Our Initiatives for Recovery from the Great Hanshin-Awaji Earthquake

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Restoration Support Dept., Disaster Prevention Planning Bureau,
Hyogo Prefecture
Director Kazunori Adachi
1. Overview of the Great Hanshin-Awaji Earthquake

Hansin Expressway Kobe Route

Damages in Hyogo

Nagata Ward, Kobe City
Total 9,926.8 billion yen ($99.27 billions) about 50% of the prefecture’s GDP

<table>
<thead>
<tr>
<th>Category</th>
<th>Value (in ¥ billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings</td>
<td>5,800</td>
</tr>
<tr>
<td>Railways</td>
<td>343.9</td>
</tr>
<tr>
<td>Expressways</td>
<td>550</td>
</tr>
<tr>
<td>Public works facilities (excluding expressways)</td>
<td>206.1</td>
</tr>
<tr>
<td>Harbor</td>
<td>1,000</td>
</tr>
<tr>
<td>Reclaimed land</td>
<td>6.4</td>
</tr>
<tr>
<td>Facilities for education</td>
<td>335.2</td>
</tr>
<tr>
<td>Facilities for agriculture, forestry and fisheries</td>
<td>118.1</td>
</tr>
<tr>
<td>Facilities for health, medicine, and welfare</td>
<td>173.3</td>
</tr>
<tr>
<td>Facilities for treating wastes and raw sewage</td>
<td>4.4</td>
</tr>
<tr>
<td>Facilities for drinking water</td>
<td>54.1</td>
</tr>
<tr>
<td>Gas and electricity</td>
<td>420</td>
</tr>
<tr>
<td>Facilities for communication and broadcasting</td>
<td>120.2</td>
</tr>
<tr>
<td>Facilities for commerce and industry</td>
<td>630</td>
</tr>
<tr>
<td>Other public facilities</td>
<td>75.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9,926.8</strong></td>
</tr>
</tbody>
</table>
2. Characteristics of the Great Hanshin-Awaji Earthquake

- **Occurred in densely inhabited area**
  
  Population of disaster area – around 3.6 million

- **Occurred in area where city functions are concentrated**
  
  Governmental (central, prefectural, municipal), information, and physical distribution function were concentrated

- **Occurred in area with aged society**
  
  30.5% of residents of temporary housings immediately after the earthquake and 46.9% of residents of emergency restoration public housing are elderly people aged 65 or older. (ratio of people 65 and older against total population: 14.5% as of 1995)
First step to recovery and reconstruction (1)

Emergency Response
3. First step to recovery and reconstruction (2)

Early restoration of lifeline etc.
3. First step to recovery and reconstruction (3)

Providing Shelters

Emergency temporary housing was provided to all persons who requested it. (Provided 48,300 units)
3. First step to recovery and reconstruction (4)

Removal of collapsed structures
4. Larger movements that originated from recovery efforts

- Birth of ‘Disaster Culture’ where disasters are discussed by the entire society in usual condition
  Creating the framework to enable reinforcement of volunteer activities, enhancement of crisis management system, improvement of disaster education, development of self-motivated disaster reduction organizations, enhancement of the Natural Disaster Victims Relief Law, etc

- Tackling issues concerning aged society
  Creating system to support vulnerable people during disasters, enhancement of systems to watch over elderly people

- Set the direction for a matured society of 21st Century
  Encourage active participation and collaboration of residents in community building activities
5. Reconstruction Initiatives

Hanshin-Awaji Restoration Committee, The Great Hanshin-Awaji Earthquake Reconstruction Plan *(Hyogo Phoenix Plan)*

Housing, Infrastructure, Industry

Restoration Fund ($9 billion)

Providing meticulous services *(The Life Quality Restoration Subsidy, Interest Subsidy for those borrowing money to rebuild or purchase housing)*

Collaboration of Prefectural Citizens, NPO, Corporations and the Administration

Earthquake Victim Restoration Support Committee
5.1. Reconstruction Initiatives

**Hanshin-Awaji Restoration Committee**

- **Government support**

  - The national government’s Great Hanshin-Awaji Earthquake Reconstruction Headquarters
  - The national government’s Hanshin-Awaji Reconstruction Committee

