Rebuilding Japan after the Great East Japan Earthquake:
The Situation Today, Issues for the Future, and Initiatives by DBJ

January 21, 2013

Development Bank of Japan
Tohoku Revival Reinforcement Office,
Tohoku Branch

Almost 2 Years Since March 2011
### The Affected Areas Today ①

#### Figure 1: Estimated Damage to Capital Stock (DBJ figures issued April 28, 2011)

<table>
<thead>
<tr>
<th>Prefecture</th>
<th>Total Capital Damage</th>
<th>Damage Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iwate Pref.</td>
<td>140.0 tln. yen</td>
<td>3.3%</td>
</tr>
<tr>
<td>Miyagi Pref.</td>
<td>69.6 tln. yen</td>
<td>3.6%</td>
</tr>
<tr>
<td>Fukushima Pref.</td>
<td>208.3 tln. yen</td>
<td>7.9%</td>
</tr>
<tr>
<td>Ibaraki Pref.</td>
<td>140.0 tln. yen</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

#### Notes:
1. “Coastal” indicates cities, towns and villages having a shoreline; “inland” indicates other cities, towns and villages.
2. Estimates of stock and damage are calculated on a replacement-cost basis.
3. Damage resulting from the Fukushima No. 1 power plant accident is not included in these estimates.

#### Table: Estimated Capital Stock and Damage

<table>
<thead>
<tr>
<th>Prefecture</th>
<th>Inland Capital Damage</th>
<th>Coastal Capital Damage</th>
<th>Total Capital Damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iwate Pref.</td>
<td>26.4 tln. yen</td>
<td>7.4 tln. yen</td>
<td>33.8 tln. yen</td>
</tr>
<tr>
<td>Miyagi Pref.</td>
<td>31.4 tln. yen</td>
<td>11.9 tln. yen</td>
<td>43.3 tln. yen</td>
</tr>
<tr>
<td>Fukushima Pref.</td>
<td>34.3 tln. yen</td>
<td>15.9 tln. yen</td>
<td>50.2 tln. yen</td>
</tr>
<tr>
<td>Ibaraki Pref.</td>
<td>47.8 tln. yen</td>
<td>23.2 tln. yen</td>
<td>71.0 tln. yen</td>
</tr>
</tbody>
</table>

### The Affected Areas Today ②

#### Figure 2: Status of Disaster Waste Disposal

- 37 coastal communities in Iwate, Miyagi and Fukushima prefectures.
- As of October 31, 2012

#### Table: Disaster Waste Processing and Disposal

<table>
<thead>
<tr>
<th>Type</th>
<th>Est. Amount (tln.)</th>
<th>Amount Removed (tln.)</th>
<th>Removal Rate (B/A)</th>
<th>Amount Processed/Disposed (tln.)</th>
<th>Process/Disposal Ratio (C/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disaster waste</td>
<td>18,020,000</td>
<td>15,166,000</td>
<td>84%</td>
<td>2,854,000</td>
<td>15%</td>
</tr>
<tr>
<td>Tsunami sediment</td>
<td>9,560,000</td>
<td>5,555,000</td>
<td>58%</td>
<td>3,905,000</td>
<td>41%</td>
</tr>
</tbody>
</table>

Source: Reconstruction Agency Website

#### Figure 3: Jobs-to-Applicants Ratio

- As of October 31
- Times: 0.5 to 1.25
- Quake: 0.6 to 1.25
- All Japan: 0.6 to 1.25

#### Figure 4: Mining and Industrial Production Indexes, by Sector (top six sectors)

- As of November 1, 2012
- Indexes: 100 (pre-disaster)

