

Cabinet Office Food Safety Commission
General Food Safety Report for Fiscal Year ending March 31, 2004

Report on the gathering and dissemination of information relating to food safety incidents occurring within Japan

(Report on the Great Hanshin-Awaji Earthquake)

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Gyosei Corporation

The Great Hanshin-Awaji Earthquake

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Outline

At 5:46 a.m. on January 17, 1995, an earthquake of magnitude (M) 7.2 occurred originating in the northern part of the island of Awaji. This was a so-called “earthquake directly above its epicenter,” and it inflicted grave, extensive damage on Kobe City and other areas. The extent of its damage was second to the Great Earthquake of 1923 in the Kanto Region of Japan in the 20th century. This “1995 Earthquake in the Southern Districts of Hyogo Prefecture” alias the “Great Hanshin-Awaji Earthquake” exposed the fragility of a functionally developed modern city against the forces of nature.

Some specific features of damage by this Earthquake are: i) collapse of old wooden houses and resulting casualties, ii) damage to reinforced concrete buildings, iii) simultaneous multiple fires, iv) crippling damage to lifelines, v) extensive damage to harbor constructions, vi) damage to railroad constructions, vii) damage to elevated roads, and viii) damage to subterranean constructions.

The damage was spread across 15 prefectures centered around Hyogo Prefecture and resulted in more than 5,500 deaths, 41,000 injured persons, 100,000 residences that were totally destroyed and 100,000 residences that were halfway destroyed. This was the largest earthquake since the end of World War II and was on a scale larger than the earthquake that struck Fukui Prefecture in 1948 which resulted in 3,848 deaths, 22,203 injured persons and 36,184 homes damaged.

Regarding lifelines, securing drinking water was difficult from the viewpoint of risk management concerning food provisions, and waterworks businesses and city water supply businesses were severely damaged in 68 cities, towns and villages in nine prefectures, including Hyogo and Osaka. This disrupted the water supply to approximately 1,290,000 houses that accounted for 90% of the all the households served.

Considering traffic-related damage from the perspective of transporting necessary provisions and goods, damage was inflicted upon the Hanshin Expressway Kobe Line, the Wangan Line, the Nagoya-Kobe Expressway and the Chugoku Motorway. The damage was serious and extensive; bridge piers collapsed, bridge girders fell, and road surfaces caved in. On railroads as well, we witnessed serious damage primarily to elevated bridges and stations on the Tokaido-Sanyo Shinkansen, the conventional Sanyo-Tokai Main Line, the Hanshin Line, the Hankyu Kobe Line and the Kobe Rapid Railroad. This extensive damage led to heavy road traffic jams in the disaster-stricken

areas, thereby making it enormously difficult to transport provisions and goods.

As for damage to retailers that had supplied foodstuffs to residents, many shopping malls collapsed or caught fire, and many buildings were devastated or damaged in Kobe City, Nishinomiya City and on Awaji Island. Under these circumstances, many department stores, supermarkets and retail stores were compelled to close for some time. Furthermore, even stores that sustained little direct damage had to close due to the destruction of lifelines. Although some convenience stores were fortunate enough to escape disaster and were able to open for business as soon as electricity was restored, the Earthquake caused extensive damage.

Immediately following the earthquake many volunteers rushed to the area and were involved in various important roles.

During the month following the disaster a total of 620,000 volunteers were involved within Hyogo Prefecture and broken down on the basis of activities undertaken, it is estimated that on average each day 12,000 people were involved in shelters, 3,700 people were involved in transporting materials and 4,300 people were involved in food preparation and community activities, with an average of 20,000 volunteers involved each day, based on estimates by Hyogo Prefecture.

There are different forms of independent disaster control activity, and we have divided them into: i) activity by disaster control organizations formed by regional residents prior to the disaster and ii) activity carried out voluntarily by residents of the disaster-stricken areas at the time of the disaster. It appears that in the middle of the grave damage that struck the residents, there were a great number of cases in which residents in the neighborhoods voluntarily participated in disaster management activities as well as in systematic activities by independent disaster control organizations.

At the Fire and Disaster Management Agency, staff on night duty received information on the earthquake at 06:05 a.m. on January 17 from the Meteorological Agency. They confirmed that some regions had been struck by an earthquake measuring 5 or more on the Japanese seismic scale. Based upon the Manual on the Emergency Measures of the Fire and Disaster Management Agency, they then contacted prefectural governments that had recorded a tremor of 4 or more and requested them to take proper countermeasures and report their damage. Subsequently, they began to collect information. At 09:00 a.m., the Fire and Disaster Management Agency's Disaster Countermeasures Headquarters for the Earthquake in the Southern Districts of Hyogo Prefecture (later changed to the Fire and Disaster Management Agency's Disaster Countermeasures Headquarters for the Great Earthquake in Hanshin and Awaji) was

established to direct the necessary measures.

At 10:00 a.m. the Director-General of the Fire and Disaster Management Agency received a request for help from the Governor of Hyogo Prefecture. He immediately made a request for dispatch to the fire defense headquarters of other prefectures that had been on alert. He gradually increased the number of prefectures to which he made his requests.

The Headquarters probed the actual contents of the help needed by the Hyogo Prefectural Government. In the afternoon of the same day, they asked the local governments of each prefecture in the vicinity of Hyogo Prefecture which items, among life-related supplies that were urgently needed, they would be able to send. They requested each government to forward blankets, hard crackers and other necessities and to dispatch water supply vehicles.

