

Survey Report:

People Who Cannot Move During a Disaster – Initiatives and Examples in Japan Disaster Victim Support

Eiichi Yamasaki^{*,†} and Haruo Hayashi^{**}^{*}Faculty of Societal Safety Science, Kansai University

7-1 Hakubai-cho, Takatsuki-shi, Osaka, Japan

[†]Corresponding author, E-mail: yeiichi@kansai-u.ac.jp^{**}National Research Institute for Earth Science and Disaster, Ibaraki, Japan

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The main purpose of this paper is to explore the vulnerability of disaster victims from the perspective of immobility, in contrast to the conventional perspective of mobility. What causes immobility in Japan? And how have immobile people been treated? In this article, I will attempt to answer these questions using some concrete examples. Immobile people have been recognized as “people requiring assistance during a disaster” (PRADD). This term helps us understand immobility in Japan. The Sanjou flood (2004) prompted the formulation of the “Guidelines for Evacuation Support of People Requiring Assistance during a Disaster.” The national government has encouraged local governments and residents to be prepared for a disaster using the guidelines. Nevertheless, preparations for disasters have not progressed very well. It was in this context that the Great East Japan Earthquake (GEJE) occurred.

During the GEJE, immobility raised the risk of death for PRADD due to the tsunami. After the tsunami, there were also PRADD who could not evacuate to shelters because they were anxious about how life would be there. Now many victims live in temporary housing. There will be people who cannot move to temporary housing in the future. It is likely that they will be mainly PRADD. These cases make it clear that immobility causes vulnerability to disasters.

I will also provide an example of how mobility causes vulnerability in a disaster – a stranded commuter or person during the GEJE.

Keywords: disaster victim support, vulnerability, immobility, protection of personal information

1. Introduction

Vulnerability of persons affected by a disaster emerges in the form of mobility, as they are prevented from leaving the disaster-affected area. Victims seek refuge in safe places such as evacuation centers following a disaster, and the support provided is focused on those victims who have been forced to migrate. This paper explores the vulnera-

bility of disaster victims from the perspective of immobility¹. It also proposes that a theory of vulnerability be developed from the perspectives of both mobility and immobility. Disaster victims who have been forgotten from the perspective of immobility are clarified below. The existence of immobile disaster victims in various situations can be understood. It can be said that the more immobile a disaster victim, the more active support they require.

In what situations does immobility occur in Japan and how has it been handled?² Recognizing the existence of immobility during disasters in the wake of the Sanjou floods in 2004, the Japanese government formulated the “Guidelines for Evacuation Support of People Requiring Assistance During a Disaster” and began to create a system of evacuation support in Japan. The degree of enthusiasm of each local government varied, however, and little progress was made. It was amidst such circumstances that the Great East Japan Earthquake (GEJE) struck. The Disaster Countermeasures Basic Act was revised following the GEJE. It provides many suggestions as to how “people requiring assistance during a disaster” (PRADD) should be supported in the future.

The death rate amongst PRADD during the tsunami brought about by the GEJE was high. There were also PRADD who were unable to take refuge in an evacuation center. Even now, many of the disaster victims are still living in temporary housing, and it is expected that some of them will never be able to leave. These examples both demonstrate that immobility brings about vulnerability. A similar example can be found by looking at the Great Hanshin-Awaji Earthquake (1995). Meanwhile, this paper will also introduce specific examples of vulner-

1. This point of view can also be found in Refugee and Forced Migration Studies. S. C. Lubkemann (2008) [6] points out that the perspective of immobility has been largely overlooked as a consequence of the focus on mobility. Refer to W. Takahashi (2016) [7] for more information about forced migration and compensation following the Fukushima nuclear power plant accident. Refer to Yonetani, M., and L. Yuen (2014) [8] for more information about migration following disasters in the Philippines and to K. Hakata (2013) [9] for more information about forced migration.