#### Figure 5: Mining and Industrial Production Trends in Tohoku, by Sector (top six sectors)

- Times: 0.6 to 1.25
- Quake: 0.6 to 1.25
- All Japan: 0.6 to 1.25

Source: Reconstruction Agency Website
### The Affected Areas Today

#### Figure 6: Population Trends in Four Affected Prefectures

<table>
<thead>
<tr>
<th>Prefecture</th>
<th>1st day of each month: in thousand persons.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11/3</td>
</tr>
<tr>
<td>Ibaraki</td>
<td>2,946</td>
</tr>
<tr>
<td>Miyagi</td>
<td>1,327</td>
</tr>
<tr>
<td>Fukushima</td>
<td>2,061</td>
</tr>
<tr>
<td>Ibaraki</td>
<td>2,946</td>
</tr>
<tr>
<td></td>
<td>11/9</td>
</tr>
<tr>
<td>Ibaraki</td>
<td>2,957</td>
</tr>
<tr>
<td>Miyagi</td>
<td>1,313</td>
</tr>
<tr>
<td>Fukushima</td>
<td>2,324</td>
</tr>
<tr>
<td>Ibaraki</td>
<td>2,957</td>
</tr>
<tr>
<td></td>
<td>12/3</td>
</tr>
<tr>
<td>Ibaraki</td>
<td>2,957</td>
</tr>
<tr>
<td>Miyagi</td>
<td>1,992</td>
</tr>
<tr>
<td>Fukushima</td>
<td>2,324</td>
</tr>
<tr>
<td>Ibaraki</td>
<td>2,957</td>
</tr>
</tbody>
</table>

Source: Population Trends, Basic Resident Register (Ministry of Internal Affairs and Communications)

#### Figure 7: Estimated Excess Inward and Outward Migration in Four Affected Prefectures

<table>
<thead>
<tr>
<th>Prefecture</th>
<th>Inward</th>
<th>Outward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibaraki</td>
<td>2,957</td>
<td>2,957</td>
</tr>
<tr>
<td>Miyagi</td>
<td>1,313</td>
<td>1,313</td>
</tr>
<tr>
<td>Fukushima</td>
<td>2,324</td>
<td>2,324</td>
</tr>
<tr>
<td>Ibaraki</td>
<td>2,957</td>
<td>2,957</td>
</tr>
</tbody>
</table>

Source: Population Trends, Basic Resident Register (Ministry of Internal Affairs and Communications)

---

### After the Great Hanshin Earthquake of 1995 (Reference)

#### Figure 8: Changes in Monthly Mining & Industrial Production Indexes Before and After Hanshin and Tohoku Earthquakes

#### Figure 9: Comparison of Real GDP for All Japan and Hyogo Prefecture (1994 = 1)

#### Figure 10: Changes in Population: Hyogo Prefecture

Note: "Migration caused population change" includes other migrants as well as those who have made notification on a residence certificate. Since some calculations are for some years may not agree with the total population due to the effect of the Great Hanshin Earthquake.

Prepared by DBJ based on National Accounts, Prefectural Accounts (Ministry of Internal Affairs and Communications)

DBJ 日本政策投資銀行
Tasks and Problems for the Affected Areas

### Inland areas
- Regain orders lost by core industries
- Restart damaged facilities, public and private; earthquake-proof existing areas
- Prevent rumors through quick provision of accurate information

### Coastal Ibaraki Prefecture
- Publicize accurate information so as to minimize rumors in the fishing industry
- Take prompt action to dispel rumors
- Conduct tourism campaigns and other events; take measures to attract visitors from outside as well as inside the region
- Rebuild medical facilities in coastal areas

### Tourism
- Take prompt action to dispel rumors
- Conduct tourism campaigns and other events; take measures to attract visitors from outside as well as inside the region

### Health and welfare
- Establish support acceptance framework
- Determine needs of affected areas and match them with suitable support givers
- Introduce solar and other forms of alternative energy
- Shift energy control from supply side to demand side
- Introduce solar and other forms of alternative energy

### Energy
- Provide residents with health management and sustained follow-up care, especially in Fukushima Prefecture
- Address shortage of doctors, nurses and public health workers
- Rebuild medical facilities in coastal areas