In addition, they opened an “information desk concerning cooperation from each prefecture” within the Disaster Countermeasures Headquarters, through which they made contact with and coordination among local public bodies that had sustained damage and prefectural governments that would extend their assistance. They also strengthened the communications network and requested cities, towns and villages all over Japan for their material aid and cooperation.

The Ministry of Agriculture, Forestry and Fisheries set up the Field Disaster Countermeasures Headquarters for the Supply of Foods, etc., through which 3,000 tons of polished rice and 100,000 meals of hard crackers were forwarded. With cooperation from the food industry and agricultural cooperative-related organizations, the Ministry provided 27,320,000 loaves of bread, 13,790,000 box meals and 67,000 tons of powdered milk for babies.

The Ministry of Health and Welfare requested organizations in medicine-related businesses to procure medical and pharmaceutical products, which were supplied as relief goods including cold medicines for 410,000 persons and stomach medicines for 190,000 persons.

The Ministry of International Trade and Industry requested organizations in the field of life-related industries to procure goods and provided life-related supplies including water, canned provisions, blankets, clothes and underwear to disaster-stricken areas.

The Japan Red Cross forwarded to shelters goods transported from its branch offices all over the country in coordination with and cooperation from the Disaster Countermeasures Headquarters in Kobe City and other areas. At the same time, the Red Cross allocated the relief goods entrusted by enterprises and others to assist the lives and self-reliance of disaster victims in an effort to meet some of their changing

needs as well.

Some people began to complain of a sense of psychological instability or mental stress due primarily to physical and mental fatigue caused by their prolonged living in shelters. The Red Cross dispatched experts to shelters and ten key first-aid stations over a period from February to March to provide counseling on psychological disorders to disaster victims.

Hyogo Prefecture received earthquake information from the Kobe Marine Meteorological Observatory at 06:50 on the morning of the earthquake and set up the Prefectural Disaster Countermeasures Headquarters at 07:00 a.m. Immediately after the establishment of the Headquarters, it was difficult to get in touch with related organizations owing to the overcrowding of communications lines and paralyzed transportation networks. It was also difficult for many government employees to come to the office. Under such circumstances, every effort was made to collect information on disasters, etc. Hyogo Prefecture moved forward developing the structure for relief activities, asking related organizations such as the Police Headquarters and Self-Defense Forces to do all they could in lifesaving activities, including finding the missing, and also transmitted their requests for help to wider areas.

Subsequently, it was estimated that the number of evacuees would exceed 170,000 persons. Therefore, they implemented top priority emergency measures that consisted of the securing of food provisions, drinking water and blankets, emergency medical supplies and measures to control damage from aftershocks and secondary damage.

Kobe City also established the Kobe City Disaster Countermeasures Headquarters at 07:00 a.m. on the day the earthquake occurred. They pushed forward emergency and rehabilitation measures. At the same time, they implemented a great number of measures including public relations material on disaster measures, counseling to citizens, relief measures for disaster victims and considerations for the elderly, the disabled, foreigners and children.

Disasters are not momentary. As time goes by, the damage goes through different phases. The circumstances in which disaster victims face change, and the measures required under these changing circumstances also need to be altered. To respond quickly and take timely measures required by a changing situation, it is essential to continue with risk management measures through learning from the activities of the local public bodies of the disaster-stricken areas.

In the Review Meeting for Earthquake Disaster Countermeasures held from March to

April 1995, opinions were exchanged about guidance for individuals on preparing emergency take-out goods including minimum water, food and clothing, and about public stocks by local public bodies and commercial stocks. The waterworks were seriously damaged by the earthquake, whereby water services to some 90% of all households stopped. Based on this experience, the participants of the meeting discussed securing water from a variety of sources.

The “Special Measures Law on Earthquake Disaster Prevention” issued on June 16, 1995 provides that the five-year plan of urgent earthquake disaster countermeasures projects include improvement in equipment and facilities to secure drinking water as well as food reserve warehouses emergencies during earthquake disasters. The “Disaster Countermeasures Basic Law” has twice been extensively revised, in June 1995 and in December 1995. As a result, traffic regulations were strengthened for transporting emergency goods.

Considering the prefectural regional disaster control plan, as of April 1, 2002, earthquake disaster control measures plans were formulated in 47 prefectures, and storm and flood control measures plans were prepared in 27 prefectures. Similarly, nuclear power disaster control measures plans were formulated in 21 prefectures, volcanic disaster control measures plans, in 15 prefectures, forest and field fire control measures plans, in 15 prefectures and snow disaster control measures plans, in nine prefectures. That is, many public local bodies reviewed their plans based on the lessons learned from the Great Hanshin-Awaji Earthquake.

The next section summarizes the important issues particularly concerning food provisions.

Issues concerning food at the time of the Great Hanshin-Awaji Earthquake

This section particularly focuses on issues pertaining to food at the time of the Great Hanshin-Awaji Earthquake. We select and summarize important issues in detail.

1. Damage

A large-scale earthquake struck the Hanshin Region and the Awaji District on January 17, 1995, whereby water supply facilities were severely damaged in 68 cities, towns and villages in nine prefectures including Hyogo and Osaka. The waterworks were particularly disrupted in the nine cities in the Hanshin-Harima District including Kobe City and Nishinomiya City in Hyogo Prefecture, and in one city and seven towns in the Awaji District including Hokutan-cho and Tsuna-cho. That is, in ten cities and seven towns, water services stopped in 1,265,730 houses, 90% of all the 1,403,000 houses that had received water supply services. In Osaka Prefecture, the waterworks failed to supply water to 23,738 houses in 22 cities and two towns, including Osaka City and Toyonaka City. To summarize, water could not be supplied to 1,289,468 houses in 32 cities and nine towns in total in these two prefectures.