2. Please refer to the Cabinet Office website for details concerning disaster management in Japan. Cabinet Office (2015) [10] is particularly detailed. Please refer to E. Yamasaki (2013) (2016) [4–5], S. Tatsuki (2013) [11], Reconstruction Agency (2014) [12], the Cabinet Office website, and the Reconstruction Agency website for more information concerning the Great East Japan Earthquake. Please refer to E. Yamasaki (2013) [4], Y. Shiozaki et al. (2005) [13], and the official website of Hyogo Prefecture for more information concerning the Great Hanshin-Awaji Earthquake.



ability brought about by mobility (for instance, persons unable to return home), as opposed to immobility.

2. Who Are “People Requiring Assistance During a Disaster”?

If we speak of immobility and vulnerability in Japan, phenomena such as (1) being unable to move to a safe place (including an evacuation center), (2) being unable to move from an evacuation center, and (3) being unable to move out of temporary housing are envisioned. The term PRADD exists in Japan to represent people who are unable to move.

PRADD are defined as follows by the Cabinet Office (2006) [1]:

“PRADD” refers to people who require assistance to quickly and accurately grasp the required information and take a series of actions during a disaster in order to protect themselves, such as taking refuge in a safe place, etc. PRADD are generally the elderly, persons with disabilities, foreigners, infants, pregnant women, etc.

Such people can certainly be considered as typical examples of those facing immobility and vulnerability.

Although we imagine the elderly and persons with disabilities when speaking of PRADD, they are not the only ones who require assistance. Anyone may become trapped in a situation in which they do not know which areas are dangerous and which are safe to evacuate to if they lack sufficient knowledge of the region they are in. Considering this, anyone could potentially become a PRADD.

However, amongst people in local communities requiring assistance, this paper will focus on the elderly and persons with disabilities. In discussing these people, it is important that we consider a method of support tailored to their respective characteristics.

The Sanjou floods occurring in Niigata Prefecture in 2004 were the trigger for socially addressing the support of PRADD (6 of the 9 deaths were persons aged 70 and above). The elderly accounted for the majority of those that died or went missing as a result of the storm and flood damage that year (60% of the victims were aged 65 and above). Therefore, the Cabinet Office set up an advisory committee and compiled the “Guidelines for Evacuation Support of People Requiring Assistance during a Disaster” in March 2005. These guidelines were revised in March 2006 and used up until recently [1].

The Japanese government took this opportunity to promote measures for supporting PRADD. The support was actually led by municipalities, but little progress was made. The reason for this is considered to be a lack of awareness of the issues in non-disaster-prone municipalities, or an overreaction to the protection of the personal information of PRADD. Then the GEJE struck.

The method of providing evacuation support was reviewed following the GEJE. In March 2013, PRADD who are unable to evacuate to a safe area on their own during

a disaster were positioned as “persons requiring evacuation support” (PRES) by the Cabinet Office (2013a) [2]. At the same time, the PRADD terminology was also reviewed. The Cabinet Office (2013b) [3] then formulated guidelines based on the advice of an advisory committee.

Many provisions concerning PRADD were also added to the Disaster Countermeasures Basic Act via amendments following the GEJE (2012, 2013). The term “persons requiring special consideration” (PRSC), carrying the same meaning as PRADD, appeared in Article 8, paragraph 2, item 15 of the Disaster Countermeasures Basic Act.

PRES are defined in Article 49-10, paragraph 1 of the Disaster Countermeasures Basic Act as follows:

“Of the persons requiring special consideration living in the municipality, those who have difficulty evacuating on their own when a disaster occurs or is likely to occur and whom require particular assistance to ensure a smooth and rapid evacuation.”

The creation of a PRES register by municipal mayors was also mandated. This is covered in more detail in Section 6.3.

PRSC are defined in Article 8, paragraph 2 (15) of the Disaster Countermeasures Basic Act as follows:

“The elderly, persons with disabilities, infants, and other persons requiring particular consideration.”

