Application Letter for UNISDR Role Model City

15 years ago, Kobe was inflicted with catastrophic damage by The Great Hanshin-Awaji Earthquake. From such ruins, Kobe was able to rebuild and recover through the heart warming support received from various nations and regions throughout the world. I would like to take this time to express my sincere gratitude.

Through the massive earthquake experience, we have learned "importance of human life", "appreciation of a circle to help one another", and "the importance of preparing for disaster."

As a reminder of the sacrifices and the lessons of the disaster, we are continuing to work towards creating a "safe and secure city."
For many years, Kobe has a history of dealing with flood disasters. After the earthquake, the citizens established a voluntary organization for disaster prevention in communities, *BOKOMI* (Disaster- Safe Welfare Community). With the joint efforts by the city government, Kobe continues to exercise activities for "the next generations to succeed these lessons of the earthquake" and to "prepare for future disaster."

15 years has passed since the earthquake. We believe, we must not allow for such tragic experience to repeat. Unfortunately, at present, it is beyond our powers to stop natural disasters from occurring. But we would be most pleased if our experiences could help assist with reducing the destruction caused by natural disasters.

I hope for everyone to find the opportunity to come and experience the present Kobe City. Thank you very much.

Sincerely yours,

Tatsuo Yada
Mayor of Kobe 矢田立郎

Annex I

Ten-point Checklist-Essentials for Making Cities Resilient
1. Put in place organization and coordination to understand and reduce disaster risk, based on participation of citizen groups and civil society. Build local alliances. Ensure that all departments understand their roles in disaster risk reduction and preparedness. (Achievement assessment: 3) (1) Kobe City's organizations and community disaster reduction plan i) In an effort to strengthen its disaster reduction and risk management system, Kobe City established the Risk Management Office. To deal with more diverse and complicated risks and disasters, experts are assigned to the office and provided with training. The city also draws up, implements, and makes adjustments to a long-term disaster reduction strategy. ii) The city has more than 20 departments and bureaus, including the Board of Education (in charge of school education), the Fire Department (in charge of fire safety and community disaster reduction organizations), the Construction Bureau (in charge of river and sewage management), and the Urban Planning and Housing Bureau (in charge of earthquake-resistant construction). Each department and bureau draws up and implements a disaster reduction plan. To protect the lives, health, and properties of the residents against disasters, the city establishes roles and determines activities for dealing with disasters in the city's Community Disaster Reduction Plan. The Risk Management Office compiles the plans from all departments and bureaus into the city's plan and revises it every year. iii) When revising the community disaster reduction plan, the city holds a disaster reduction conference to receive its approval. The participants in the conference include representatives from each department and bureau of the city, national and prefectural organizations, public transportation organizations, media, and city medical association, as well as the members of the community disaster reduction committee. iv) The community disaster reduction plan sets forth the city's roles for each department and bureau, and based on the plan, the city conducts disaster-preparedness drills regularly. v) In addition, to enhance Kobe's disaster reduction capacity, the city

encourages the communities to be organized to work toward disaster prevention and reduction as well as the well-being of the residents.

(2) Disaster reduction activities by community groups

Based on the lessons learned from the Great Hanshin-Awaji Earthquake, the city began to encourage the communities to form autonomous disaster prevention and reduction groups (in model districts in 1995, when the earthquake occurred, and throughout the city in 1997).

We call these groups "Disaster Reduction Well-being Communities" (so-called "BOKOMI"), and we created a group in each elementary school district. There are 191 elementary school districts in Kobe, and all districts now have their own groups.

These groups try to strengthen people's well-being and the community ties so that people can help each other in case of an emergency. The city has been supporting the groups by providing disaster prevention/reduction materials and equipment and educating some residents to become disaster reduction leaders.

2. Assign a budget for disaster risk reduction and provide incentives for homeowners, low-income families, communities, businesses, and the public sector to invest in reducing the risks they face.

(Achievement assessment: 2)

(1) Kobe City's budget for disaster prevention and reduction

i) Each department and bureau draws up its budget, which is finalized after undergoing examination by the mayor and receiving the assembly's approval based on that year's budget guidelines.

ii) The budget for disaster prevention and reduction covers various areas including fire safety, construction, and port development, involving different departments and bureaus. The budget is drawn up every year based on the citywide long-term plan (vision). One of the key elements of the plan is to create a safe and secure city.

iii) For housing safety, for example, the city has programs to send experts to check the earthquake resistance of housing, subsidize the cost of making housing earthquake resistant, and encourage people to secure furniture at home. The city also subsidizes the taking down of wooden housing in crowded residential areas. Through these programs, the city encourages the residents

to take the initiative in reducing disaster risk.

iv) In addition, companies, research institutes, and the government work together to conduct research on risk management and establish a system of cooperation within the framework of the Kobe Safety Net Conference (Risk Management Workshop). Each member organization of the conference works to create a safe and secure city by improving their risk management capabilities.

As of June 2010, the conference was made up of 76 organizations (70 businesses, five research institutes, and one government body). These organizations work to reduce disaster risk by, for example, studying BCP (business continuity planning) on a regular basis.

(2) Subsidies for community groups (Disaster Reduction Well-being Communities), etc.

i) The Disaster Reduction Well-being Communities are autonomous bodies, but the city also subsidizes parts of their costs. A community may receive up to 140,000 yen (per year) for its regular activities and for upgrading materials and equipment. In addition, a community may receive a subsidy of up to 200,000 yen when it makes an excellent proposal that makes use of local characteristics for its activities or conducts pioneering activities.