Approximately one month after the earthquake, the Fire Prevention Division of the Kobe City Fire Bureau conducted a “Survey of citizens’ behavior in the Great Hanshin-Awaji Earthquake.” In response to the question, “what could you have done or what could you have prepared beforehand?” 16.7%, the highest rate, responded that they wanted “drinking water” at hand. Furthermore, the survey included the question, “what was the most useful thing in preparing for an emergency?” A very high percentage of respondents, 58.8%, answered that it was “drinking water.” These results clearly indicate that it was difficult to get hold of drinking water immediately after the earthquake.

With respect to damage to traffic infrastructure that greatly affected the transportation of necessary goods, there was extensive damage such as bridge piers collapsing, bridge girders falling and road surfaces caving in on highways including the Hanshin Expressway Kobe Line, the Wangan Line, the Nagoya-Kobe Expressway and the Chugoku Motorway. Railroads also suffered extensive damage chiefly to elevated bridges and station buildings on the Tokaido-Sanyo Shinkansen, the conventional Sanyo-Tokaido Main Line, the Hanshin Main Line, the Hankyu-Kobe Line and the Kobe Rapid Railway. This damage caused massive traffic jams in the disaster-stricken areas, thereby making the transportation of provisions and goods enormously difficult. The situation was aggravated by vehicles from outside the areas whose drivers were

unfamiliar with the roads and the fact that goods were transported in vehicles not originally meant for transporting goods. In some cases, relief goods caught in traffic jams had to be unloaded at ward offices or at shelters on the way.

To cope with delays in the transportation of goods due to shattered traffic networks and heavy traffic congestion, in some cases, goods and drinking water were transported as daily necessities for emergency in the helicopters of the Fire Defense Agency and the Self Defense Forces. The Hyogo Prefectural Government opened a temporary heliport to deal with the issue. In some cases, transport vehicles proceeded behind police escorts, for instance, from the Kyoto Prefectural Police and the Osaka Prefectural Police. In other cases, it was possible only for emergency vehicles to drive smoothly on certain highways although they were terribly damaged. In addition, special measures were taken to exempt drivers from tolls. However, it was difficult even for emergency vehicles to transport provisions and goods on schedule. It has been pointed out that it is necessary to regulate traffic and give right of way to vehicles carrying emergency goods and to vehicles with a special mission on roads including regular roads. The issue of traffic regulation is included in the Revisions of the Disaster Countermeasures Basic Law in June and December 1995.

Many retail stores that generally used to sell foodstuffs were forced to close for a long period in many districts such as Kobe City, Nishinomiya City and Awaji Island owing to shopping malls devastated or burned down by fire and buildings destroyed. Similarly, stores that sustained little direct damage were also compelled to close because of the extensive damage to lifelines.

According to the findings of the “opinion poll concerning disaster management” conducted by the national government in 2002, more than 80% of the respondents support administrative assistance with the supply of even luxury goods including sweetener, cigarettes and liquor as well as daily necessities for a fee by private enterprises such as supermarkets and convenience stores at the time of disaster. These findings indicate that most people value the supply of provisions at the time of disaster. At the same time, they ask for administrative organizations to secure transport routes for relief goods including provisions at the time of emergency in the future.

2. Activities by private organizations and administrative organizations

1. Lists of main activities

We briefly summarize food-related activities and measures by private organizations and administrative organizations confronted with severe, extensive damage or receiving information on such damage as described above.

(1) Activities of the main private organizations

Organization	Duration	Contents of activity
Council of Social Welfare	Jan. 23-	<ul style="list-style-type: none"> ●They provided hot soup through municipal councils from neighboring prefectures, etc. ●Toyonaka Council dispatched a total of 638 volunteers 67 times to distribute meals.
Red Cross Society	Jan. 25- Feb. 6	<ul style="list-style-type: none"> ●They held rice-cake making events and prepared hot meals, etc., at 51 shelters. ●They dispatched 1,898 people in total to provide 197,455 liters of drinking water and 309,100 meals.
Nishinomiya Volunteer Network	Feb. 4-	<ul style="list-style-type: none"> ●They collected and forwarded relief goods (all kinds of foodstuffs and daily necessities).
Fukuoka University	Jan. 31- Feb. 3	<ul style="list-style-type: none"> ●They allocated provisions and drinking water to shelters. ●They distributed cups of tea on the streets. ● The cooks cooked rice and other foodstuffs at shelters.
Ritsumeikan University	Jan. 30- March end	<ul style="list-style-type: none"> ●They forwarded goods to disaster-stricken areas and dispatched volunteers. In the field, they participated in selecting and separating relief goods.
Himeji Dokkyo University	Jan. 30-	<ul style="list-style-type: none"> ●They participated in cooking meals, carrying drinking water and separating relief goods at schools in Kobe City and at hospitals in Himeji City.
Kansei Gakuin University	Jan. 21-	<ul style="list-style-type: none"> ●They prepared hot meals, etc., and separated relief goods. ●They set up the Relief Goods Center at the headquarters, and identified which goods each shelter needed and what could be provided, and then allocated them to each shelter ●They handed out a document to the leaders of each shelter for taking in the self-management of the shelter. Thus, they helped the residents of a shelter organize their own groups so that they could participate in cooking and allocating goods (on January 23). ●They opened the delivery-service coffee shop, “Shalom.”
Women’s Fire Brigade of Kita-ku, Kobe	Jan. 17-	<ul style="list-style-type: none"> ●In cooperation with regional women’s associations, they prepared hot meals, etc. (They made 62,000 rice balls by the end of January, and in February, made soup 27 times at ten shelters.)

