Recovery Efforts after the Great Hanshin-Awaji Earthquake

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The Great Hanshin Awaji Earthquake Occurred at 5:46 am on January 17, 1995

Date: 5:46 am, 17th of January, 1995
Epicenter: Northern Awaji Island
(Southern part of Hyogo)
Scale: 7.3 on Richter Scale
Seismic intensity: 7 on the Japanese Scale
(Highest recorded in history)
Called the Southern Hyogo Earthquake
Rokko and Awaji Island Faults

Dead: 6,434 people;
Missing: 3 people
Financial damage: about $100 billion
(about 50% of the Hyogo’s GDP)
Houses destroyed (completely and partially destroyed): 260,000 (460,000 households)
1. Great Hanshin Awaji Earthquake

Overall Summary of Damage

2. Characteristics of the Great Hanshin-Awaji Earthquake

- Occurred in a Densely Inhabited Area
  Population of disaster area – around 3.6 million
- Occurred in area where city functions are concentrated
  Governmental (central, prefectural, municipal), information, transportation and physical distribution function were concentrated
- Occurred in area with an aging society
  30.5% of residents of temporary housings immediately after the earthquake and 46.9% of residents of reconstructed public housing are elderly people over 65 years old.
  (the ratio of people 65 and older against total population: 14.5% as of 1995)

3. System Supporting Recovery and Reconstruction

(1) The Great Hanshin-Awaji Earthquake Reconstruction Plan
   (Hyogo Phoenix Plan)

(2) 3-Year Priority Reconstruction Plans
   Housing, Infrastructure, Industry

(3) Reconstruction Fund ($9 billion)
   Providing Careful Services
   (Subsidy for independent recovery of lives, interest Subsidy for housing loan, etc.)

(4) Collaboration of Citizens, NPOs, Corporations and Governments
   Earthquake Victim Reconstruction Support Committee

3 (1) Hanshin-Awaji Reconstruction Plan

Outline <Hyogo Phoenix Plan>

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

Basic View
- Creative Reconstruction

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

Duration
- Established July 1995
- Target Year 2005

Expenses
- Planned Amount: $170 billion (660 Projects)
- Actual Amount: $163 billion (1,358 Projects)
3 (2) Priority Three-Year Plans

Within the 10-year Reconstruction Plan, 3-Year Plans were created for urgent matters of residential buildings, infrastructure and industries

<table>
<thead>
<tr>
<th>Category</th>
<th>Housing (unit: housing unit)</th>
<th>Infrastructure (unit: billion US$)</th>
<th>Industry (Net Regional Product Index)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planned Target</td>
<td>125,000 (number of orders)</td>
<td>57.0 (budget allocation)</td>
<td>100.0%</td>
</tr>
<tr>
<td>Achievement</td>
<td>169,000 (135% of planned target)</td>
<td>58.7 (103% of planned target)</td>
<td>101.7%</td>
</tr>
</tbody>
</table>

☆Overall target level was achieved by the end of March 1998

3 (3) Reconstruction Fund

The Great Hanshin-Awaji Earthquake Reconstruction Fund (established in April 1995)

- to support recovery of the affected area, Hyogo Prefecture and Kobe City established a fund of $9 billion (current value).
- the interest from this fund, about $3.7 billion, has been used for projects to support recovery in the disaster stricken area.

- Life support measures: Self-support fund, etc. 32 projects: $1.8 billion (48.4%)
- Housing measures: Monetary compensation 33 projects: $1.1 billion (29.3%)
- Industrial measures: Monetary compensation for interest on housing 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

3 (4) Collaboration of Citizens, NPOs, Corporations and Governments

In addition to “Self support” and “Public support”, “Mutual support” is important

Collaboration of Citizens, NPOs, Corporations and Governments

“Catalysts” and “Coordinator” for collaboration are essential

- Earthquake Victim Reconstruction Support Committee
  - Characteristics: Consists of scholars, supporters, etc. An intermediate organization positioned between disaster victims and the government (Begun 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

- Phoenix Citizens Recovery Network
  - Characteristics: Consists of citizens, a diverse of organizations, volunteer groups, companies etc. Assists the disaster-affected in lifestyle rehabilitation
  - Activities: Activity of providing goods each other, Support to victims living out of Hyogo, Support for moving into new houses etc.