The relationship between these terms can be expressed as follows:

$PRADD = PRSC > PRES$

In this article, we want to capture the subjects to be considered as widely as possible, so in principle we will adopt the term PRADD³.

3. PRADD Evacuation Support Leaders

We would first like to mention the leaders of PRADD evacuation support efforts [4]. The terms “public help,” “mutual help,” and “self-help” exist in Japan as indicators of people’s roles in disaster response. Public help is support from the national and local governments, mutual help is support from the community and private-sector organizations, and self-help is citizens supporting themselves.

There are limits on public help during a disaster. Certainly, the national and local governments are obligated to protect the lives of their citizens; however, normally this obligation is limited to supporting the construction of an evacuation support system during normal times. It does not mean the national and local governments provide evacuation support and relief immediately after a disaster. Even following evacuation, it is not the case that all evacuation centers are managed by the government.

3. The word “PRSC” appears in the legislation, so in the future the subjects to be considered may be discussed as “persons requiring special consideration during a disaster.”

PRADD must be supported via mutual help and self-help if all the necessary support cannot be provided as public help.

Therefore, the role of the local community is important. Many local communities have created voluntary disaster management organizations. As explained later in Section 6.1, the activities of these organizations are stipulated in Article 2-2 (3) of the Disaster Countermeasures Basic Act.

Persons in the community – voluntary disaster management organizations, for instance – become the leaders of support efforts prior to, during, and immediately following a disaster. Social welfare experts also assist in the creation of ties between the local community and PRADD, and these experts, as well as volunteers and support organizations, also provide support following evacuation.

The existence of support organizations, volunteer organizations, and NPOs that support PRADD (hereinafter collectively referred to as “support organizations”) is also important. Many support organizations are working to support disaster victims following the GEJE. Their activities are without doubt essential to confirming the safety of and providing living assistance to PRADD. However, these organizations are only able to become fully engaged in consultation and support services once they can gain an understanding of the location of the respective persons to be supported, so a mechanism that can quickly and efficiently link disaster victims and support organizations during a disaster is required.

There are also things that PRADD can do themselves as self-help, such as actively cooperating with the creation of a PRES register and ensuring a supply of medicine, food, dentures, etc., they can take with them at any time in preparation for refuge life. By taking these measures, PRADD can alleviate the burden on public and mutual help.

4. The Method of PRADD Evacuation Support

PRADD evacuation support can be divided into the following three phases [4] (however, failure in the implementation of any of these phases will expose immobility and vulnerability).

4.1. Evacuation Support Preparation

Collect and share PRADD information during normal times. Determine the persons who will support their evacuation.

What must be remembered here is that the local community plays the leading role in the support of PRADD. During normal times, the local community is expected to: (1) implement disaster education and disaster reduction drills and exercises, (2) prepare and maintain evacuation centers along with materials and equipment, and (3) construct a PRADD monitoring and support system.

The role of municipalities is to gain an understanding of the whereabouts of PRADD based on the personal in-

formation they possess, and provide advice and support to make it easier for local communities to create a support system.

By leveraging their existing registries, municipalities can gain an understanding of how many potential PRADD are living in the municipality. Municipalities must also consider providing the personal information that they have obtained to local communities, because it is local communities that provide support to PRADD, and they can only provide evacuation support if they have an understanding of the whereabouts of PRADD.

The implementation of steady disaster education and disaster reduction drills and exercises is essential to the development and continuation of disaster reduction activities in local communities. As well as gaining an understanding of persons who have difficulty evacuating (that is, PRADD), it is also essential to gain an understanding of the persons who will require special consideration following evacuation in advance.

4.2. Support for Evacuation to a Safe Place

Evacuate PRADD to a safe area if a disaster seems likely or has already occurred.