When a community makes such a proposal, the city convenes a screening committee to determine whether or not the community should receive a subsidy.

ii) As one example in which such an incentive was given, one community (in an area where buildings could be exposed to water if a Tonankai-Nankai earthquake were to occur) has been working to systemize efforts to help people who need special assistance at the time of an emergency.

Through the Great Earthquake experience, the citizens of the city have learned and understand that "Disaster Prevention and Reduction" can not be single-handedly manned by the government. As citizens identify and take on the responsibilities "to help yourself," "aid others," and "assist the community," we hope to promote disaster prevention and reduction. To mitigate the destruction of disasters, the city sees through that proper budget and funds are acquired.

3. Maintain up-to-date data on hazards and vulnerabilities, prepare risk assessments, and use these as the basis for urban development plans and decisions. Ensure that this information and the plans for the city's resilience are readily available to and fully discussed with the public.

(Achievement assessment: 3)

(1) Kobe City publicizes, through its website and other means, disaster-related information including the locations of active faults as well as areas that may be affected by flooding.

(2) During a rainy season, in particular, the city posts information about flood-hazard areas in the city magazine and distributes it to every household. (approximately 750,000 magazines are distributed.)

(3) The city works to reduce risk caused by new land development based on the Erosion Control Act, the Landslide Prevention Act, the Act on Prevention of Disasters Caused by Steep Slope Failure, and other sediment-related disaster prevention acts.

(4) In addition, in consideration of the risk related to urban development and based on the City Planning Act, the city holds public hearings, announces its plans to the public, and makes information accessible to the public before finalizing plans.

(5) During the restoration and development processes after the earthquake, in particular, each community established a community development committee to propose and draw up plans for community-related matters such as the development of community roads and parks in order to reflect the consensus of the residents.

4. Invest in and maintain critical infrastructure that reduces risk, such as flood drainage, adjusted where needed to cope with climate change.

(Achievement assessment: 3)

(1) The Construction Bureau is in charge of drainage facilities, manages the sewage system, and takes action against flooding. The bureau has been working to build rainwater drainage passages and pump stations to deal with a heavy rain that occurs about once every ten years (49.1 mm per hour), prioritizing the lowland areas, which are more vulnerable to flooding caused by

high tides during the typhoon season.

i) Action against flooding in the city's central area (south side of Sannomiya)

The south side of Sannomiya (near the national highway) was exposed to water in 2003 and again in 2004 due to high tides during the typhoon seasons. Maintaining close coordination with the Port and Urban Projects Bureau (which works on breakwater construction and maintenance), the city gives top priority to the construction of rainwater passages and pump stations, aiming to complete the project in fiscal 2014.

ii) Action against flooding in urban areas

The city gives priority to the construction of rainwater drainage facilities in lowland areas and other areas that are vulnerable to flooding due to the lack of rainwater drainage capacities. The city also working to improve citywide safety against flooding.

(Kobe City aims to create a flood resistant city and plans to achieve 76% of the target by the end of fiscal 2010.)

ii) Rain-runoff control

To reduce the burden on existing rainwater passages, the city works to control rain-runoff and make use of rainwater by building rainwater retention facilities in parks and schoolyards.

(2) In addition, to prevent landslides and debris flows from the Rokko Mountains, the Rokko Sabo Office (of the Ministry of Land, Infrastructure, Transport and Tourism) works to build, maintain, and manage check dams and prevent landslides using retaining walls.

5. Assess the safety of all schools and health facilities and upgrade these as necessary.

(Achievement assessment: 3)

(1) Making elementary and junior high schools earthquake resistant

It is essential to secure the safety of the schools to protect the students. These schools also become evacuation centers at the time of a disaster. The city began working to make all schools 100% earthquake resistant in fiscal 2005, aiming to finish the project by fiscal 2015. The city has actually been trying to complete the project ahead of schedule. The initial target for the first five years (fiscal 2005-2009) was 80%, but about 86% of the schools are now earthquake resistant.

In fiscal 2009, the city began working on 28 elementary schools and 15 junior high schools to make them earthquake resistant. The work will be completed at the end of fiscal 2010, making about 92% of all schools earthquake resistant. We will continue to work ahead of schedule and aim to complete the project by the end of fiscal 2011 (except for consolidated schools).

(2) Making other schools earthquake resistant

i) In fiscal 2009, the city began working to reinforce all kindergartens so as to make them more earthquake resistant. About 83% of the kindergartens are now earthquake resistant (as of the end of fiscal 2009). The city will finish working on two more kindergartens by the end of fiscal 2010, and about 87% of all kindergartens will be earthquake resistant by then. The city aims to complete the project by the end of fiscal 2011.

ii) The city will do its best to swiftly make high schools earthquake resistant based on the proposal from the panel for the future of city high schools (2011) as well as in consideration of the possibility of making taller buildings and of the relocation, consolidation, and establishment of schools.

(3) Seismic strengthening

Based on the seismic strengthening plan, the city is reinforcing school buildings by adding steel bracing to window frames and adding walls, as well as by repairing cracks, outside walls, and rooftop waterproof systems.

At the same time, the city is renovating classroom designs as well as repairing lights and restrooms. The city is also trying to make the schools more ecological by adopting high reflective coating, energy-efficient lighting bulbs, and rooftop thermal insulation systems.