**Recommendation**

**Function**
Organization that responds to advice from Prime Minister and conducts research regarding national policies of recovery projects

**Structure**
7 members comprising experts, governor of Hyogo and mayor of Kobe, chaired by former vice-minister of Land, Infrastructure and Transport
5.1. Reconstruction Initiatives

Hyogo Phoenix Plan (1)

Basic Theme

- Harmonious Coexistence Between People and Nature, People and People, and People and Society

Basic Goals (5 Pillars)

- Creation of a welfare society tailored for the 21st century
- Creation of a culturally rich society open to the world
- Creation of a society where existing industries grow and New industries flourish
- Creation of a disaster-resistant metropolis where people can live with confidence
- Formation of a multi-centered network-type metropolitan area
## 5.1. Reconstruction Initiatives
### Hyogo Phoenix Plan (2)

<table>
<thead>
<tr>
<th>Duration</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Established</td>
<td>July 1995</td>
</tr>
<tr>
<td>Target Year</td>
<td>2005</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expenses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Governmental spending</td>
<td>$83.6 billion (51.3% of total)</td>
</tr>
<tr>
<td>Regional spending</td>
<td>$63.2 billion (38.7% of total)</td>
</tr>
<tr>
<td>Private business</td>
<td>$16.2 billion (10.0% of total)</td>
</tr>
</tbody>
</table>

**Governmental spending:** $83.6 billion (51.3% of total)

**Regional spending:** $63.2 billion (38.7% of total)

**Private business:** $16.2 billion (10.0% of total)
Within the 10-year reconstruction plan, a 3-year plan was created for urgent matters of residential buildings, infrastructure and industries.

<table>
<thead>
<tr>
<th>Category</th>
<th>Housing</th>
<th>Regional Infrastructure</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(unit: housing unit)</td>
<td>(unit: billion US$)</td>
<td></td>
</tr>
<tr>
<td>Planned Target</td>
<td>125,000</td>
<td>57.0</td>
<td>100.0%</td>
</tr>
<tr>
<td>(Type of Basic Date for comparison)</td>
<td>(number of orders placed)</td>
<td>(budget allocation)</td>
<td>(Net Regional Product Index)</td>
</tr>
<tr>
<td>Achievement</td>
<td>169,000</td>
<td>58.7</td>
<td>101.7%</td>
</tr>
<tr>
<td></td>
<td>(135%; planned target =100%)</td>
<td>(103 %; planned target =100%)</td>
<td></td>
</tr>
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Overall target level was achieved by the end of March 1998.
5.3. Restoration Fund (1)

Mechanism of the Great Hanshin-Awaji Earthquake Reconstruction Fund (established in April 1995)

[Capital Framework]

1. Municipal bonds $8.8 billion
2. Interest free loan
3. Fund
4. Interest payment
5. Interest
6. Expenditure

Reconstruction Fund: $9 billion
(Basic fund: $200 million of the above)

Prefecture: Kobe City (2:1)

Financial institute

[Tax allocation measure for amount of interest paid]

[Breakdown of fund revenue]
1. Basic fund investment profit: $27 million
2. Remaining fund investment profit: $3.6 billion
3. Lottery profit, etc.: $130 billion
Total about $3.7 billion

Operation expenses
Approx. $3.7 billion
5.3. Restoration Fund(2)

Fine-tuned measures are flexibly carried out using about $3.7 billion, obtained as a result of managing the $9 billion in the restoration fund. (10 Years)

- **Life support measures**: Self-support fund, etc.  
  32 projects: $1.8 billion (48.4%)
- **Housing measures**: Monetary compensation for interest on housing loans, etc.  
  33 projects: $1.1 billion (29.3%)
- **Industrial measures**: Monetary compensation for interest on emergency relief loans, etc.  
  33 projects: $0.5 billion (14.2%)
- **Educational and other measures**: Historical building repair, etc.  
  15 projects: $0.3 billion (8.1%)