Here it is important to remember that the response will differ depending on the type of disaster. To be specific, disasters such as storm and flood damage that can be predicted in advance need to be considered separately from disasters such as earthquakes that cannot be predicted.

The original objective of PRADD evacuation support is the creation of a system to evacuate such persons to a safe area before any danger can reach them, assuming that the disaster can be predicted in advance, such as the aforementioned storm and flood damage. The key point is the timing of when to commence evacuation procedures. Municipal mayors issue information concerning evacuation timing such as “evacuation preparation information,” “evacuation advisories,” and “evacuation orders” depending on the urgency of the disaster.

However, in the case of disasters such as earthquakes that cannot be predicted, the PRADD information shared prior to the disaster will be used to confirm people’s safety after a disaster has occurred.

Looking at the issue of where to evacuate to, schools and welfare facilities are set as designated evacuation centers outside homes prior to a disaster; however, the establishment of temporary evacuation centers must also be considered if the designated evacuation centers are far from people’s homes. The possibility of taking refuge in a safe place inside one’s home has also come to be emphasized in recent years.

Looking at how to evacuate, PRADD with difficulty moving can be assisted with wheelchairs, stretchers, bicycle-drawn carts, etc. However, the worst-case scenario must always be envisioned when considering which method of evacuation is appropriate. Therefore, it is necessary to verify whether safe evacuation is possible even in heavy rain. Following the GEJE, people were evacuated using vehicles, which then got stuck in traffic and

washed away by the tsunami. As a result, evacuation by vehicles has received a negative evaluation. However, it remains a valid option worth considering when envisioning (1) evacuation in heavy rain and (2) evacuation with few support personnel on hand.

4.3. Living Assistance Following Evacuation

Provide appropriate medical care and welfare services to PRADD. Ensure a safe living space.

In fact, the final phase occupies an important position in the support of PRADD. The key questions are: to what extent can medical care and welfare services, the same as those afforded during normal times, be provided? And to what extent can a safe living space be ensured? Support can only be properly provided if the provision of these services and a safe living space are ensured. Insufficient medical care and welfare services and inadequate safety of the living space may lead to “disaster-related deaths.”

Local communities are expected to manage evacuation centers. In this phase, it should be assumed that PRADD such as persons requiring nursing care, persons with disabilities, infants, and expectant and nursing mothers are living in the region; the general evacuation centers are temporary; and these PRADD will take refuge in these evacuation centers. A system to accept these PRADD must be prepared before it is too late. In the past, there has been a tendency for attention to be focused on the elderly requiring nursing care, with insufficient consideration given to other PRADD.

It is important for the government, experts, local communities, and so on, to keep working in cooperation to establish these systems.

5. Problems Concerning the Usefulness and Protection of Personal Information (Particularly that of PRADD)

As mentioned in Section 4.1, municipalities must consider providing the personal information that they have obtained about PRADD to local communities. This is because, although it is the municipality that creates a PRADD register, the local communities will ultimately be unable to support PRADD unless they have an understanding of them. It is possible to promote and deliver mutual help through public help.

Let us now summarize the personal information protection legislation in Japan [4].

The Act on the Protection of Personal Information is the basic law in this area. Article 1 of the Act sets the objective to “protect the rights and interests of individuals while taking consideration of the usefulness of personal information.” So, how to balance and reconcile the “usefulness of personal information” and the “protection of personal information” becomes important. Incidentally, consideration of the usefulness of personal information is mandated and embodied as an exception to restrictions.

The Act on the Protection of Personal Information is applied to private corporations. However, the personal information protection ordinances independently enacted by the municipalities are applied to municipalities. A personal information protection ordinance is enacted by each municipality, but in reality, they show little difference in structure and content.

Municipalities are able to understand the persons who may become PRADD. In other words, they possess personal information related to the elderly receiving nursing care services and persons with disabilities receiving welfare services. However, in principle the personal information protection ordinances do not permit the provision of this personal information to local communities.