(Note)

i) Checking earthquake resistance of school facilities

a. Between fiscal 2003 and 2005, the city checked earthquake resistance of school buildings (elementary, junior high, high, and special needs education schools) built before 1981 (when new earthquake resistance standards were adopted). The results were published in 2006.

b. The city checked the earthquake resistance of kindergartens in fiscal 2006. The results were published in 2007.

ii) Earthquake resistance of Kobe City buildings (as of the end of fiscal 2009)

	No. of buildings after 1982	No. of buildings before 1981				Total	Earthquake resistant
		Seismically reinforced	Have earthquake resistant capability	Reinforcement not complete	Is < 0.3		
Kindergarten	37	4	30	15	4	86	82.6%
Elementary & junior high school	439	408	189	173	41	1,209	85.7%
High school	20	2	2	32	14	56	42.9%
Special needs education	21	0	1	11	4	33	66.7%

(4) Making hospitals earthquake resistant

i) To prevent hospital buildings from collapsing at the time of an earthquake, to ensure the safety of the patients, and to provide appropriate medical treatment to earthquake victims, the city is doing its best to understand the state of seismic retrofitting of buildings and to help make the buildings more earthquake resistant. In particular, the city determined the earthquake resistance level (at the time of a disaster) of the core hospitals and emergency medical centers to be 71.5%.

ii) City hospitals were destroyed when the Great Hanshin-Awaji Earthquake occurred, and patients were trapped inside. The new West Hospital and the General Hospital were built to be earthquake resistant and to be able to maintain medical functions at the time of a disaster (by, for example, strengthening emergency power systems and preparing for helicopter transfers).

iii) Other private hospitals were also severely damaged by the earthquake. The city gives a subsidy of up to one million yen to a private hospital (with the total floor space over 1,000 m^2) to help pay for part of the cost of checking earthquake resistance.

6. Apply and enforce realistic, risk-compliant building regulations and land use planning principles. Identify safe land for low-income citizens and develop upgrading of informal settlements, wherever feasible.

(Achievement assessment: 3)

(1) The Urban Planning and Housing Bureau verifies compliance with the earthquake resistance standards based on the Building Standards Act and deals with illegal buildings.

Aiming to become the safest city in the country, Kobe City promotes a comprehensive policy to secure the safety of the buildings based on the city's safe and secure building plan.

i) To ensure the safety of new buildings, the city promotes compliance with legal procedures by, for example, reviewing and inspecting buildings in an appropriate and complete manner. The city also tries to prevent, promptly find, and rectify illegal buildings.

ii) Working together with the Hyogo Prefectural Police Department and other related organizations, the city gives orders, files accusations, and carries out administrative subrogation against illegal construction of buildings with malicious intention or of highly dangerous nature. The city also publishes the names of offenders.

iii) The city gives guidance to the owners of buildings which, if left alone, may harm the residents so that the owners can properly maintain and manage the buildings.

(2) Kobe City's plan to promote seismic retrofitting of buildings

Following the revision of the Act on Promotion of Seismic Retrofitting of Buildings in 2006 and in accordance with a basic national policy, Kobe City drew up a plan to promote earthquake resistance for and ensure the safety of the buildings that do not meet the new earthquake resistance standards. The city has a mid-range plan to raise the percentage of earthquake resistant buildings from the current 84% to 95% by fiscal 2035. To this end, the city established a policy of understanding the current state and achieving its target.

(3) Current policy to make buildings earthquake resistant

i) Sending experts to check the earthquake resistance of housing

The city checks the earthquake resistance of private housing (built before the

new earthquake resistance standards) free of charge, explains the results, and provides guidance concerning seismic retrofitting.

ii) Subsidizing seismic retrofitting of housing

The city subsidizes part of the construction cost for seismic retrofitting up to 1.1 million yen (combined with a subsidy from the prefecture) per household. The city also provides a subsidy for inspection of apartments required for future seismic retrofitting.

iii) Encouraging people to secure furniture

The city subsidizes part of the cost (a quarter of the total cost up to 10,000 yen) to secure furniture (conducted by housing contractors or other experts) in households with the elderly, challenged, and children.

iv) Other

The city subsidizes the cost of taking down wooden housing in crowded residential areas. The city also subsidizes the cost of checking the earthquake resistance of a specified building such as a school of a specified size.

7. Ensure that education programs and training for disaster risk reduction are in place in schools and local communities.

(Achievement assessment: 3)

(1) Disaster risk reduction education at schools

i) Disaster risk reduction education in Kobe

The Great Hanshin-Awaji Earthquake was an opportunity for Kobe to make substantial changes in its disaster risk reduction education. One of the important lessons we learned from the earthquake is the significance of people's lives, helping each other, caring for others, and family ties. The city published supplementary reading materials called "*Shiawase Hakobo*" (Messenger of Happiness) explaining this lesson for elementary and junior high school students. Taking into consideration the importance of psychological care and based on the circumstance of each school and area, we have been conducting disaster preparedness training, emphasizing earthquake risk reduction in particular, at all city elementary and junior high schools (for about 80,000 students at 166 elementary schools and about 35,000 students at 83 junior high schools). The training covers handing students over to their parents. The city also provides paramedic training for

junior high school students. In fiscal 2009, we carried out paramedic training at 43 schools (out of 83), and 5,223 students were certified as city life-saving technicians.

ii) Key elements of disaster risk reduction education

a. Teaching the lessons learned from the Great Hanshin-Awaji Earthquake

The schools teaches the lessons of the earthquake, such as the significance of people's lives, helping each other, caring for others, and family ties. Through this process, the schools also encourage students to live better.