Self-ruling Disaster Control Promotion Council of Sumimoto-Tamon district in Kobe		<ul style="list-style-type: none"> ●They established their own headquarters from which they distributed meals to shelters within their district.
Disaster Control Society in the Council for Yogai District in Nishinomiya	Jan. 17-	<ul style="list-style-type: none"> ●They assigned several officers to each shelter so that they could allocate relief provisions and goods from the city government. ●They negotiated with <i>sake</i> brewers within the district to the borrow water tanks that they installed at schools and in front of community centers, which were being used as shelters.
JT Nishinomiya Office	Jan. 18-	<ul style="list-style-type: none"> ●They drew water from their own wells, which was available to the earthquake victims.
Koyo-en League for Disaster Control in Nishinomiya	Jan. 17-	<ul style="list-style-type: none"> ●They allocated their reserves of hard crackers and juice to the evacuees at shelters. ●They negotiated with the city government so that water was also provided to the people of Koyo-en.
Self-ruling Disaster Control Association of Imazu District in Nishinomiya		<ul style="list-style-type: none"> ●They prepared hot meals in the field. They allocated relief goods to each shelter.
Kobu Disaster Control Association in Nishinomiya	Jan. 18-	<ul style="list-style-type: none"> ●They prepared hot meals for people aged 75 and over living in municipal or prefectural housing quarters. ●They provided information by flier on the allocation of relief goods.
Disaster Control Association of Namaze District in Nishinomiya	Jan. 17-	<ul style="list-style-type: none"> ●They prepared hot meals in the field.
Women's Fire Brigade of Nojima in Awaji	Jan. 17-March end	<ul style="list-style-type: none"> ●The members of the fire brigade separated and allocated relief goods such as foodstuffs. ●The members of the brigade purchased food materials from food stores in the region by turns, and cooked for evacuees using school cooking utensils.
Women's Fire Brigade of Asano on Awaji Island	Jan. 17-March end	<ul style="list-style-type: none"> ●They separated and allocated relief goods. ●The members of the fire brigade helped manage shelters such as by cooking and cleaning with the cooperation of evacuees and volunteers

(2) Measures taken by main administrative organizations

Organizations	Duration	Contents of activity
Fire and Disaster Management Agency	Jan. 17-	<ul style="list-style-type: none"> ●They gathered the opinions of the Hyogo Prefectural Government concerning the aid needed, and at the same time that afternoon, they asked the governments of the neighboring prefectures what kind of life-related goods they could offer immediately. They then requested that hard crackers be forwarded, and that water supply vehicles be dispatched. ●They tried to establish a smooth transportation system of goods by including contributions from private groups and individuals into each prefectural transportation system, considering the separation work necessary for the disaster-stricken areas. ●They tried to grasp and collect information on goods in shortage, made inquiries, and informed each prefectural government (Jan. 21-)
Activity by helicopters for fire-fighting and disaster control	Jan. 17- (Request from Governor of Hyogo Pref.)	<ul style="list-style-type: none"> ●It was difficult for vehicles to promptly transport goods because of heavy traffic jams and damaged road networks. Thus, they used some 10 helicopters every day of the 35 helicopters used for firefighting and disaster control. Fire stations all over Japan are equipped with emergency transportation for transporting goods, such as provisions and people.
Ministry of Agriculture, Forestry and Fisheries		<ul style="list-style-type: none"> ●They set up field headquarters for provisions and supplied polished rice and hard crackers. ●They supplied bread, boxed meals, milk powder for infants, milk, instant noodles, canned provisions, fruit, drinking water and beverages with the cooperation of the food industry and organizations related to the Agricultural Cooperative Association.
Ministry of Health and Welfare		<ul style="list-style-type: none"> ●Water supply enterprises provided 757 water supply vehicles, approximately 100,000 polyethylene tanks, some 210,000 polyethylene bags and about 30,000 packs of water.
Ministry of International Trade and Industry		<ul style="list-style-type: none"> ●They requested that organizations in life-related industries procure goods and forward life-related goods including water and canned provisions to disaster-stricken areas.
Red Cross Society		<ul style="list-style-type: none"> ●They allocated relief goods, including approximately 300,000 meals. ●They distributed donated goods entrusted by enterprises and tried to meet the changing needs of the disaster victims to assist them and provide self-reliance with prolonged stays at the shelters.
Ground Self-Defense Force	Jan. 18-	<ul style="list-style-type: none"> ●They assisted with cooking rice, distributing meals, supplying water and transporting goods (provisions and drinking water).
Maritime Self-Defense Force	Jan. 18-	<ul style="list-style-type: none"> ●They transported goods (provisions for emergencies, drinking water and provisions, milk and boxed meals) and supported the supply of water.