4 (1) Promotion of Recovery Plan <the Hyogo Phoenix Plan>

Creation of Society Dedicated to Welfare

Support for independent living
Enhanced Protection system for elderly disaster victims
- Support of independent living of disaster victims
- Elderly victim’s health - classes/events for elderly
- Community-building

Introduction of a New Type of Housing

- Silver housing, collective housing

Mental Health

- Hyogo Institute for Traumatic Stress
- Psychosocial care for children and students
**4 (2) Promotion of Recovery Plan**
*<the Hyogo Phoenix Plan>*
**Creation of Culturally Rich Society**

- **Promotion of Volunteer Activities**
  - in the first year after the earthquake, about 1,400,000 people had participated in volunteer activities (the birth of volunteerism in Japan)
  - The Ordinance concerning the Promotion of Volunteer Activities (1998)
  - Hyogo Volunteer Plaza (2002)

- **Education on Disaster Reduction for Children, Hands-on Activities for Children, Enrichment of the Child-Rearing Environment**
  - New disaster prevention education, school support teams (EARTH)
  - Teenage Social Circle ・ Children’s Play Areas ・ The Community Child Care Circle

- **Culture-Oriented Development of Unique Communities**
  - Hyogo Performing Arts Center (2005)

**4 (3) Promotion of Recovery Plan**
*<the Hyogo Phoenix Plan>*
**Creation of Society where New Industries Flourish**

- **Supporting Small Business**
  - Extending low interest loans so business can resume
  - Providing temporary facilities for production

- **Supporting Shopping Arcades**
  - Using open space and vacant shops well
  - Revitalization of shopping arcades

- **Creating New Industry & Attracting Enterprise**
  - Subsidy for research and development
  - Attracting enterprises by introducing tax relief

- **Maintenance and Creation of Employment**
  - Implementing vocational training programs tailored to employer’s needs
  - Introducing ‘Worksharing’ the idea of reducing hours, to avoid laying off employees

**4 (4) Promotion of Recovery Plan**
*<the Hyogo Phoenix Plan>*
**Creation of Disaster-Resistant Urban Area**

- **Creation of Practical Disaster Mitigation Systems**
  - Hyogo Prefectural Disaster Management Center
  - Hyogo Phoenix Disaster Management System (a system to gather and summarize disaster prevention information)
  - Disaster & Emergency Medical Care System
    - Institution Created: Hyogo Emergency Medical Center
  - Development of Disaster Management Bases
    - Disaster Management Base :
      - Miki Earthquake Disaster Memorial Park and others (6 bases)
      - Tsunami mitigation station, Tsunami surveillance camera

- **Increase Regional Disaster Prevention Capacity**
  - Volunteer Disaster Response Groups: encourage and support (1995.4(27.4%) → 2009.4(95.8%))
  - Promoting earthquake resistance for homes and public facilities
  - Guidance in providing assistance to affected people in the event of a disaster, etc.
4 (4) Promotion of Recovery Plan <the Hyogo Phoenix Plan>
Creation of Disaster-Resistant Urban Area
Creation of Practical Disaster Mitigation Systems

Tsunami Mitigation Center

Fukura Port Tsunami Mitigation Station
Evacuation Routes Clearly Displayed

4 (4) Promotion of Recovery Plan <the Hyogo Phoenix Plan>
Creation of Disaster-Resistant Urban Area
Increase Regional Disaster Prevention Capacity

Volunteer Disaster Response Group
- a group formed voluntarily by the local residents formed in units of communities

☆ 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

Training for carrying an injured person on a stretcher
Fire drill involving school and community
Firefighting training using a small pump

4 (4) Promotion of Recovery Plan <the Hyogo Phoenix Plan>
Creation of Disaster-Resistant Urban Area
Increase Regional Disaster Prevention Capacity

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

Promoting earthquake resistance for homes and public facilities
(1) Formulation of Promotion Plan for Earthquake-Resistant Renovation Works in Hyogo
(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 (schools, hospitals, police stations etc.)