b. Gaining knowledge and learning skills for disaster risk reduction

The students gain knowledge and learn skills to reduce disaster risk with a spirit of self-help.

c. Sharing knowledge

We consider it important for the residents to share their knowledge and work together in order to solve new problems associated with weather-related disasters, water disasters, and other disasters.

iii) Efforts to keep the lessons alive as the number of people who did not experience the earthquake increases

Some 15 years have passed since the earthquake, but we consider it important for people (including teachers) to have opportunities to learn or relearn the lessons from the earthquake. The city holds citywide training workshops so that each school can strengthen its capacity to provide its own training at a deeper level. The schools also share their various experiences in order to improve disaster risk reduction education. In addition, the schools closely work with the students' families and the communities, with the aim of finding and engaging with those who can share their experiences of the earthquake.

iv) Publicizing Kobe's disaster risk reduction education in Japan and around the world

In alliance with the Hyogo Prefectural Board of Education, Kobe Gakuin University, Hyogo Prefectural Maiko High School, and the Disaster Reduction and Human Renovation Institution, Kobe City established an institution to develop disaster risk reduction education. Our efforts include joint research based on our accumulated experience in disaster risk reduction education as well as publishing leaflets concerning disaster risk reduction with the aim of improving and promoting disaster risk reduction education throughout the country. Other efforts by the city include the following.

a. A support program for disaster risk reduction education jointly conducted

with the Fire Department

b. Effective use of the supplementary reading materials and DVDs, such as "*Shiawase Hakobo*" (Messenger of Happiness).

c. Disaster risk reduction learning and training, memorial events, and exchange activities (diverse forms of cooperation and exchange programs between different groups and schools) based on Kobe's characteristic disaster risk reduction curriculum

d. Training workshops to prepare for new disaster risk, the development of original teaching materials (including those for tsunamis, high tides, windstorms, and flooding), and volunteer and career education

v) Action against other disasters

In cooperation with related organizations, the city conducts workshops and disaster risk reduction training to prepare for typhoons, high tides caused by low atmospheric pressures, windstorms, flooding, sediment-related disasters and flooding caused by localized heavy rain, and tsunamis resulting from Tonankai-Nankai earthquakes.

The city also holds workshops for city officials in charge of disaster risk reduction, inviting lecturers from disaster reduction-related departments and bureaus as well as other related organizations and providing the latest information on disaster prevention and reduction for disasters other than earthquakes.

vi) Lessons from an accident related to the swelling of a river

Following an accident related to the swelling of a river, the city published and distributed emergency disaster risk reduction education materials to all elementary and junior high schools. Based on the circumstance of each school, teachers used the materials in class to improve the students' abilities to prevent risk.

vii) Opening schools to the community and encouraging community participation

Taking the opportunities when classrooms and schools are open to the community, the schools carry out disaster risk prevention lessons and training. The students gain knowledge and learn skills to protect themselves against disasters, working with parents, caregivers, and community residents. They also learn the importance of people's lives, family ties, and helping each other.

(2) Community disaster risk reduction training, etc.

In 2008, all 191 districts in the city formed their own community groups to prevent and reduce disaster risk and to enhance the well-being of the residents

(Disaster Reduction Well-being Communities). Kobe residents engage in various activities based on a spirit of self-help/mutual-help, aiming to be able to take action at the time of an emergency through regular welfare activities and disaster risk reduction training. About 800 training programs take place throughout the city each year.

Every year, the city also provides training and workshops to cultivate about 900 disaster reduction leaders able to take the initiative in disaster reduction activities in their neighborhoods (30-50 households) at the time of a disaster.

8. Protect ecosystems and natural buffers to mitigate floods, storm surges, and other hazards to which your city may be vulnerable. Adapt to climate change by building on good risk reduction practices.

(Achievement assessment: 2)

(1) Developing and maintaining networks of water and greenery

i) The city aims to develop a safe and comfortable city with the use of water and greenery, specifically by creating natural areas that can be used for day-to-day recreation purposes as well as for escape routes and as areas to prevent the spreading of fire at the time of an emergency.

More specifically, the city takes advantage of the locations of existing rivers, roads, and mountains, as well as the ocean, to create green areas in a reticular pattern. Such areas surround communities in the urban areas for the purpose of disaster prevention and reduction (riverside, roadside, piedmont, and oceanfront green belts). To enhance the effectiveness of the belts, the city plants trees on and along smaller streets and rivers and connects them to the belts. In addition, the city develops wells and rainwater reservoirs in parks to enhance the use of water as well as waterways and artificial lakes using wastewater (that has gone through an advanced sewage treatment process), spring water, and industrial water.

iii) Among the green belts, riverside green belts run from north to south. The development and maintenance of riverside green belts along with parks, green areas, and roads between the rivers ensures the prevention of the spread of fire in addition to the presence of water for putting out fires and for daily life activities. Furthermore, such zones can serve as evacuation areas and escape routes at the time of disaster as well as places for recreation on a daily basis. Hyogo Prefecture also works on a project to develop and maintain rivers for

disaster prevention and reduction and day-to-day recreation. Working with the prefecture, Kobe City is working on the development and maintenance of its six rivers and their surrounding areas, including parks and roads.

iv) Kobe City has scarce water resources and thus tries to use diverse water sources including river water, treated wastewater, groundwater, and reservoir water. In an effort to make most of its scarce water resources, the city is building a water circulation system based on the concept of "store it up, run it slowly, reuse it, and make it obvious." The city also works with the residents, companies, and NPOs to promote a project to create networks of water and greenery by developing and maintaining parks along rivers (including planting trees), stepped revetments, steps, slopes, stepping stones leading to water intake pits, emergency roads on flood channels, and low-flow channels as well as securing roads for administrative use.