Air Self-Defense Force	Jan. 18-	<ul style="list-style-type: none"> ●They transported by air (polyethylene water tanks and provisions). ●They transported goods (provisions) and assisted with cooking rice and water supply.
Maritime Safety Agency	Jan. 17-	<ul style="list-style-type: none"> ●They established the disaster countermeasures headquarters within the Fifth Regional Coast Guard Headquarters. ●They investigated the conditions of damage in the harbor and coastal areas, including Kobe Port, and secured the safety of ships. Furthermore, they transported patients in a critical condition, emergency goods and water.
Hyogo Prefecture	Jan. 17-	<ul style="list-style-type: none"> ● They supplied emergency provisions to disaster victims. ● They secured rice for disaster relief as soon as possible. ● They supplied disaster relief goods from all over Japan for about two months starting from Jan. 20. ● They rationed rice to the residents of temporary dwellings. ● They assisted the activities of the Self-Defense Force in the cooking vehicles, and they prepared hot meals (181 places from January to March) ● They distributed fresh vegetables and vegetable salads. ● They supplied cooking utensils, etc. for preparing hot meals in the field. ● They organized an open market through the Agricultural Cooperative Association and the Japan Fisheries Cooperatives (7 times) ● They provided information on the supply of fresh foodstuffs and cooking utensils to smooth the procurement of provisions by city or town. ● They developed an emergency food supply system in the prefectural government to help the city or town whose provisions it was difficult to secure. ● They requested production areas outside the prefecture to ship their products to wholesale markets in the disaster-stricken areas. ● They strengthened the supervision of food prices in the disaster-stricken areas. ● They inspected the businesses of mass retailers, food retail stores and rice stores.
Ashiya City	Jan. 18-	<ul style="list-style-type: none"> ●They installed accommodation facilities (tents) with a capacity of 100 persons for volunteers, where three meals were provided.
Kyoto City	Jan. 17-Ma. 16	<ul style="list-style-type: none"> ●They supplied 10,500 meals and 6,000 bottles of drinking water.

Kobe City	Jan. 17-	<ul style="list-style-type: none"> ● They procured, separated and forwarded relief goods (staple foods, blankets, etc.) ● They received and separated relief goods from countries overseas (22 countries and 52 organizations) and adjusted their transportation. ● They supplied water as an emergency measure. ● They transported relief goods in helicopters. ● Upon the request of medical organizations, they procured and transported meals, water and medical supplies. ● They requested mass retailers to ensure a stable supply of life-related goods including food at stable prices.
Osaka Municipal Fire Department	Jan. 17-Jan 26	<ul style="list-style-type: none"> ● Provisions were purchased from business establishments in Osaka City, and some bakeries donated bread. They transported them in fireboats to the disaster-stricken areas ● They implemented activities to supply food and water for firefighters dispatched from the Osaka Municipal Fire Department, the staff of the Kobe City Fire Bureau and firefighters from other cities.
Osaka Municipal Waterworks Bureau	Jan. 17-Jan. 26	<ul style="list-style-type: none"> ● They provided drinking water.
Kyoto City Fire Department	Jan. 17-Jan. 23	<ul style="list-style-type: none"> ● They transported provisions (approximately 6,500 meals) to the Kobe City Fire Bureau in helicopters, nine times in total. ● They transported drinking water to the Kobe City Fire Bureau in a helicopter three times in all. ● They transported provisions (1,000 meals) and drinking water to the Kobe City Fire Bureau in vehicles.
Yokohama City Fire Bureau	Jan. 20-Jan. 25	<ul style="list-style-type: none"> ● They supplied provisions to firefighters from all over Japan twice.

2. Procurement and allocation of relief goods including provisions

As outlined in the above section, the main activities and measures taken by various organizations consist primarily of procuring and allocating relief goods, particularly provisions. In the following section, we consider the procurement and allocation of goods in more detail.

(1) Understanding and procuring the quantities required

As an initial response, the municipal governments of disaster-stricken areas procured provisions based upon the estimated number of disaster victims, but they did not have a good grip on the actual damage conditions.

The Disaster Countermeasures Headquarters of Hyogo Prefecture began to “secure provisions, drinking water and blankets” based upon their initial estimation of the number of victims as 170,000. However, towards late afternoon of the same day, they projected the number of displaced persons to be two million, for which they needed to secure goods. The cities and other related organizations tried to collect information on the number of evacuees at shelters. As time went by, the number of victims rose. Furthermore, the prefectural government and each municipal government separately tried to grasp the needs of the victims. On the other hand, information on needs collected by the prefectural government was transmitted to municipal governments. Information from the government overlapped with information collected by each municipal government, causing confusion in some cases.

Many municipal governments of disaster-stricken areas attempted, often in vain due to overcrowded telephone lines, to contact business establishments from whom goods could be procured. It was necessary to procure goods from the peripheral areas of the disaster-stricken districts because many establishments suffered damage. Some municipal governments gave school lunches, which were now unnecessary since the schools were closed, to disaster victims.

In Hyogo Prefecture, employees primarily from the Agriculture, Forestry and Fisheries Department prepared rice balls at school lunch centers, etc. Kobe City Government contacted food wholesalers with whom it had agreements in accordance with regional disaster control planning. However, all wholesalers were affected by the earthquake. It desperately tried to contact neighboring municipal governments, seeking business establishments outside the city. On the other hand, employees of Itami City Government began to procure goods in vehicles due to the interrupted telephone service. They gave up procuring goods in the city on witnessing the severe damage inflicted on supermarkets, and tried to procure goods from establishments outside Itami City. Akashi City Government supplied boxed meals and bread prepared for school students as well as preserved hard crackers to evacuees.

In the initial procurement of goods, large local supermarkets and consumers’ cooperatives greatly cooperated. For instance, the “Co-op Kobe” and Daiei assigned their employees to the Disaster Countermeasures Headquarters of Kobe City as liaison persons, who directly sent instructions about the procurement of goods to their stores. Similarly, some municipalities received the full cooperation of local supermarkets. “Co-op Kobe” and others supplied provisions and goods in stock without charge.

Many municipal governments in other regions extended assistance such as supplying goods, etc. However, it was rare for the disaster-stricken municipal governments to

request help. Often, they accepted help only when it was offered.

