National Level Strategy for Infrastructure Development in Japan

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Changes in GDP per Capita in Japan

- **First hurdle ($1,000)**: 1960
- **Second hurdle ($5,000)**: 1970
- **Third hurdle ($15,000)**: 1980
- **Fourth hurdle ($25,000)**: 1990
- **2000 - Maturation**: 2010 ($43,150)

**Steady growth**

- **1960 - 1980**: Rapid economic growth
- **1980 - 2000**: Maturation
### Changes in Main Challenges and Policies

**1960 - Rapid economic growth**

- Shortage of residences due to population concentration in urban areas.
- Shortage of infrastructure (electricity, water, etc.) due to rapid urbanization.
- Emergence of environmental problems, such as air/water pollution.

**1980 - Steady growth**

- Addressing needs for a high-quality housing environment, accompanied with improved living standard.
- Escalation of traffic jams due to progressive motorization.
- Rise of low-use/unused land due to changes in the industrial structure.
- Increased awareness of environmental issues.

**2000 - Maturation**

- Addressing needs for urban development with less environmental load.
- Decreased vitality in central urban areas, due to low birth rate, population aging, and population decline.
- Utilization of the aging housing stock.

### Policies

1. Decentralization of urban function
2. Provision of a large amount of residences
3. Legal system development for materializing the urban policies
4. Improvement of housing performance level
5. Enhancement of public transportation
6. Development of Brown Fields
7. Effort for resource circulation
8. Implementation of a Smart City
9. Town development for “compact city plus network”
10. Revitalization of the housing stock
### National Spatial Development Plans of Japan

<table>
<thead>
<tr>
<th>Date of Approval</th>
<th>Target Year</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st</strong></td>
<td>1970</td>
<td>Harmonized development between the regions</td>
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<tr>
<td></td>
<td></td>
<td>Creation of regional industrial hubs</td>
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<tr>
<td><strong>2nd</strong></td>
<td>1985</td>
<td>Creation of a better environment</td>
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<tr>
<td></td>
<td></td>
<td>Designing megaproject</td>
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<td><strong>3rd</strong></td>
<td>Around 1987</td>
<td>Comprehensive development of environment for human settlements</td>
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<td>Designing functional regions for living</td>
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<td><strong>4th</strong></td>
<td>Around 2000</td>
<td>Development of a polycentric territorial structure</td>
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<td>Creating interactive networks among Region</td>
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<tr>
<td><strong>5th</strong></td>
<td>2010-2015</td>
<td>Building the foundation for a multi-axial structure of the territory</td>
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<td></td>
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<td>Exchanging participative and collaborative practices</td>
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<td><strong>3rd</strong></td>
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<td>1960’s</td>
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<td>1978</td>
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<tr>
<td><strong>Highway</strong></td>
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<tr>
<td><strong>Shinkansen</strong></td>
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<tr>
<td><strong>Airports</strong></td>
</tr>
<tr>
<td>(with runway more than 2,000 meters long)</td>
</tr>
</tbody>
</table>

**1965**

**2012**
Nine plans were formulated by project area: Setting the project amount by each plan

<table>
<thead>
<tr>
<th>Roads</th>
<th>Traffic Safety facilities</th>
<th>Airports</th>
<th>Ports/ Harbors</th>
<th>Urban parks</th>
<th>Sewage</th>
<th>Flood management</th>
<th>Steep slope</th>
<th>Coasts</th>
</tr>
</thead>
</table>

Unified into 1 infrastructure development plan

**Priority Plan for Infrastructure Development**
*(Act on Priority Plan for Infrastructure Development  Act No.20 of 2003)*

- **1st Priority Plan** (from FY2003 to FY2007),
- **2nd Priority Plan** (from FY2008 to FY2012),
- **3rd Priority Plan** (from FY2012 to FY2016),
- **4th Priority Plan** (from FY2015 to FY2020)

✓ Major planning matters

- Priority objectives regarding the implementation of the infrastructure development projects during the period for the plan
- Overview of the infrastructure development projects that should be implemented in an intensive, effective and efficient manner during the period for the plan in order to accomplish the priority objectives.
- Measures for implementing the infrastructure development projects in an intensive, effective and efficient manner, etc.
1. Four structural issues faced by the infrastructure development

- Vulnerability of land (pressing issues for massive earthquakes and severe weather disasters)
- Rapid aging of infrastructure
- Impoverished local economies due to decreased population
- Intensified international economic competition

2. Basic policies toward the sustainable infrastructure development

(1) Strategic infrastructure management aiming at maximizing the Stock Effects of the infrastructure

1) Strategic Maintenance including integration and reorganization

2) Thorough and effective use of the existing facilities (smart use)

3) Select and focus on the projects with high Stock Effects

- Clarification of the time line
- Contribution to both economic revival and fiscal consolidation
- Proactive approach to PPP/PFI

(2) Securing and training skilled construction engineers and technicians to maintain the sites of the infrastructure development based on the priority plan

(3) Securing stable and sustainable public investment for appropriate implementation of the priority plan
The Stock Effects of infrastructure are divided into the following three effects:

A) **Safety and security effect**
B) **Effect of life quality improvement**
C) **Effect of improved productivity**

**Flow Effects**
- Creation of productive activities
- Stimulation of employment
- Expansion of consumption by income increases

**Stock Effects**
- **Safety and security effect**
  - Earthquake-proof performance improvement
  - Reduction of flood damage, etc.
- **Effect of life quality improvement**
  - Improvement of living conditions
  - Amenity enhancement, etc.
- **Effect of improved productivity**
  - Reduction of travel time
  - Reduction of transportation cost
  - Increase of freight handling volume, etc.
Example of Stock Effect Ken-O (Metropolitan Inter-City) Expressway

<i>Location example</i>

- Logisquare Kuki
- Total floor space: approx. 43,800 m²
- Completion: to be completed in summer 2016

In the sections opened earlier in the Ken-O Expressway, the value of manufactured goods shipped has increased.