That being said, municipalities wishing to provide personal information relating to PRADD to the local communities can ensure legality under their personal information protection ordinance on the following grounds (however, there are problems associated with each of these respective means):

5.1. If There Is Consent From the Individual

It goes without saying that the provision of an individual’s personal information is legal if that individual has provided consent. However, how should consent be obtained from individuals? What should be done if consent cannot be obtained from them? And what should be done if an e-mail is sent to an individual to obtain his or her consent, but they do not reply?

5.2. When the Provision of Personal Information Is Deemed Urgent and Unavoidable in Order to Protect Life and Physical Safety

At first glance, this does not appear to be a justification that can be easily understood. For example, opinions are widely divided on the kind of circumstances that are deemed urgent and unavoidable. It is necessary to form a common consensus on the circumstances that will apply in advance.

5.3. When the Approval of the Personal Information Protection Review Board Is Obtained

This is a method that entrusts the judgment of legality to a third party. However, as the judgment criteria of the personal information protection review boards differ across municipalities, this method may not be advisable in municipalities with strict judgment criteria.

5.4. When There Are Grounds Based on Laws and Regulations

A method of legalizing the provision of information on the basis of laws and regulations is also an attractive approach. However, the provision of information is not necessarily set as part of the assembly agenda. Moreover, legalization on the basis of laws and regulations does not mean there will not be trouble when somebody actually visits the home of a person who did not consent to the provision of his or her personal information.

6. Overcoming the Situation of Being Unable to Move with the Disaster Countermeasures Basic Act

The Disaster Countermeasures Basic Act was revised in 2013 to include many additional provisions in relation to support for disaster victims. These provisions are considered a helpful reference when foreign countries develop their own disaster victim support legislation. The revised Disaster Countermeasures Basic Act includes various provisions concerning the manner of PRADD evacuation and related support. The provisions concerning PRADD, encompassing immobility and vulnerability, are explained below:

6.1. Basic Philosophy

The following provisions are set forth in Article 2-2 of the Disaster Countermeasures Basic Act:

Article 2-2 (Basic philosophy)

Disaster management shall be implemented with the following matters as a basic philosophy.

- (2) *Ensuring the appropriate roles and mutual cooperation of the national government, local government, and other public institutions, and, in conjunction with this, promoting disaster reduction activities carried out by each individual citizen as well as disaster reduction activities voluntarily carried out by voluntary disaster management organizations (hereinafter referred to as “voluntary disaster management organizations based on the spirit of neighborhood cooperation”) and various other entities in the community.*
- (4) *Gaining an understanding of the situation of a disaster as accurately as possible, even when the collection of necessary information is difficult immediately following the occurrence of a disaster or in other situations, and properly allocating personnel, materials, and other resources on the basis of this understanding in order to protect human lives and physical safety as the highest priority.*
- (5) *Providing appropriate support to disaster victims, based on their age, gender, disability, and other individual circumstances and according to the period, while having consideration not to inhibit the independent efforts of disaster victims.*
- (6) *Quickly recovering from a disaster by restoring facilities and providing support to disaster victims after a disaster has occurred.*

Article 8, paragraph 2 mandates the following considerations:

Article 8 (Disaster management-related considerations to be had in measures, etc.)

2. *The national and local governments must make particular effort to implement the following matters to prevent the occurrence and/or spread of disasters.*

- (14) *Matters in relation to ensuring the physical and mental health of disaster victims, providing a place for disaster victims to live, the protection of disaster victims, etc.*
- (15) *Matters in relation to necessary disaster-management-related measures for the elderly, persons with disabilities, infants, and other persons requiring special consideration (hereinafter, “persons requiring special consideration.”)*
- (17) *Matters in relation to the provision of accurate information to disaster victims and consultation from disaster victims.*

6.2. Provisions Related to PRADD Evacuation Support

The timing of evacuations (“evacuation preparation information,” “evacuation advisory,” and “evacuation order”) was touched upon earlier in Section 4.2, and the legal basis for this can be found in Articles 56 and 60 of the Disaster Countermeasures Basic Act.