(2) Rokko Mountain Range Green Belt Development Project

i) The Great Hanshin-Awaji Earthquake caused many landslides and created loose ground in the Rokko Mountains, increasing the risk of sediment-related disasters during and after rain. Therefore, it was necessary to strengthen the capacities to prevent and reduce disaster risk at the foot of the mountains, and Kobe City's restoration plan included the development and maintenance of mountain range green belts.

ii) The project aims to increase public-owned land as necessary on the of Omote-Rokko mountainside (extending for a distance of 30 km from Takarazuka city to Suma-ku, Kobe City) and to develop and maintain multi-function green belts in order to create a disaster-resistant city and preserve urban green environments and beautiful landscapes.

iii) Functions of the green belt

a. Preventing sediment-related disasters

b. Preserving and cultivating excellent urban environments, landscapes, ecosystems, and biodiversity

c. Preventing urban sprawl

d. Providing areas for recreation

To achieve the desired functions for the Rokko Mountain Range Green Belt, the city specifies some mountainside areas (that face the urban areas and need to be progressively taken care of) as sediment control areas and special greenery preservation areas in the city's urban development plan.

Disaster reduction, natural environment, and climate change are new issues we are currently facing. To address these issues, in Japan, the legislations pass new bills to the ministries and government offices. The prefectures, government facilities and related organizations in rural and urban districts bring forth these bills to their respective areas. With the cooperation of the citizens and businesses, each area discusses what each citizen can start, incorporate, and continue in his/her daily life to prepare for these new issues. Through trials and errors, as we continue to test and learn, we hope for all citizens to take responsibility and promote these issues.

In Kobe, under the "City of Kobe Environment Policies, our goal is to "realize an environmental conservatory society that can sustain with minimal impact on the environment." To work towards this goal, we must focus on "what we can and need to do as a city." We hope to work, hand in hand with the citizens and businesses to "protect nature's beauty, and recognize the symbiosis relationship and banding city, Kobe"

9. Install early warning systems and emergency management capacities in your city and hold regular public preparedness drills.

(Achievement assessment: 3)

(1) Kobe City has several methods of providing disaster information to its residents, and the use of these systems is explained in the city's disaster prevention and reduction plan.

i) The media quickly and independently broadcasts weather forecasts and warnings through TV, radio, and other methods. The city will also request the media to broadcast critical information when necessary.

ii) Using government wireless disaster information systems such as loudspeakers and radios, the city will promptly provide earthquake and tsunami information.

The city also adopted the J-Alert, a nationwide warning system, which receives information (about natural disasters including tsunamis and other threats) from a satellite (Superbird B2) and automatically broadcasts information to the public via loudspeakers.

iii) Based on the agreement on broadcasting requests at the time of a disaster, the city will resort to broadcasting requests via the Governor of Hyogo when

the urgency of informing the residents of tsunamis or other threats is recognized and it is difficult to use other methods.

iv) When requests are made by residents in advance, the city will inform them of evacuation advisories and provide other emergency information via cell phone using the Hyogo Emergency Net, a system that transmits emergency information (on earthquakes, tsunamis, and abnormal weather) and evacuation information.

v) The city is also prepared to use other methods to inform the residents of disaster information (including the city's website and cars with loudspeakers).

(2) Kobe City's disaster prevention and reduction plan

i) Based on the Basic Act on Disaster Control Measures, the city's disaster prevention and reduction plan specifies, in a comprehensive and planned manner, what the city needs to do to protect residents' lives, health, and properties and to cooperate with related organizations during disasters such as earthquakes, windstorms, and flooding.

The city thoroughly revised its plan after the Great Hanshin-Awaji Earthquake. The plan comprises of the following elements.

a. Action against earthquakes, windstorms, and flooding
b. A disaster prevention and reduction manual
c. Disaster prevention and reduction projects (creation of a safe city)
d. A disaster prevention and reduction database

ii) Based on the plan, the city conducts government-wide training (involving both communication and full-fledged drills) during the rainy reason (June), the typhoon season (September), and in January (when the Great Hanshin-Awaji Earthquake occurred). In addition, each department and bureau reviews the results of the training programs to improve the plan within the framework of the city's disaster reduction and risk management activities.

10. After any disaster, ensure that the needs of the survivors are placed at the center of reconstruction with support for them and their community organizations to design and help implement responses, including rebuilding homes and livelihoods.

(Achievement assessment: 3)

(1) After the Great Hanshin-Awaji Earthquake devastated Kobe, the city did its best to stabilize the livelihoods of the residents and restore the city's functions. At the same time, the city drew up the "Kobe City Restoration Plan" in 1995 to

reconstruct Kobe as a safe, vital, and attractive city (the target year: 2005).

(2) Based on lessons learned from the earthquake, such as the significance of maintaining a balance between functionality and comfort in urban planning, coping with both benefits and disadvantages of nature, and communicating closely with other residents, the plan set out four city development planning goals: safety, vitality, attractiveness, and cooperation. Safety is the basis for people's livelihoods, vitality supports people's livelihoods, and the city did its best to recreate itself as an attractive city working with the residents.