(2) Receipt, separation and allocation of goods

Goods and provisions began to arrive around noon on the same day. They were delivered to the city office or the ward office of the disaster-stricken municipality. Loading and unloading was very hard work, particularly when there was a shortage of storage space and manpower. Goods piled up in the parking lots of city offices and ward offices that received goods without storage space. Office staff and volunteers had to work around the clock because they did not know in advance when goods would arrive due to traffic jams.

As stated in (1), amidst the initial confusion when the actual state of damage was not clear, the goods were delivered without people knowing what goods would arrive or what goods each shelter needed. Self-management group members of shelters sometimes came to the office to pick up what they needed, which was effective because they had a good understanding of the necessary goods and the necessary quantities. Goods were generally not directly supplied to individuals, however.

To save the trouble of unloading goods, city employees rode in vehicles carrying goods to shelters. That is, goods were delivered in large trucks. As a result, with this allocation method, goods could only be forwarded to shelters along trunk roads.

(3) Procurement and allocation of goods at shelters

Immediately after the earthquake, each shelter suffered an obvious lack of provisions and goods for the number of evacuees. Hence, there was confusion at some shelters at the time of distribution. In other shelters, goods were not allocated because they were not sufficient for all evacuees. Confusion ensued after the earthquake even in areas comparatively little damaged. The confusion subsided when people began to understand their situation and that water and provisions were not gravely lacking.

There were various ways of dealing with the situation. Some shelters set up a smoother allocation system, or the evacuees themselves began to procure provisions. At some shelters, small quantities of food were equally rationed among evacuees to be fair to everyone. At other shelters, priority was given to the weaker. Similarly, the leaders of shelters and school employees tried to procure goods from stores in the vicinity. Sometimes, people in the neighborhood prepared hot meals that were then distributed to evacuees.

In some disaster-stricken areas, some supermarkets and convenience stores opened again quite soon although they had suffered damage. Thus, they played an active role in procuring provisions. They used motorbikes to transport goods to avoid traffic jams. Disaster victims made a long queue in front of an open store, and the store had to limit the amount purchased per person, so as many people as possible could procure goods.

As stated in Section **1. Damage**, more than 80% want administrative support in the supply of daily necessities by private establishments such as supermarkets and convenience stores for a fee at the time of disaster. Improving transportation routes for provisions and other necessities in cooperation with the administration and with private enterprises at the time of disaster is required for the future.

Procurement and distribution can be divided into two: those for disaster victims and those for relief activity squad members. It is critically important for squad members to receive support from the rear so that they can continue firefighting and relief activities for a prolonged period. For instance, it is necessary to replace members who are fatigued, to take rests and receive food and drink. In fact, however, it is pointed out that such a support system has not been developed in a number of cases, although relief squad members have to continue their activities under harsh conditions. However, disaster victims also face the same conditions. Hence, in field activities, we should simultaneously implement relief activities for the disaster victims and support for relief squad members.

The provisions to be supplied are necessarily those that keep for a long time, considering the long transportation to afflicted areas. In some disaster-stricken areas, some evacuees said that there was too much preserved food, and not enough food of other kinds. It was difficult to prepare meals for the elderly, and it was hard to obtain milk powder for babies.

Four weeks after the earthquake, the Broadcasting Culture Research Institute conducted a “Questionnaire on disaster-stricken areas,” which investigated the sense of satisfaction about the information received. The findings demonstrate that there was a low level of satisfaction with “information on lifelines” and “information on the distribution of relief goods.” “Life-related information” and “information on distribution” became meaningful only when details of a small area are provided. Conditions changed over time after the occurrence of the disaster, and these changing conditions required changing measures. It is essential to learn lessons from the behavior of and the measures taken by private organizations and administrative organizations in this earthquake and to promote risk management measures in order to meet these changing conditions.

(4) Securing food hygiene in afflicted areas

In poor circumstances in which lifelines such as water and gas supply systems were destroyed resulting in no supply of water and heat, it was very necessary to feed a large number of disaster victims by supplying provisions as relief goods as well as meals cooked or processed outside shelters such as boxed meals. Hence, it was critical to maintain food hygiene levels.

To prevent the danger of food and drink poisoning as part of food hygiene measures, the Hyogo Prefectural Government emphasized guidance on securing the hygiene of boxed meals distributed at shelters and of cooking by volunteers.

For boxed meals provided at shelters, city government employees obtained information on storage places and storage conditions, planning educational activities so that food would be eaten without becoming stale. According to this plan, on January 23, employees of each public health center systematically visited the related facilities under its jurisdiction in cooperation with public health employees in and outside Hyogo Prefecture.

They gave guidance to volunteer cooks primarily on hand-washing and disinfecting. Considering the fact that they had to cook meals in facilities without water or hand-washing or disinfecting equipment, they made every effort to improve cooking conditions so that their guidance could be followed. That is, during their visits, they distributed disinfectant including soap, alcohol-soaked tissues and hygiene products such as disposable gloves to prevent the naked hand directly touching the food. Volunteer groups supplying meals to elderly people in need of nursing care and living in temporary dwellings tried to prevent food-related accidents through food hygiene lectures.