**Total**  
113 projects: $3.7 billion (100%)

*28 projects at the outset increased to 113 projects*
5.4. Collaboration of Prefectural Citizens, NPO, Corporations and the Administration(1)

Mechanism of Earthquake Victim Restoration Support Committee

- An intermediate organization positioned between the government and the disaster victims

(Role/Function)
1. Grasping the living conditions of disaster victims: Hearing of opinions, requests, etc. (Out Reach)
2. Grasping the governmental policies
3. Giving recommendations, advice, etc. to put lives back in order (Advocacy)
4. Providing information via information magazines
Activities of the Earthquake Victim Restoration Support Committee

- **Characteristics**
  - Consists of scholars, supporters, etc.
  - An intermediate organization positioned between disaster victims and the government (Began in July 1995 with 12 experts)

- **Activities**
  - Understanding issues at hand by visiting disaster areas
  - Giving recommendations to both the government and the disaster victims
6.1. Promotion of the Hyogo Phoenix Plan
(Creation of a Society Dedicated to Public Welfare)

- Enhance Protection system for aged disaster victims
  - Mobilization of LSA (life support adviser), SCS (senior citizen supporter)
  - Construction of Disaster Relief Housing Community Plaza (meeting place)
  - Opening of the Iki-iki Shigoto Juku (Lively Working School)
  - Opening of local “Sickbays”

- Support for Volunteer Activities
  - About 1.4 million volunteers took part in a wide range of relief and support activities in the year following the earthquake
  - Number of private voluntary organizations in 1992

- Introduction of New Type of Housing
  - Silver housing, collective housing

- Hyogo Institute for Traumatic Stress
6.2. Promotion of the Hyogo Phoenix Plan (Creation of a Culturally Rich Society)

The Education on Disaster Reduction for Children

- Enriching of disaster prevention education
  Disaster prevention education and training at school
6.2. Promotion of the Hyogo Phoenix Plan (Creation of a Culturally Rich Society)

**Promotion of Volunteer Activities**

- The Ordinance concerning the Promotion of Volunteer Activities (1998)
- Hyogo Volunteer Plaza (2002)

**Hands-on Activities for Children and Enrichment of the Child-Rearing environment**

- Teenage Social Circle
- The Community Child Care Circle

**Culture-Oriented Development of Unique Communities**

- Hyogo Performing Arts Center (2005)
6.3. Promotion of the Hyogo Phoenix Plan
( Creation of a Society where New Industries Flourish )

Supporting Small Business

- Extending low interest loans for the resumption of business
- Providing temporary facilities for production

Creating New Industry & Attracting Enterprises

- Promoting technology transfers between universities and big businesses
- Attracting enterprises by introducing tax relief

Eliminating Employment Mismatches

- Implementing vocational training programs tailored to employer’s needs
Transition of Gross Domestic Product (GDP) in the Disaster-affected Area and Hyogo Prefecture
Establishment of the Initial Action System

(1) Hyogo Prefectural Disaster Management Center

(2) Hyogo Phoenix Disaster Management System

(3) Disaster & Emergency Medical Care System
   - Broad area disaster & emergency medical care information system
   - Disaster Hub Hospital (15 hospitals in the prefecture)
     Foundation hospital 'Hyogo Emergency Medical Center

(4) Volunteer Disaster-Management Organizations
   (Those who were buried alive beneath collapsed buildings was rescued by their community.)
   - April 1995 (27.4%) - April 2007 (95.7%)

Development of Disaster Management Bases

- Disaster Management Base 'Miki Earthquake Disaster Memorial Park (5 Bases in the prefecture)
- Tsunami observatory station, Tsunami surveillance camera

Guidance in providing assistance to affected people in the event of a disaster, etc.
6.4. Promotion of the Hyogo Phoenix Plan
( Creation of a Disaster-Resistant Metropolis )
( Volunteer Disaster Response Groups( 临港 ) )

What is a Volunteer Disaster Response Group?

