>Design, etc, 6%</td>
<td>$13.6B 1.51%</td>
</tr>
<tr>
<td>IT construction, 42%</td>
<td>$13.6B</td>
</tr>
</tbody>
</table>

*Maintenance Cost is about $1.7B ~ 3.4B per year (about 10% of construction cost)
7. Smart City by LH

Sejong Smart City
- Multifunctional and Administrative
- 73.14㎢
- 0.5 M Population

Chungra Smart City
- Free Economy Zone
- 7.27㎢
- 0.1 M Population

Dongtan Smart City
- New Town
- 24.01㎢
- 0.3 M Population

Pangyo Smart City
- New Town
- 8.93㎢
- 0.1 M Population
7. Smart City by LH

Sejong Smart City

Chungra Smart City

Dongtan Smart City

Pangyo Smart City
8. Global Cooperation with Kuwait

- **Project**: South Saad Al Abdullah Newtown
- **Location**: 30 km west from Kuwait city center
- **Size/units**: 59㎢, 25000 housing units
- **Geography**: Desert
- **Infrastructure (expected)**:
  - Government to build highways, sewerage, electricity, waterworks
  - GCC railway, Metro railway (connected to CBD)
  - Ring road (no.7, no.8)

  - Excellence in location among new national planning cities
  - Kuwait Government proposes a joint project
  - LH receives master plan service order (MOU)

**Vision**

1. Construction of Newtown and Smart city
2. Participate in Smart City operation management
3. Creating new business in Smart City
Korea-India Special Strategic Partnership: Participate in India Smart City Project based on intergovernmental cooperation

- 2015.5.18, EDCF($900M) and Export Credit($7,600M) were supported for India development project

LH, Participate in investment-based India Smart Cities project

- LH(Korea) and NBCC(India) signed MOU (2015.8)
- LH(Korea) and MSRDC(India) signed MOU (2015.9)
* Participating in Smart City construction pilot projects in India (Delhi, Mumbai) has been considered, and Establishment of local subsidiary in India is being prepared
LH signed a MOU agreement with UN-Habitat promising mutual cooperation on Affordable Housing, Newtown, and Smart Cities. (August, 2015)
Currently, a joint research for developing national Newtown policy guide is taking place. (2016~2017)

We are looking forward to Iran’s interest and participation for this research. A more desirable result can be sought should the international society gather global knowledge on Newtown policies.

Iran is a key nation of the Middle East. We expect that sustainable Newtown development would be promoted in Iran for economic development.

We wish that an opportunity where Iranian government, UN-Habitat, and LH to cooperate will rise for Iran’s Newtowns and Smart Cities.
THANK YOU FOR YOUR ATTENTION