E-Defense (3D full-scale earthquake testing facility)
Before Seismic testing
4 (5) Promotion of Recovery Plan <the Hyogo Phoenix Plan>  
Renewal of Urban Area  
Community Planning (overall land use planning)

- Determination of urban plans based on a 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)

Immediately after the Earthquake  
Fully-Reconstructed

E-Defense  
《After the test : Intensity 7 on Japanese scale 》

Immediately after the Earthquake (Nishinomiya City)
Community Planning (overall land use planning)

After Land Readjustment (Nishinomiya City)

4 (5) Promotion of Recovery Plan <the Hyogo Phoenix Plan>
Renewal of Urban Area
Housing Recovery

Reconstruction of Private Housing
- Low interest housing loan
- Interest subsidy for housing loan

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

Public Housing
- Promoting the supply of disaster recovery public housing
- Reducing the rent burden for disaster recovery public housing

5. Recovery Issues and Measures by Phase

From January 1995
Emergency Measures Phase
(Immediate Post-Disaster-Evacuation Center Phase)

From August 1995
Reconstruction Phase
(Temporary Housing Phase)

From April 1998
Early Reconstruction Phase
(Permanent Housing Transition Phase)

From April 2000
Late Reconstruction Phase
(Full Scale Reconstruction Phase)

5 (1) Emergency Measures Phase
(Immediate Post-Disaster to Evacuation Center Phase)

January 1995 to August 1995

Main Issues
- Immediate and rapid rescue activities
- Restoration of infrastructure and lifeline utilities
- Improving the living environment of evacuation shelters
- Building temporary housing in the early phase
- Disposing of rubble and building debris

Main Efforts
- Firemen, Police, Japanese Self-Defense Forces came from the entire country to offer assistance
- Early Recovery of Lifelines and Transportation Infrastructure
- Transmitting Information to Earthquake Victims, Consulting services with a focus on details
- Providing Temporary Housing
- Housing Demolition and Disposal of Rubble using public funds
- Using the Recovery Fund to support many efforts
5 (2) Reconstruction Phase
(Temporary Housing Phase)

September 1995 to March 1998

**Main Issues**
- Senior Citizen victims in temporary housing need support to recover their daily life.
- Early Recovery of Infrastructure, Housing, and Industry

**Main Efforts**
- Establishing community centers within temporary housing to support elderly residents.
- Support of volunteers to recover and daily life activities.
- Establishing Earthquake Victim Reconstruction Support Conference
- Forming an urgent recovery 3-year plan (infrastructure, housing, industry)
- Highway and port Recovery
- Construction of Disaster Recovery Public Housing
- Support industry recovery through local ordinances.

5 (3) Early Reconstruction Phase
(Permanent Housing Transition Phase)

April 1998 to March 2000

**Main Issues**
- While moving into permanent housing, disaster victim need to recover their lives one by one.
- Need for stable employment in the disaster affected area.

**Main Efforts**
- Development of systems to monitor and protect the elderly (Living Support Advisors and Lifestyle Restoration Consultants)
- Created community plazas
- The Act for Support for Reconstructing Livelihoods of Disaster Victims
- Events to Create energetic local shopping arcades
- "Hyogo Work Sharing" introduced reduced working hours to have more jobs
- Support for community business

5 (4) Late Reconstruction Phase
(Full Scale Reconstruction Phase)

From April 2000

**Main Issues**
- Measures to address independent living for Seniors, and problems of making a lively town.
- Making a safe and secure that is suitable for an aging society in the 21st century

**Main Efforts**
- Strengthening the systems to monitor the elderly (appointing Senior Citizen Supporters, Establishing Mobile Health Care Rooms and Independent Support Plazas for Seniors)
- Measures to promote use of vacant lots and floor space, combining efforts holistically to create a lively energetic town.
- Creating the Mutual Aid System for Housing Reconstruction
- Establishing the Great Hanshin-Awaji Earthquake Disaster Reduction and Human Renovation Institution (DRI)

5 (5) Addressing Remaining Issues

10-Year Reconstruction Overall Verification and Recommendation Project (January 2005)
Recovery Follow up Commissioners Project (March 2010)

**Remaining Issues**
- Support for independent living of elderly disaster victims
- Reviving Community Vitality
- Preserve the Memory of the Earthquake