(3) The city also compiled a list of basic issues facing the city and drew up reconstruction targets and a concrete policy to achieve each target. The city also created plans to make the city a safer place. In addition, the city drew up the urban area restoration plan, which covered the reconstruction of specific areas (that were severely damaged and required comprehensive development) in accordance with local characteristics. Additionally, the city determined "symbol projects" that needed to be prioritized and conducted in a comprehensive manner. The plan also covered the issues that needed to be addressed.

Restoration and reconstruction efforts were not easy, and we faced diverse issues that could not have been solved by using the existing systems. With support from the national government, we prioritized the reconstruction of people's livelihoods, and the residents, businesses, and the city worked together in the restoration and reconstruction efforts.

Below is a list of major efforts by target in the restoration plan during the first five years after the earthquake.

i) Livelihoods of the residents

The city provided various forms of support to the residents, including: providing public funds to cover the total costs to remove debris; providing a substantial amount of emergency temporary housing; using various methods to secure public housing for victims and substantially reducing rents; and providing subsidies using the Hanshin-Awaji Earthquake Recovery Fund.

To deal with issues that the victims confronted in the areas of medical care, employment, and housing, the city drew up a plan to support the victims in reconstructing their livelihoods and implemented a carefully crafted policy to create new communities and rebuild livelihoods.

To provide housing for victims, the city drew up an emergency three-year plan to reconstruct housing. In addition, based on the severe conditions that faced the victims, and particularly the elderly and low-income earners, the city drew up another plan to provide housing to support such victims.

The city also used various methods, based on the circumstances of each area, in order to carry out land readjustment and redevelopment projects in areas that were severely damaged by the earthquake and required the upgrading of urban infrastructure.

ii) Vitality of the city

Among the efforts to reestablish small and medium-sized businesses, the city made most of existing systems to provide special loans including unsecured guarantor loans, construct temporary factories for rent, prepare temporary joint stores, build publicly-managed factories for rent, and provide guidance services for shopping streets and retail markets.

In 1997, the city drew up a plan to realize full-fledged economic recovery that detailed key actions to take, including providing support to the areas that had not seen much recovery, achieving full-fledged recovery of existing industries, cultivating new industries, and promoting international economic exchanges.

The restoration of the Port of Kobe was critical for the recovery of Kobe's economy, and thus the city rapidly implemented reconstruction efforts. The restoration of the port facilities damaged by the earthquake (including quays and sheds for large vessels) was completed within a little over two years. The city also engaged in port restructuring and redevelopment efforts.

To boost the use of the Port of Kobe, related government offices, industry groups, and labor organizations established a committee in 1997 to promote the use of the port, discussing policies to improve the port services. As a result, the Port of Kobe did its best to improve its services and to become a user-friendly port by, for example, reducing or creating exemptions from usage fees, allowing domestic vessels to use berths for international trade, promoting the use of feeder services by domestic vessels, reviewing the port pilotage standards, and adopting EDI (Electronic Data Interchange).

iii) Attractiveness of Kobe City

The city restored and rebuilt various cultural facilities and resumed its cultural programs. The earthquake was also an opportunity for people to begin new efforts. Among such efforts were the establishment of optical cable/cable TV networks, the development of information infrastructure, the development of disaster prevention and reduction areas and parks along major rivers, and the establishment of an ordinance that banned littering.

iv) Community development with the residents

After the earthquake, local community groups and many volunteers from all around the country helped each other and actively engaged in various activities.

To maintain such community activities for the sake of the prevention and reduction of disaster risk as well as for the well-being of the residents, all city districts began forming "Disaster Reduction Well-being Communities."

v) Creating a safe city

The city made substantial changes in its Community Disaster Reduction Plan. The city has also been collecting and promoting information related to the creation of a safe city as well as improving the earthquake resistance and networking of lifelines and infrastructure.

To ensure the safety of the residents from disasters and crimes, the city adopted an ordinance to promote the safety of the residents in 1998. The residents, businesses, and the city have been playing their roles and working together to create a safe city.

2. Reexamining the restoration plan

(1) Reexamining the restoration efforts during the first five years after the earthquake

The city examined the restoration efforts during the first five years after the earthquake in order to look back on the past efforts, review each project and the results, identify remaining issues to address, and examine effective policies for the next five years (the latter half of the restoration plan). To take in opinions from a wide perspective and create grass-roots efforts, the city not only had city officials examine each project—it also tried to involve the residents throughout the examination process by, for example, holding workshops (where the residents could discuss specific issues) and public hearings as well as conducting a survey targeting 10,000 residents.

(2) Reexamining the restoration efforts during the ten years after the earthquake

At the beginning of fiscal 2004 (the tenth anniversary of the earthquake), the city reexamined its restoration efforts in order to: 1) understand the progress of the restoration efforts, identify remaining issues, and reflect them in the last part of the restoration process; 2) maintain and further develop efforts and systems that emerged during the restoration process for future city development; and 3) pass on the lessons learned from the earthquake and through the restoration process to future generations and promote such lessons both in Japan and around the world so that people would be able use the information to better respond to future disasters (as the responsibility of a city that experienced a devastating earthquake).