Growth rate of value of manufactured goods shipped:
- Hamura City 166%
- Iruma City 137%
- Hidaka City 124%
- Hinodecho 120%
- Saitama Prefecture + Tokyo Metropolis 103%

Number of newly established corporations
- Established
- To be established

Established: Total 1~2
To be established: Total 3~4
5 or more

Trend of land price in the surrounding area of the Ken-O Expressway (Ebina 9-1, Kuki 9-1)

- Average land price of the industrial lands in Kanagawa Prefecture
- Average land price of the industrial lands in Saitama Prefecture

Opening between Ebina and Sagamihara-Aikawa in March 2013
Opening between Sagamihara-Aikawa and Takaosan in June 2014

Source: Land Market Value Publication (MLIT)
Japan’s future picture as national spatial development target

1. A country where people can feel safe and affluent
2. A vigorous country sustaining economic growth
3. A country exerting a strong presence in the international community

Basic National Land Concept


Multi-layered, resilient “compact and networked structure” for developing national land promoting interaction-led regional revitalization

- Correcting Excess Concentration in Tokyo and Positioning the Tokyo Metropolitan Region
- Symbiosis between Urban and Rural Communities through Mutual Contributions

“Interaction”: Resources and cooperation

- Rich agriculture, forestry and fisheries resources
- Knowledge accumulation
- ICT diffusion in agriculture, forestry and fisheries
- Innovation through industry-academia cooperation
- <Cooperation among primary, secondary and tertiary industries>
- <Agriculture-commerce-industry cooperation>
- Manufacturing technologies / commercial functions
- Interaction as Source of Japan's Vitality
International Urban Cities in Southwestern Metropolitan Area

<table>
<thead>
<tr>
<th>Cities</th>
<th>Populations (thousand people)</th>
</tr>
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<tbody>
<tr>
<td>Osaka</td>
<td>2.7 million</td>
</tr>
<tr>
<td>Nagoya</td>
<td>2.3 million</td>
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<tr>
<td>Ome</td>
<td>137</td>
</tr>
<tr>
<td>Mizuho</td>
<td>34</td>
</tr>
<tr>
<td>Tachikawa</td>
<td>179</td>
</tr>
<tr>
<td>Hachioji</td>
<td>563</td>
</tr>
<tr>
<td>Hino</td>
<td>183</td>
</tr>
<tr>
<td>Tama</td>
<td>148</td>
</tr>
<tr>
<td>Machida</td>
<td>427</td>
</tr>
<tr>
<td>Sagamihara</td>
<td>724</td>
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<tr>
<td>Atsugi</td>
<td>225</td>
</tr>
<tr>
<td>Ebina</td>
<td>129</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>about 2.8 million</strong> people</td>
</tr>
</tbody>
</table>

- New Station of Linear Chuo Shinkansen (will open in 2027)
- Ken-o Expressway between Tokyo Pref. and Kanagawa Pref. was opened in 2014
- Port of Yokohama
- Haneda Airport
- Shinjuku Sta.
- Shinagawa Sta.
- Tokyo Metropolitan Prefecture
- Kanagawa Prefecture
- Tokaido Shinkansen
- Local railways
- Expressway
- colleges
- public research institutions
The G7 Ministers of Transport and European Commissioner for Transport adopted the following Declaration regarding Infrastructure.

**Basic Strategy for Developing New Transport Infrastructure and Renovating Aging and Deteriorated Transport Infrastructure**

(Excerpt)

- We, the G7 Ministers of Transport and European Commissioner for Transport, confirm that the “G7 Ise-Shima Principles for Promoting Quality Infrastructure Investment” endorsed at G7 Ise-Shima Summit, provides sound guiding principles for investment in transport infrastructure.

- With regard to new projects, we recognize the importance of planned, continuous and sufficient future investment focusing on so-called “stock effects”, including improved safety, disaster risk reduction impacts, better environmental performance, more sustainable transport and mid- to long-term positive impacts on economic growth, while increasing private investment, tourism and employment. We also recognize the importance of properly understanding the diversified and mid- to long-term stock effects on the economy, the environment and the society to lead to further improvements in transport infrastructure.
Infrastructure Demand Around the World

**Around the World (Present Demand)**
- 2300 billion US dollar/year
- Source: OECD (2011)

**Around the World (Future Demand)**
- 5.7 trillion US dollar/year by 2030

**Asia**
- 80 billion US dollar/year
- Source: ADB (2009)

**Africa**
- 68 billion US dollar/year
- Source: AfDB (2016)
Infrastructure Demand and Investment Around the World

1 Billion US Dollars (2011)

Source: Fernanda Ruiz-Nunez and Zichao Wei (2015)
“Infrastructure Investment Demands in Emerging Markets and Developing Economies”