### NPOs and volunteer groups
- Establish support acceptance framework
- Determine needs of affected areas and match them with suitable support givers
- Introduce solar and other forms of alternative energy

### Infrastructure and housing
- Secure stable living conditions for evacuees
- Address loss of healthcare facilities and healthcare workers
- Carry out decontamination and dispel rumors

### Coastal Iwate Prefecture
- Secure stable living conditions for evacuees
- Establish support acceptance framework
- Secure stable living conditions for evacuees
- Introduce solar and other forms of alternative energy

### Coastal Miyagi Prefecture
- Secure stable living conditions for evacuees
- Establish support acceptance framework
- Secure stable living conditions for evacuees
- Introduce solar and other forms of alternative energy

### Coastal Fukushima Prefecture
- Secure stable living conditions for evacuees
- Establish support acceptance framework
- Secure stable living conditions for evacuees
- Introduce solar and other forms of alternative energy

### Tasks and Problems for the Affected Areas

#### Public sector
- Shortage of local government staffers for huge rehabilitation and reconstruction efforts
- Difficulty of achieving resident consensus and land for new housing (due to lack of suitable land, etc.)
- Fiscal restraints on affected local governments; need for efficient use of national government measures and budgets
- Delayed progress of public reconstruction projects
- Limits to the applicability of existing policies to a disaster of unprecedented scale
- Need for a central body to control the promotion of broad-ranging reconstruction efforts
- Need to efficiently link companies, NPOs and other private groups to reconstruction efforts

#### Private sector
- Securing primary operators for new industrial reconstruction projects
- Restoring agriculture, fisheries, tourism etc.
- Revitalizing core manufacturing industries to promote reconstruction (e.g., by encouraging business with large firms in the auto industry)
- Securing adequate manpower in areas affected by disaster-related population drain
- Applying private-sector knowledge, technology and networks to the rebuilding of infrastructure
- Partnering with the public sector in building healthcare systems for disaster-affected residents
- Improving corporate disaster-prevention and BCM initiatives

---

**Keys to reconstruction:** Securing jobs in affected areas by maintaining and rebuilding industry
Supporting the rebuilding of communities
Broad-ranging cooperative action by the public and private sectors
Excerpts from the Report on Attitudes toward Visiting Japan after the 2011 Tohoku Earthquake and Tsunami ① (Reference)

The largest proportion of respondents—47 percent—stated that they "wished for Japan's quick recovery." Many, particularly in Malaysia, Thailand, Indonesia, and Hong Kong, responded that they "felt compassion for Japan." There were negative responses, however, including those from people who felt less assured of Japan's safety than they had before the quake. Clearly, more accurate and timely information must be provided if Japan is to regain the reputation for safety which was damaged by the earthquake and nuclear reactor accident.

Excerpts from the Report on Attitudes toward Visiting Japan after the 2011 Tohoku Earthquake and Tsunami ② (Reference)

Seventy percent of respondents stated they "would consider visiting Japan despite the earthquake" or "did not want to visit Japan right after the quake, but would consider it now," while only 30 percent said they "have not wanted to visit Japan since the quake" or "have no interest in visiting Japan." Little difference was seen between those who had visited Japan and those who had not (even some frequent visitors said they now were cautious about traveling there).

People from Thailand, Malaysia, Indonesia and Hong Kong expressed the greatest interest in visiting Japan. The survey showed these areas to be promising sources of future tourists, despite the relatively small number of Thais, Malaysians and Indonesians who have been to Japan to date. Japan has frequent visitors from Taiwan, where appreciation of Japan is well established.

