Strategies for Japan’s Sustainable Development

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Population

• The Biggest problem for the Sustainable Development of Japan is unsustainability of its population.

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>128 million</td>
</tr>
<tr>
<td>2030</td>
<td>117 million</td>
</tr>
<tr>
<td>2048</td>
<td>99 million</td>
</tr>
<tr>
<td>2060</td>
<td>87 million</td>
</tr>
<tr>
<td>2100</td>
<td>50 million</td>
</tr>
</tbody>
</table>
41 million in 50 years means..

Every year the City of

San Francisco with population 0.81 million
Marseille 0.85 m

is disappearing in Japan.
Population

• Population of Productive Age (15y.o. -64y.o.)
  2010  82 million
  2060  44 million (-38m 45.9%)

• Population of Senior Age (65y.o.-)
  2010  29 million
  2060  35 million (+5m 17.5%)
Population

- Senior Age/Productive Age Rate

<table>
<thead>
<tr>
<th>Year</th>
<th>Senior Age Rate</th>
<th>Productive Age Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>10.2%</td>
<td>1 to 10</td>
</tr>
<tr>
<td>1994</td>
<td>20.2%</td>
<td>1 to 5</td>
</tr>
<tr>
<td>2008</td>
<td>33.6%</td>
<td>1 to 3</td>
</tr>
<tr>
<td>2023</td>
<td>50.2%</td>
<td>1 to 2</td>
</tr>
<tr>
<td>2040</td>
<td>67.2%</td>
<td>1 to 1.5</td>
</tr>
<tr>
<td>2072</td>
<td>85.7%</td>
<td>Practically 1 to 1</td>
</tr>
</tbody>
</table>
Life Expectancy

- 2010
  - Male: 79.64 Years Old
  - Female: 86.39 Years Old

- 2060
  - Male: 84.19 Years Old
  - Female: 90.93 Years Old
Future Labor Market in Japan

Changes in Labor Market from 2010 to 2030

Labor Demand

- Nursing care/Welfare: +1 million
- Manufacturing: -3 million

Labor Supply

- Women Empowerment: +1.5 million

Total Labor Supply: -10 million

Total Labor Shortage: 6.5 million
How can we make up 6.5 million?

- Increase in Birth Rate?
  - NOT Likely
  - 1.39 in 2010
  - 1.33 in 2024
  - Stable at 1.35 in the long run?
  - Changes in social system
How can we make up 6.5 million?

• Immigration:

Can Japan accept 6.5 million?

— What makes Japan Japan?

  • NOT the Blood of the Yamato Tribe
  • The Imperial System and the Japanese Language

— No more loop holes i.e. Nikkeijin & Trainees

  • Work permit based on the Japanese language capability
Agriculture

• Self-sustainability Rate Less than 40%

• Competitiveness of Rice Production
Lies about Calorie-based Self-Sustainability

Calorie-based Self-Sustainability =

\[
\frac{(\text{Domestic Food Production})}{(\text{Domestic Food Production}) + (\text{Import}) - (\text{Export})}
\]
Lies about Calorie-based Self-Sustainability

(Domestic Food Production) + (Import) - (Export) = 2600Kcal/day / person

Average calorie consumption in reality: 1900Kcal

1000Kcal
1900Kcal

Calorie-based self-sustainability rate is already 53%!
Rice Production

• Less people and getting older, eating less rice

• 2.4 million hectares of Rice Field in Japan
• 1.6 million ha is necessary for enough rice for domestic consumption
• 0.8 million ha is excess

Less and less rice field will be necessary in future
Wasted Land

• Gen. MacArthur liberated 1.94 million hectares of rice field from land owners

• Since then, 2.5 million hectares of rice field have been left ruined
Unit Productivity

• To stabilize the rice price, the farmers have faced strict production limit
• If unit productivity increases, the farmers will be forced to cultivate less land
• Unit productivity of rice farmers in Japan has been lagging
Future of Rice Production in Japan

• Shrinking domestic market
• Exporting to China as high quality & safe rice
• Increase in unit production and cultivating more land to increase volume and sales

• Ministry of Agriculture & Fishery spends more budget on publicity campaign on low self-sustainability than export promotion
Future of Nuclear Reactors in Japan

Decommission after 40 yrs
Dangerous Reactors Shut-down & Decommission after 40 yrs
Japan’s Energy Future

- Renewables
- Natural Gas
- Oil & Coal
- Nuclear
- Energy-Saving

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Strategies for Japan’s Sustainable Development
18