The Hyogo Prefectural Government continually implemented hygiene controls especially on toilet facilities that would seriously affect food hygiene. At the same time, government employees made contact with each prefectural government with jurisdiction over the cooking establishments of boxed meals provided at shelters, requesting to supervise and give guidance concerning the hygiene control of cooking facilities, correct labeling procedures and shipping plans. In addition, they gave guidance to municipal governments where the shelters were situated to improve the storage methods of provisions to prevent food poisoning caused by the rising temperature. At the same time, they repeatedly asked residents to pay attention to this issue. From June to August when there was a higher risk of food poisoning, they simultaneously supervised mainly caterers and food-serving facilities in supplying meals or boxed meals to groups. They

also performed various tests on foodstuffs that would decay quickly. Furthermore, they posted notices on the prevention of food poisoning at railway stations and other places that were easily visible, and handed out fans and packets of tissues with the same information to educate the general public.

Based upon these experiences in the Great Hanshin-Awaji Earthquake, food hygiene and water supply measures at the time of the disaster are discussed in the “Manual on Health Hazard Management” of Hyogo Prefecture (March 2002).

(5) The beginning of recovery

The Hyogo Prefectural Government made every endeavor to understand the damage to the food industry within the prefecture through the Prefectural Food’s Industrial Conference. When it was discovered that a certain establishment suffered serious damage, the government discussed its rehabilitation with the Prefectural Food’s Industrial Conference as required.

To help the recovery of the food industry in Hyogo Prefecture, the government organized the first Liaison and Coordination Meeting for the Promotion of the Food Industry on April 20, consisting of nine members from groups and enterprises that sustained particularly substantial damage. Subsequently, the second and third conferences were held on May 25 and June 5, respectively, in which guidelines on rehabilitation were prepared.

The guidelines were distributed to related enterprises. Their contents were eventually reflected in the “The Great Hanshin-Awaji Earthquake Reconstruction Plan” as well as rehabilitation measures for the food industry.

3. Based on lessons learned from the Great Hanshin-Awaji Earthquake

In response to the great number of lessons learned and the issues to be reviewed based on the Great Hanshin-Awaji Earthquake, various measures have been taken such as adding and changing ordinances and administrative measures to deal with future disasters. We introduce some measures related to food provision in the following sections.

1. A review meeting on earthquake disaster control measures

A meeting of learned people and the employees of administrative disaster control organizations was held from March 10 to April 20, 1995. The objective was to review

how a pragmatic regional disaster control plan should be structured and how it can be translated into concrete terms so that regional disaster control planning prepared by local public bodies can be effectively used.

Considering the review of food provisions, the following issues have been pointed out on the saving and rationing plan of provisions, etc.

- 1) Necessity of advising citizens to prepare emergency take-out goods**
- 2) Benefits and problems of public stocks by local public bodies and commercial stocks: necessity of exchanging information on stocks among local public bodies**
- 3) Procuring life-related goods and developing rationing organizations**
- 4) Necessity of distributing equipment for rescue, relief and evacuation as well as disaster control-related goods including water supply and food supply apparatus**
- 5) Necessity of reviewing goods reserved for those in charge of disaster control**

Particularly for 1), the “Questionnaire on disaster-stricken areas,” conducted four weeks after the earthquake, revealed that only 3% of families in the Hanshin District had prepared food provisions and water for an emergency before the earthquake. The people of Hanshin were indeed “optimistic” about their personal preparedness for disaster. On the other hand, Hyogo Prefectural Kobe Consumer Information Center of Hyogo Prefecture carried out a survey on how the lives of people in Hyogo Prefecture changed after the earthquake. According to the analytical results, “After the Earthquake, people improved their preparedness; they prepared take-out bags and food provisions for an emergency. In addition, they confirmed a place where all family members would meet at the time of disaster. They no longer put things on furniture surfaces or on top of electric appliances.” Thus, after the earthquake, people began to be concerned about personal disaster control measures.

Only 53% of families took measures against an earthquake such as storing food, water and medicines and fastening furniture, according to the “Questionnaire on awareness of disaster control” carried out by NHK Sendai Broadcasting Station to Sendai residents who experienced the Offshore Earthquake of Miyagi Prefecture (in 1978). Thus, even in areas afflicted by large-scale disasters and where there have been various disaster control measures because of past disasters, people lose their sense of urgency and they become less well prepared as time goes by. Hence, it is very important to continually carry out educational activities.

In the fields of firefighting, rescue and first aid and relief activity, the following issues were pointed out.

1) As measures against traffic jams at the time of disaster, it is first necessary to regulate traffic. Second, it is essential to let people know that general vehicles are restricted at the time of disaster.

2) It is necessary to improve water supply for firefighting, using natural water (sea water, river water and wells) and to install earthquake-proof water tanks both for firefighting and drinking.

As for 2), learning from the failure of water supply caused by the earthquake, the Kochi City Fire Department decided to check the condition and the locations of its hydrants and list them on a “Map of fire hydrants.” This map will be used in future firefighting activities.

Members have also pointed out the necessity of storing goods in evacuation sites. Moreover, it is necessary to store a variety of provisions so that hot meals can soon be served. Thus, provisions should include retort meals and canned provisions in addition to hard, dry crackers. It is also recommended that gruel and milk powder be stored for the elderly and for infants. That is, provisions should be selected considering evacuees.

In handling donations of goods and money, it is especially important to establish receiving offices, forwarding points and distribution points for relief goods and money sent by individuals, enterprises and groups as soon as possible.

2. Stipulation of the Special Measures Law for Earthquake Disaster Control Measures

On June 16, 1995, the Special Measures Law for Earthquake Disaster Control was stipulated, accelerating efforts towards establishing a disaster-resistant community. This law provides that the five-year plan of the urgent earthquake disaster countermeasures projects should include **regulations concerning the improvement of equipment and facilities to secure drinking water at the time of earthquake disaster, and warehouses to store provisions for emergencies.**

Special Measures Law for Earthquake Disaster Control (Law No. 111 of 1995) – A partial excerpt

(Contents of the five-year plan for urgent earthquake disaster countermeasures projects)

Article 3: The five-year plan for urgent earthquake disaster countermeasures projects shall pertain to improvement in the facilities listed below and shall stipulate issues concerning facilities that conform to the standards stipulated by the competent Minister.