### General Sentiments

- **Feel that Japan will decline in economic power**
- **No longer viewed Japan as such a "cool" place**
- **Left with damaged image of Japan as producer**
- **The largest proportion of respondents—47 percent—stated that they "wished for Japan's quick recovery."**
- **Felt compassion for the Japanese people**
- **Wished for Japan's quick recovery**
- **Left with damaged image of Japan as producer**
- **Left with diminished impression of Japan**
- **Impressed by the nation’s orderly, quality industrial goods**
- **Recognized Japan’s essential role as supplier**
- **Have never visited Japan (once)**
- **Have visited Japan 2 or more times**
- **Have never visited Japan**
- **Total**

### Source Countries

- **Beijing**
- **Shanghai**
- **Taiwan**
- **Hong Kong**
- **Korea**
- **Japan**
- **Malaysia**
- **Thailand**
- **Indonesia**

### Differences in Attitudes

- **Would consider visiting Japan despite the earthquake**
- **Didn’t want to visit Japan right after the quake, but would consider it now**
- **Were not interested in visiting Japan regardless of the earthquake**
- **Wouldn’t want to visit Japan since the quake**
- **Have no interest in visiting Japan, regardless of the earthquake**
- **Wouldn’t want to visit Japan, regardless of the earthquake**

### Source Countries

- **Beijing**
- **Shanghai**
- **Taiwan**
- **Hong Kong**
- **Korea**
- **Japan**
- **Malaysia**
- **Thailand**
- **Indonesia**

### Key Points

- **Excerpts from the Report on Attitudes toward Visiting Japan after the 2011 Tohoku Earthquake and Tsunami ① (Reference)**
- **Excerpts from the Report on Attitudes toward Visiting Japan after the 2011 Tohoku Earthquake and Tsunami ② (Reference)**
Reference: DBJ Profile and Initiatives in Support of Earthquake Disaster Reconstruction

DBJ Profile (As of November 26, 2012)

- **Establishment**: October 10, 2008
- **President & CEO**: Tōru Hashimoto
- **Number of employees**: 1,147 (as of March 31, 2012)
- **Capital**: JPY1,198,316,000,000 (wholly government-funded)
- **Head office**: 1-9-6 Otemachi, Chiyoda-ku, Tokyo 100-8178
- **URL**: http://www.dbj.jp/
- **Associated offices**: Branches (10), offices (8), overseas representative office (1), overseas subsidiaries (2)
- **Total assets**: JPY15,563,200,000,000 (as of March 31, 2012)
- **Loans outstanding**: JPY13,704,900,000,000 (as of March 31, 2012)
- **Capital adequacy ratio**: 18.30% (Uniform International Standard; as of March 31, 2012)
- **Issuer rating**: Aa3 (Moody’s), A+ (S&P), AA (R&I), AAA (JCR)
### DBJ Initiatives in Support of Earthquake Disaster Reconstruction

<table>
<thead>
<tr>
<th>Partner</th>
<th>Proposals &amp; research</th>
<th>Finance</th>
<th>Commercialization support</th>
</tr>
</thead>
<tbody>
<tr>
<td>National government</td>
<td>- Disaster analysis, proposals</td>
<td>- Cooperation in reconstruction planning</td>
<td>- Support for special reconstruction zones</td>
</tr>
<tr>
<td>Local government</td>
<td>- The Tohoku Handbook</td>
<td>- Supply Chain Support Fund (Japan Auto Parts Industries Association)</td>
<td>- Support for reconstruction projects</td>
</tr>
<tr>
<td>Economic groups, universities</td>
<td>- Proposals regarding the Tohoku Earthquake</td>
<td>- New loan program based on disaster preparedness ratings</td>
<td>- Public-private projects (reconstruction, PFI, etc.)</td>
</tr>
<tr>
<td>Private business</td>
<td>- Tourism industry</td>
<td>- Investments and taxes for reconstruction projects</td>
<td>- Industrial projects (advice on industrial schemes, matching of local governments and private companies, etc.)</td>
</tr>
<tr>
<td>Local financial institutions</td>
<td>- Healthcare management</td>
<td>- Emergency response financing</td>
<td>- Support for special reconstruction zones (advice for local councils; interest support program)</td>
</tr>
</tbody>
</table>