It is a group formed voluntarily by the local residents under the shared awareness that “We must protect our own town”

- Normally formed in units of neighborhood associations or community associations
- In Kobe City, groups are formed based on elementary school districts

Disaster preparedness
- Learn and acquire knowledge and technique regarding disaster reduction
- Grasp the local circumstances, share information
- Conduct disaster drills
- Accumulate stock of disaster reduction equipment, food, etc.

In the event of a disaster
- Accurately communicate information
- Lead local residents during evacuation
- Conduct fire extinguishing, rescue, relief activities
- Distribute food and daily commodities
People must take the initiative in protecting their communities.

Percentage of households participation in volunteer disaster response groups.

- 1995: 27.4%
- 1996: 43.8%
- 1997: 66.9%
- 1998: 95.1%
- 2000: 95.7%
- 2001: 95.7%
- 2002: 95.7%
- 2003: 95.7%
- 2004: 95.7%
- 2005: 95.7%
- 2006: 95.7%

6.4. Promotion of the Hyogo Phoenix Plan
( Creation of a Disaster- Resistant Metropolis )
( Volunteer Disaster Response Groups( ) )
Activities of Volunteer Disaster Response Groups

Training for carrying injured person on a stretcher
Activities of Volunteer Disaster Response Groups 2

Firefighting training using small pump
Fire drill involving school and community
6.4. Promotion of the Hyogo Phoenix Plan (Creation of a Disaster-Resistant Metropolis) (Making buildings earthquake resistant (i))

90% of deaths during the Great Earthquake were caused by collapsed buildings

- **Making homes and public facilities earthquake resistant**

  (1) Formulation of Promotion Plan for Earthquake-Resistant Renovation Works in Hyogo
  - Numeric Targets: 97% for FY 2015

  (2) Promotion Project for Earthquake-Resistant Renovation work for homeowners
  - Subsidies for seismic diagnosis, creating plans for earthquake-resistant renovation work, and actual renovation works

  (3) Earthquake-resistant renovation works for prefecture-owned facilities
  - To use as hubs for emergency activities and/or for relief activities and evacuation site for disaster victims
  - Development of social infrastructure that realizes safety and comfort for prefectural residents
6.4. Promotion of the Hyogo Phoenix Plan
( Creation of a Disaster- Resistant Metropolis )
( Making buildings earthquake resistant (ii) )

E-Defense (3D full-scale earthquake testing facility)  (Before Seismic testing )
6.4. Promotion of the Hyogo Phoenix Plan
( Creation of a Disaster-Resistant Metropolis )
( Making buildings earthquake resistant (ii) )

닛 E-Defense (After the test: Intensity 7 on Japanese scale)
Determination of urban plans based on two-stage system

First stage: Project area identification, type of development project, urban facilities (trunk road, etc.) that serve as the core infrastructure
Second stage: Neighborhood streets, neighborhood parks, etc. ← Citizen’s participation (Community Creation Council)

Number of Community Creation Council

in 1994: 48 ← in 2007: 376 (Entire Prefecture)

Community Creation Council employed a two-step urban planning decision-making where discussions on town development planning and/or project content were held with participation from residents before details of urban planning were determined.
Immediately after the Earthquake (Nishinomiya City)
Urban Development (iii)

After Land Readjustment
(Nishinomiya City)
Recovery Status (Urban Redevelopment)
Recovery Status (Street)

Immediately after the Earthquake

Fully-Reconstructed
6.5. Promotion of recovery plan  
(forming the urban area) Habitation

Reconstruction of Private Housing

- Preferential treatment for housing loan
- Interest subsidy for those borrowing money

Moving into privately-owned rental housing

- House rent subsidy
- Promoting the supply of privately-owned rental housing

Securing Residence

- Supply of Public Housing (42,137 houses)
- Reducing the rent burden for Public Housing (for 10 years)
As the victim of an earthquake, it is the duty of Hyogo Prefecture to pass on the lessons learned from past earthquakes to the next generation and to utilize them in restoration and rehabilitation and international disaster prevention cooperation efforts.