Annex II

City	
City name	Kobe City
Location	Japan
Size(Year)	552.80 km²(2010.11.1)
Population(Year)	1,538,570(2010.9.1)
GDP	¥6,151,383,000,000-(Kobe city 2007)
Hazard types	Typhoon,Storm Surge,Sediment disasters,Earthquake etc

Name of Mayor	
Tatsuo Yada	
Part of the city administration	
Crisis Management Office	
Contact details Forcal Point	
Name	Yasumasa Hasegawa
Function	Assistant Manager
Address	6-5-1 Kano-cho,Chuo-ku,Kobe 650-8570,Japan
Email	yasumasa_hasegawa@office.city.kobe.lg.jp
Telephone	+81 78 3226487
Fax	+81 78 3226031

Geographical features of Kobe City

The Rokko Mountains, which extend from east to west, divide Kobe City into northern and southern sides, The south side faces Osaka Bay and lies on a long and narrow plateau stretching east to west (formed by sediment transported through the Omote-Rokko rivers from the Rokko Mountains) as well as on coastal lowlands. The steep hills of the south side of the Rokko Mountains have many valleys and face the urban areas. The hills are connected to large sediment deposits along the Suwayama faults.

Approximately 70% of the city's population lives in the urban areas.

Undulating hills over 300 m high made up of rhyolite and tertiary deposits are located on the north side of the Rokko Mountains. The west side of the city is situated on a low plateau made up of quaternary deposits created by the Ikawa

River and other rivers, and it is adjacent to the western plain.

Major Disaster Risk

(1) Earthquake risk

Kobe's urban areas are situated at the verge of Rokko Mountains (which are gradually elevated by crustal movements called the Rokko movements) and Osaka Bay (which has been sinking since the Quaternary Period, approximately two million years ago). There are active faults including the Suma and Suwayama faults, the Rokko-Awaji fault system, which includes the Kariyaoki, Okurayama, and other concealed active faults (located just southeast of the aforementioned active faults), and the Osaka Bay fault system (located about 5 km south of the aforementioned fault system). The Osaka Bay fault extends from north-northeast to south-southwest in the central-western part of the bay. The northern end of the fault to stretch offshore of Port Island, but it is not clear after that point. In addition, diverging north-northwest from the Osaka Bay fault, the Wada-misaki fault is located at the east end of Wada-misaki Point, extending northeast to join the Rokko-Awaji fault system somewhere between Nada-ku and Higashinada-ku in Kobe City.

Additionally, the Takatsukayama fault is located on the western margin of Mt. Rokko, and the Rokko and Kashiodani faults (extending westward from the Arima-Takatsuki tectonic line) exist near the northern part of the Rokko Mountains and the Taishaku Mountains. However, generally speaking, the faults on the north and west sides of the Rokko Mountains have been less active compared to those on the south side since the latter half of the Quaternary Period, and most of their movements have been insignificant.

(2) Great Hanshin-Awaji Earthquake

i) Characteristics of the 1995 Southern Hyogo Prefecture Earthquake

a. The earthquake directly hit the Hanshin metropolitan area, including Kobe City (7.3 on JMA magnitude scale)

b. The earthquake originated at a relatively shallow depth of 16 km and caused destruction in a vertical and an almost rectangular area (50 km long and 15 km deep) instantaneously releasing great energy. The duration of the earthquake was short, but the oscillation was the largest on record at 18 cm, which caused a never-before-experienced catastrophe.

ii) Damage

a. The earthquake caused the most destruction of any earthquake since the

1923 Great Kanto Earthquake, including 4,571 deaths, 2 missing persons, 14,678 injured persons, 122,566 fully or partially collapsed buildings, and 7,045 fully or partially burnt buildings. (These numbers are for Kobe City alone.)

b. The earthquake directly hit the metropolitan area, damaging electricity, water supply and sewage systems, gas, and telephone lines in a wide area as well as cutting off lifelines such as roads and railways.

c. Many buildings collapsed and fires broke out in areas where there were many old wooden houses. On the west side of the city, in particular, fires broke out simultaneously.

d. The earthquake caused substantial damage to large-scale structures because the intensity of the earthquake exceeded our expectations and the structures were not designed to withstand such an earthquake.

e. The earthquake damaged the city hall (Building 2), hospitals, fire stations, and other facilities. Some markets, shopping areas, factories, business offices, and other buildings also collapsed or burnt down, which severely damaged the economic infrastructure.

iii) Major damages (in Kobe City)

Deaths	4,571
Missing	2
Fully collapsed buildings	67,421
Partially collapsed buildings	55,145
Fully burnt buildings	6,965

(Resource: Kobe City Disaster Control Headquarters)

iv) Outline

a. Evacuees: 236,899 (at 599 evacuation centers; the number reached its highest on January 24, 1995.)

b. Number of fires: 175 (between January 17 and 27)

c. Area destroyed by fires: Approx. 82 ha

d. Damage to lifelines

Water: The water supply was cut off in the urban areas and beyond instantly after the earthquake occurred. Emergency rehabilitation was completed on April 17.

Sewage: Immediately after the earthquake occurred, some sewage pipe lines were damaged, some treatment facilities stopped working, and some facilities reduced their functions in the urban areas and beyond. Emergency

rehabilitation was completed on May 31. Restoration was completed at the end of 2006 (except for the Higashinada treatment facility).

Electricity: The electricity went down in the urban areas and beyond immediately after the earthquake occurred. Emergency rehabilitation was completed on January 23.

Gas: The gas supply stopped immediately after the earthquake occurred. Restoration was declared complete on April 11.

Telephone lines: The telephone lines were disconnected in the urban areas and beyond immediately after the earthquake occurred. Approximately 120,000 lines were declared restored on January 31.