**Efforts Made**
- Creating Elderly independence support plazas and Mobile Health Care Rooms
- Grouping together activities in a system of comprehensive support for revitalizing urban development, for example measures to promote the use of vacant lots and floor space.
- Passing on the experiences and lessons of the Great Hanshin-Awaji Earthquake: develop a "Disaster Culture"; efforts to use the lessons; ‘Never forget 1.17’ project.
6. Transfer and Succession of Experiences and Lessons

- Establishment of the Disaster Reduction and Human Renovation Institute (2002)
  - Senior researchers: 10; Dedicated researchers: 9
  - Collection, storage and display of reference materials
  - Research and study by specialists
  - Dispatch of specialists in the event of disasters
  - Development of practical disaster prevention personnel
  - Operation costs: 50% supported by the national government

- Establishment of 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 Ambulance
    - Human Resources Development, Collection & Dissemination of Information

  - Objective: To have a specialized institute that addresses traumatic stress and Posttraumatic Stress Disorder (PTSD) caused by disasters, accidents, and abuses.
  - Tasks
    - Research, study and training
    - Dissemination of information and advocacy
    - Alliance building and networking
    - Consultation and counseling

- JICA Disaster Reduction Learning Center (2007)
  - World's first disaster management program under collaboration of Hyogo prefecture and JICA
    - Comprehensive coordination of disaster risk management training course which is held in Hyogo prefecture
    - Implementation of disaster risk management training
    - Disaster risk management research and development of educational materials
    - Networking and utilization of ex-participants
    - Establishment and utilization of data-base for human resource in disaster risk management
  - Implementation of training for disaster risk management (JICA training, Others)
  - Establishment of human resource network
  - Disaster Reduction Learning Center (Inaugurated in JICA Hyogo on May 17, 2007)
  - Utilize the potential of the Kobe New Eastern City Center
  - Networking of ex-participants
  - Research on disaster risk management
6. Transfer and Succession of Experiences and Lessons

Base for International Disaster Management and Humanitarian Support

- DRI in the Kobe New Eastern City Center
- Home to many international institutions related to disaster reduction, medicine, health, and environment, such as OCHA & WHO

- WHO Kobe Centre
- APN Centre
- EMECS
- JICA Hyogo International Centre
- IRP
- IRP
- ADRC
- EDM
- OCHA relief web
- UNCRD
- Hyogo Disaster Management Center
- Japanese Red Cross Society Hyogo Chapter
- Hyogo Institute for Traumatic Stress
- Disaster Reduction & Human Renovation Institution (DRI)
- The Great Hanshin-Awaji Earthquake Memorial Research Institution
- 21st Century Hyogo Research Organization for Human Care

International Organization Recovery Base

7. Mitigation and Disaster Risk Reduction Based on Lessons Learned from the Earthquake

- Lessons from Disaster
  - The Importance of Disaster Preparedness
  - The Importance of having systems already in place when earthquake hits.
  - The Importance of Recovery Organizations to work together and cooperate.
  - The Importance of Preparation at the local level
  - The Importance of Strong Community Planning

- Risk Reduction and Mitigation Measures
  - Substantial Disaster preparedness
  - Preparations of Response Systems
  - Coordination between different Recovery Organizations
  - Increase Local Level Preparedness
  - Support for self-help and community cooperation
  - Disaster Prevention based on Local Conditions.
  - Support the growth of high level Disaster Mitigation
  - Increased Safety for Houses and Public Buildings.
  - Providing fundamental Disaster Preparedness
  - Overall Measures against Flooding or Mountain Disasters
  - Sponsor International Cooperation for Disaster Prevention.

8. Recovery Condition of the Disaster Affected Area

Smooth Recovery

**Population**

<table>
<thead>
<tr>
<th>Date</th>
<th>Prefecture</th>
<th>Affected Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1995</td>
<td>Hyogo Pref. 5,526,689</td>
<td>(3,589,126)</td>
</tr>
<tr>
<td>May 2010</td>
<td>Hyogo Pref. 5,595,183</td>
<td>(3,673,853)</td>
</tr>
</tbody>
</table>

**Gross Prefectural Production (GPP)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>about $200 billion (about $128 billion)</td>
</tr>
<tr>
<td>2008</td>
<td>about $205 billion (about $129 billion)</td>
</tr>
</tbody>
</table>

※numbers above: whole prefecture, numbers in [ ]: disaster-affected area