Promotion of the “Never Forget January 17” movement
- Hyogo Safety Day
- Local disaster emergency drills “Never Forget January 17”
- “Never Forget January 17” disaster prevention education
- Hyogo Day of Safety Promotion Project
Establishment of the Disaster Reduction and Human Renovation Institute

- Senior researchers: 10; Dedicated researchers: 9

Collection, storage and display of reference materials

Operation costs: 50% supported by the national government

Research and study by specialists

Development of practical disaster prevention personnel

Dispatch of specialists in the event of disasters

Exhibition
7. Sharing of the Experiences and Lessons Learned from the Earthquake (3)

Hyogo Emergency Medical Center (2003)

**Objective** Core facility of emergency medical system

**Tasks**
- Emergency Response Center, Information and Instruction Center
- Collecting and Providing emergency medical care information in the event of disaster, Utilizing Doctor Car
- Human Resources Development, Collection & Dissemination of Information
7. Sharing of the Experiences and Lessons Learned from the Earthquake (4)

Sharing of the Experiences and Lessons Learned from the Earthquake (4)

HYOGO PREFECTURE
World's first disaster management program under collaboration of Hyogo prefecture and JICA
(1) Comprehensive coordination of disaster risk management training course which is held in Hyogo prefecture
(2) Implementation of disaster risk management training
(3) Disaster risk management research and development of educational materials
(4) Networking and utilization of ex-participants
(5) Establishment and utilization of data-base for human resource in disaster risk management

Implementation of training for disaster risk management
(JICA training, Others)

Disaster Reduction Learning Center
(Inaugurated in JICA Hyogo on May 17, 2007)
Utilize the potential of the Kobe New Eastern City Center

Establishment of human resource network

Research on disaster risk management

Networking of exparticipants
7. Sharing of the Experiences and Lessons Learned from the Earthquake (6)

Base of the International Disaster Management and Humanitarian Support

- International Organization
- Recovery Base
- WHO Kobe Center
- APN Center
- JICA Hyogo International Center
- IRP
- ADRC
- EDM
- UN/OCHA
- UNCRD Hyogo Office
- UN/ISDR Hyogo Office
- Hyogo Earthquake Memorial
  21st Century Research Institute
- Hyogo Disaster Management Center
- Japanese Red Cross Society
  Hyogo Chapter
- Hyogo Institute for Traumatic Stress
- Disaster Reduction & Human Renovation Institute (DRI)
7. Sharing of the Experiences and Lessons Learned from the Earthquake (7)

Domestic

  - dispatched 97 experts of traumatic stress and school supports, etc

- Chuetsu-offshore, Niigata Prefecture (2007)
  - dispatched 43 emergency safety check experts and volunteer coordinators, etc

- Iwate-Miyagi Inland Earthquake (2008)
  - dispatched 6 specialists of DRI

Overseas

Number of experts dispatched to help in earthquake recovery

- 12, Northwestern Turkey (1999)
- 18, Taiwan (1999)
- 4, Sumatra, Indonesia (2004)
- 4, Northern Pakistan (2005)
- 3, Si Chuan Province China (2008)
8. Recovery Status

Smooth Recovery

Population

Hyogo Pref. 5,526,689
Affected area (3,589,126)

Gross Prefectural Production (GPP)

Hyogo Pref. 5,596,449
Affected area (3,663,723)

About $200 billion (about $127 billion)

About $213 billion (about $135 billion)

Numbers above: whole prefecture, numbers in [ ] disaster-affected area
9. Dealing with unsettled issues

Overall Verification and Recommendations of the 10-Year Reconstruction (6 areas, 459 proposals)

- Support independency of elderly disaster victims
- Recover vibrant energy in city
- Prepare for disasters

3-year promotion policy that uses recovery results in prefectural administration

- Setting up places called “Koureisya Jiritsu Shien Hiroba” that support the independence of elderly people at vacancy rooms in Reconstruction Public Housing, etc.
- Promote local healthcare offices and collective housing
- Promote utilization of vacant lots and redevelopment of buildings, support revitalization of commercial avenues
- “Never forget January 17” local disaster emergency drills
- Prepare for Tonankai and Nankai Earthquakes (including maps showing potential flooding areas caused by tsunami and installing tide embankment), etc.
January 17 shall never be forgotten