16: Wells, storage tanks, swimming pools and in-house power generator and its facilities or equipment

17: Warehouses for provisions for emergencies and materials/equipment for relief activities necessary at the time of earthquake disaster.

3. Revision of the Disaster Countermeasures Basic Law

The “Disaster Countermeasures Basic Law” was extensively revised twice in June and December 1995, thereby strengthening traffic regulations for the transportation of goods for emergencies.

Revised items	After the revision	Before the revision
Traffic regulations by the Prefectural Public Safety Commission	<p>Article 76 (Traffic regulations, etc. at the time of disaster)</p> <ul style="list-style-type: none"> ○ The Law authorizes not only the applicable prefectural public safety commission and the prefectural public safety commissions in the immediate vicinity but also public safety commissions in the neighborhoods to regulate traffic. ○ The area to be regulated is expanded to include districts as well as sections of roads. ○ Vehicles granted the right to pass are expanded to include “emergency passage vehicles” from “emergency transporting vehicles.” ○ The prefectural public safety commission that has enforced the traffic regulations will try 	<p>Article 76 (To ban or restrict traffic at the time of disaster)</p> <ul style="list-style-type: none"> ○ The power to regulate traffic rests with the applicable prefectural public safety commission and public safety commissions in the immediate vicinity. ○ The area to be regulated is a section of a road. ○ A vehicle given the right of way is an “emergency transporting vehicle.”

	to provide the necessary information to the general public for smooth enforcement.	
Action to be taken by drivers	<p>Article 76-2</p> <ul style="list-style-type: none"> ○ When traffic is banned in a section of a road, drivers must move their cars to sections outside the banned section. ○ When traffic is banned within a certain district, drivers must move their cars to places other than roads. ○ The driver of a vehicle parked within a banned district must move and park his/her vehicle in compliance with the directions of police officers, when he/she is so notified. 	No regulations
Measures to be taken by police officers	<p>Article 76-3</p> <ul style="list-style-type: none"> ○ When a police officer finds any car that interferes with traffic within a banned area, he/she shall may order its driver to take the necessary action, such as moving the car. ○ When a person who has been given an order does not react appropriately, the police officer can take action. ○ In the absence of a police officer, a self-defense official or fire brigade member who has been dispatched under orders can exercise the said power. 	No regulations

4. Memoranda of the people concerned

We have selected and outlined accounts that are relevant to food provisions from the memoranda written of those involved in the Great Hanshin-Awaji Earthquake. We believe that the various opinions and problems concerning food-related activities and measures will be of great use in formulating future measures.

1. Voices of the general residents

Field	Content	Number of Opinions
Information network	It is necessary to consider, for example, superimposition and sign language so that persons with disabilities can understand the information essential for living at the time of emergency, such as information on rationing.	1
Storage of daily necessities	Considering risk management, it is very important both for local public bodies and individuals to make efforts in the future to save provisions in case of an emergency, cooking facilities for cooking in the field at the time of emergency and preparing boxed meals and securing necessities after disaster such as water supply vehicles.	2
Transportation of relief goods	Transport networks of relief goods should be reviewed. At the same time, transport means overall need to be improved.	2
Using various sources of water	What is required most at the time of emergency is water. It is suggested that as many wells as possible be dug where there is a vein of water as part of emergency preparedness.	1
Necessity of volunteers	Preparation of hot meals in the field by volunteers and others is psychologically essential for disaster victims.	2

2. Voices of the fire defense personnel and fire brigade

Field	Content	Number of opinions
Food situation in disaster-stricken areas	The food situation immediately after the earthquake was pathetic in the disaster-stricken areas.	8

Procurement of meals for squad members	There were a great number of squad members who lost mental and physical balance due to exhausting duties over long periods. It is essential to establish a self-reliant system in which people can take balanced meals and rest without depending upon organizations in a disaster-stricken area.	7
	The meals provided to the members of relief squads were poor. It was difficult to prepare good meals.	6
	It is important to receive support from the rear such as supplying warm meals to maintain physical strength and continue relief activities at the front.	5
	It was very encouraging for squad members that citizens cooked them meals in the field.	3
Information network	Victims did not efficiently receive information concerning distributions, etc.	1
Attitudes of the squad members towards their activities	We should carry out activities considering the feelings of the disaster victims, such as eating, drinking and discarding leftover food and water in front of the victims.	1
Future disaster measures	It is essential to construct comprehensive earthquake measures such as improving independent disaster control organizations, saving provisions and drinking water for emergencies and developing an emergency medical system.	1
Supplying water from various sources	Learning from the disrupted water services, it was decided that water sources be investigated, and to prepare a “water source map for firefighting” to put it into effective use in disaster management in the future.	1

3. Voices of the field liaison officials of the Fire Defense Agency

Field	Content	Number of opinions
Procurement of meals for relief squad members	For some time after the occurrence of the earthquake, meals were only irregularly provided and their quality was inferior. It was difficult to prepare good meals.	3

Cabinet Office Food Safety Commission
General Food Safety Report for Fiscal Year ending March 31, 2004

**Report on the gathering and dissemination of information
relating to food safety incidents occurring within Japan**

(Report on the Great Hanshin-Awaji Earthquake)

March 2004

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