### Tohoku Revival Reinforcement Office (est. April 2011)

- To aid in the reconstruction of earthquake-damaged areas in Tohoku, DBJ established this office at its Tohoku Branch. The office gathers the knowledge and financing skills needed for effective recovery from every part of the DBJ Group and makes these available to the affected areas.
- Working with local governments and financial institutions, as well as national government agencies and economic organizations, the Tohoku Revival Reinforcement Office contributes to the reconstruction effort by issuing information and carrying out research and planning.

---

**Tohoku Revival Reinforcement Office**

- ![Head Office](#) **Regional Planning Department**
- ![Head Office](#) **Financial Institution Department**
- ![Head Office](#) **Other relevant departments**

- **Tohoku Branch**
  - **Tohoku Revival Reinforcement Office**
    - Carries out research and analysis based on local economic data on economic and industrial structure, extent of disaster damage, and other relevant matters.
    - Furnishes methods and skills for the framing and implementation of public-private projects and other initiatives based on reconstruction plans.
    - Utilizes reconstruction funds, recovery policies and other programs to facilitate private investment in reconstruction efforts.

---

**Knowledge and skills of the entire DBJ Group**
**Support Center for Special Reconstruction Zones (est. Dec. 2011)**

Drawing on its unique attributes and long experience, DBJ works to facilitate the smooth and swift recovery of affected areas. DBJ participates in local councils as stipulated in the Act on Special Reconstruction Zones, and gives primarily financial support to local governments and operators considering special reconstruction zone plans and projects.

- **DBJ**
  - Identification and coordination of the needs (primarily financial) of special reconstruction zones and projects carried out by national and local government and private companies.

- **Local government**
  - Review of plans and projects for special reconstruction zones
  - Support for special reconstruction zone plans and projects (through participation in local councils, etc.)

- **Private operators**
  - Designation and approval of special reconstruction zone plan (Special reconstruction zone interest subsidy*)

- **National government**
  - Application for status as special reconstruction zone

*Interest Subsidy Program for Special Reconstruction Zones (5-year, subsidy rate up to 0.7%)

---

**Coordination Framework with Relevant Organizations**

- **Coordination with local government**
  - DBJ supports local governments in framing reconstruction plans and in designing and implementing projects based on those plans.

- **Coordination with local financial institutions**
  - DBJ creates systems facilitating the flow of funds to companies and other entities affected by the disaster.

- **Coordination with national agencies and economic groups**
  - DBJ coordinates with special reconstruction zones and other regions undergoing restoration, providing useful information to government agencies, industries and others involved.

---

DBJ

Tohoku Revival Reinforcement Office

Local government

Local financial institutions

Government agencies and economic organizations
**Support for Reconstruction Planning**

<table>
<thead>
<tr>
<th>National government</th>
<th>Reconstruction Design Council in Response to the Great East Japan Earthquake</th>
<th>Kōsuke Motani (Senior Vice President, Regional Development Group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miyagi Prefecture</td>
<td>Miyagi Prefecture Earthquake Reconstruction Conference</td>
<td>Kōsuke Motani (Senior Vice President, Regional Development Group)</td>
</tr>
<tr>
<td>Fukushima Prefecture</td>
<td>Exploratory Committee for Reconstruction Planning in Fukushima Prefecture</td>
<td>Ryō Ishimori (Managing Executive Officer)</td>
</tr>
<tr>
<td>Iwate Prefecture</td>
<td>Iwate Prefecture Committee for Reconstruction after the Great East Japan Earthquake and Tsunami</td>
<td>Kōsuke Motani (Senior Vice President, Regional Development Group)</td>
</tr>
<tr>
<td>Sendai City</td>
<td>Sendai City Council for Earthquake Reconstruction Council (Regional Council)</td>
<td>Kōsuke Motani (Senior Vice President, Regional Development Group)</td>
</tr>
<tr>
<td>Yamagata Prefecture</td>
<td>Yamagata Prefecture Great East Japan Earthquake Reconstruction Conference</td>
<td>Takahiro Suzuki (Head of Tohoku Branch)</td>
</tr>
</tbody>
</table>