(3) Floods and other risk

Generally speaking, Kobe City belongs to the Setonaikai climate. The south side of the Rokko Mountains has a relatively mild climate due to its proximity to the Seto Inland Sea. In contrast, it is slightly colder on the north side of the mountains due to the higher altitudes.

The Rokko Mountains are a recreational area for Kobe residents. However, from a meteorological perspective, upward air currents develop along the mountains under low atmospheric pressures or ahead of fronts, sometimes causing heavy rain.

The wind blows from the north or west-northwest between September and March due to seasonal winds during winter. Between April and August, the wind blows mainly from the east-northeast along the Rokko Mountains.

Kobe City has an average annual wind speed of 3.2 m/s (based on 1996-2000 figures). The wind condition becomes a critical factor in the occurrence of fires at the time of an earthquake.

Kobe City Disaster-Safe Welfare Community

- Lessons from the Great Hanshin-Awaji Earthquake

KOBE CITY

Great Hanshin-Awaji Earthquake

Damage

News Photos

Great Hanshin-Awaji Earthquake

Rescue Operations and Fire Fighting by Citizens

Rescue Operations

Fire fighting bucket brigade

News Photos

Voluntary Disaster-Prevention Groups in Kobe

Kobe Disaster-Prevention Welfare Community

“BOKOMI”

Scale: For each elementary school district

(Approx. more than 2000 households are included in 1 group)

*** 191 groups in Kobe（100%）**

Organizations { Headquarters
Block groups **(**Section for information, firefighting, rescue and aid, evacuation guidance, and living.**)**

Kobe Disaster-Safe Welfare Community

“BOKOMI”

Activity details

(1) Disaster-prevention activities

Disaster-prevention drills and training, first-aid seminar, check of materials and equipment, arson prevention patrol, preparation of community safety map, etc

(2) Welfare activity

Friendship lunch and visit

**** Aiming to form organizations that can take action against major disasters***

Activities of “BOKOMI”(1)

BOKOMI Junior teams

Activities of “BOKOMI”(2)

Cooperation /

BOKOMI and business entities

Activities of “BOKOMI”(3)

Disaster Education /
BOKOMI and Schools

Activities of “BOKOMI”(4)

Uozakicho Disaster-Safe Welfare Community/
Emergency drill to rescue persons with special needs in time of disaster

Support measures conducted by Kobe City

★**Provision of materials for disaster-prevention groups formed**

★**Subsidizing of activity costs**

-Operation costs and Proposal-oriented activity cost

★**Support for Developing Civil Disaster-Prevention Leaders**

★**Area firefighters support for BOKOMI**

Future Prospective (participation of young people)

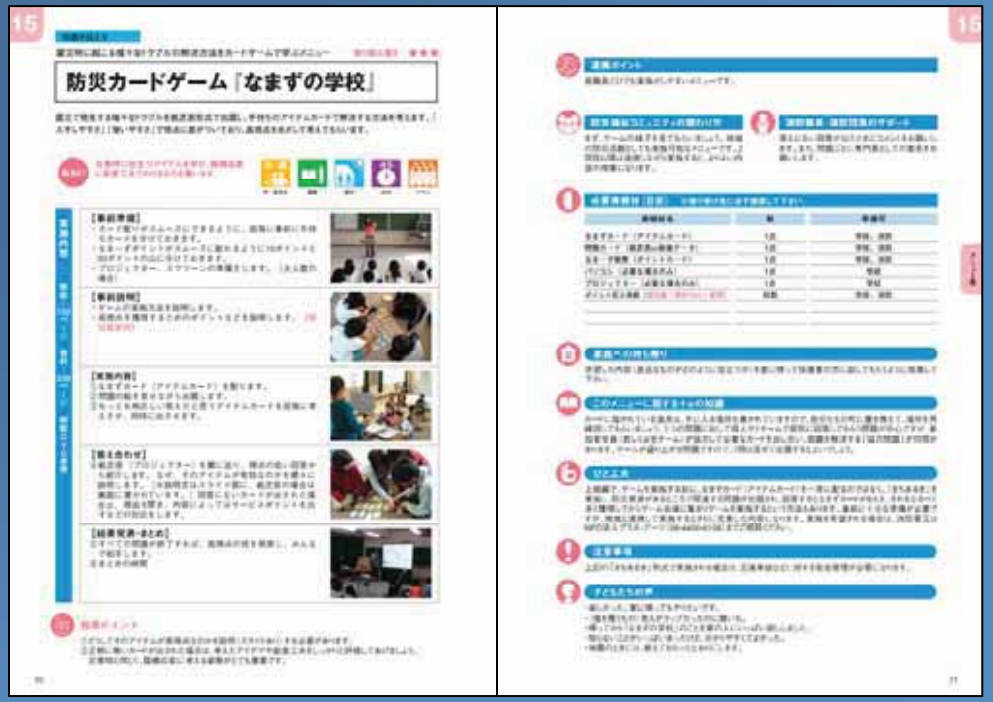
Exercise in cooperation with schools

Education program for disaster-prevention (schools + BOKOMI)

Future Perspective
(Lessons from the Disaster)

[BOKOMI School guide]

KOBE City Disaster Prevention Education Support Programs(2009～)



JICA's training and dialogue program

"Community-based disaster prevention-Introduction of KOBE's Efforts"

2007～


"You can't predict when disaster occurs"
"Protect your community yourselves"
"Hand down the lessons from disasters to the next generation"
Thank you.