**BCM-rated Loan Program**

- **Disaster planning**
- **Business continuity**

**Crisis**

**Recovery curve after BCP/M**

**Soft" side: Framework for business continuity policy, goals, plans and promotion**

**"Hard" side: Business continuity infrastructure**

**BCP/BCM** is a management strategy by which earnings stability and corporate value are maintained and enhanced through business continuity initiatives.

**Goals:** Preventing decline in capacity utilization and minimizing recovery time.

Reference: Survey of Business Continuity and Disaster Prevention Initiatives by Companies (Cabinet Office, March 2010).

**DBJ loans to date**

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Projects</th>
<th>Amount (JPY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2006-2010 (pre-quake)</td>
<td>29</td>
<td>14.3 billion</td>
</tr>
<tr>
<td>FY2011-2015 (post-quake)</td>
<td>35</td>
<td>41.6 billion</td>
</tr>
</tbody>
</table>
### Support for Public-Private Projects (PFI/PPP)

1. **PFI Shinjo (Toyama City)**  
   Provision of project finance for a PFI project in partnership with local financial institutions  
   Shinjo Elementary School and Community Center, Toyama City
   - DBJ served as lead arranger along with the Hokuriku Bank for a project finance scheme for this PFI project carried out by Toyama City, involving new construction on the Shinjo Elementary School and the design, construction, maintenance and management of a new community center. The loan was executed jointly with the Toyama Bank, Toyama Shinkin Bank, and Niikawa Shinkin Bank.  
   - The project is notable for its having been completed locally by the principal operators and fund suppliers.  
   - Renewed vitality is expected for regions where PFI projects are locally-led.

2. **Yonezawa Shioi PFI (Yonezawa, Yamagata Prefecture)**  
   Provision of project finance for a PFI project in partnership with local financial institutions  
   Shioi Public Housing Complex, Yonezawa City
   - Working in cooperation with the Shonai Bank, DBJ concluded a co-financing agreement for project finance with the Yonezawa Shioi PFI, for the Yonezawa Public Housing Complex Reconstruction Project implemented by Yonezawa City.  
   - With its full participation in a PFI project in alliance with a local financial institution, DBJ helps to ensure that the housing needs of local residents are fulfilled.

### Inquiries

Please contact us with any questions or comments.
Tadao Hasue, Kumi Onuma  
Tohoku Revival Reinforcement Office, Tohoku Branch  
Development Bank of Japan Inc.  
Telephone: 022-227-8182  
Fax: 022-227-6769  
E-mail: tohoku@dbj.jp  
URL: [http://www.dbj.jp/](http://www.dbj.jp/)

---

Copyright (C) Development Bank of Japan Inc. 2013  
This material is created by Development Bank of Japan Inc. (DBJ)

This material has been prepared solely for the purposes of consideration and discussion between you and DBJ. This material is not intended as a solicitation or an offer to buy or sell any financial instrument, product, service or investment or for any other transactions. DBJ does not guarantee any feasibility of transactions described herein.

This material is prepared based on current generally held views of the economy, society and so forth, as well as certain assumptions reasonably made by DBJ. However, the information and content are not warranted as to completeness or accuracy and are subject to change without notice, due to change in the business environment or other reasons.

Please note that DBJ is not responsible for any action taken based on this material and no transactions described herein should be entered into without the independent advice of lawyers, accountants and/or other professional advisors where appropriate. Also please note that it is strictly prohibited to copy, extract or disclose all or any part of this material (including any attachments hereof) without prior written consent from DBJ.