Municipal mayors are obligated to designate emergency evacuation shelters (Articles 49-4 to 49-6) and centers (Articles 49-7 to 49-8). The provisions of Article 49-4 provide that designated emergency evacuation shelters are to be designated “for each type of abnormal phenomenon.” The obligation to take measures to inform residents of necessary matters to facilitate their smooth evacuation has also been imposed.

Provisions concerning the priority use of communications equipment for conveying warnings and evacuation orders, etc., have also been established (Articles 57 and 61-3), as well as provisions concerning the supply of disaster victim safety information (Article 86-15).

Provisions concerning refuge life have also mandated the maintenance of a living environment following evacuation (Article 86-6) and consideration of disaster victims who cannot stay in evacuation centers (Article 86-7).

6.3. Provisions Related to the PRES Register

Provisions concerning the PRES register are set forth in Articles 49-10 to 49-13 of the Disaster Countermeasures Basic Act. The points to note are as follows:

- (1) Municipal mayors are obligated to create a PRES register.
- (2) Existing personal information can be used for purposes other than for which it was provided in the creation of the PRES register, and requests can also be made to the governor, etc., for the provision of information.
- (3) Similarly, the PRES register can also be used for purposes other than for which it was created.

- (4) Information in the PRES register may be provided to “evacuation support personnel, etc.,” with the consent of the individual.
- (5) If there are special provisions in a municipal ordinance, information in the PRES register may be supplied without with the consent of the individual.
- (6) Information in the PRES register may also be supplied without the consent of the individual in the event of an emergency.
- (7) Considerations are necessary when providing information in the PRES register, and the obligation of confidentiality is imposed on persons receiving information in the register.

The “Guidelines for Evacuation Support of People Requiring Assistance during a Disaster” (August 2013) [3] were then formulated in response to these new provisions.

6.4. Provisions Related to the Disaster Victim Directory

A disaster victim directory was created to facilitate the smooth implementation of support to get the lives of victims back on track. As well as the details of the damage suffered by victims, the directory also includes information about whether they are receiving any support and the kind of concerns they are faced with. Of particular note is that a record of disaster victim vulnerability was also created. The introduction of the disaster victim directory further promoted consideration of disaster victims’ immobility and vulnerability.

The disaster victim directory can be traced back to the Great Hanshin-Awaji Earthquake, and there were also local governments that introduced a disaster victim directory following the Niigata Chuetsu Earthquake (2004), Noto Peninsula Earthquake (2007), and Chuetsu-oki Earthquake (2007). Some municipalities also introduced a disaster victim directory following the GEJE.

Provisions related to the disaster victim directory were newly set forth in Articles 90-3 and 90-4 of the Disaster Countermeasures Basic Act in the revision following the GEJE. The key points are as follows:

- (1) Municipal mayors may create a disaster victim directory when a disaster has occurred.
- (2) Existing personal information can be used for purposes other than for which it was provided in the creation of the disaster victim directory, and requests can also be made to relevant local government leaders for the provision of information.
- (3) Information in the disaster victim directory may be used for purposes other than for which it was provided, or provided to third parties such as other local governments with the consent of the individual or to the extent necessary to support the disaster victim.

- (4) Information in the disaster victim directory may also be provided to support organizations with the consent of the individual.

Disaster victim directories were also created following the 2013 Izu-Oshima mudslides and 2014 Fukuchiyama floods. It is likely that many municipalities will create disaster victim directories following disasters in the future. However, it is more desirable for such directories to be created before a disaster occurs.

7. Persons Who Do not/Cannot Move During a Disaster

7.1. Persons Who Could not Escape From the Tsunami Following the GEJE

The GEJE, which struck on March 11, 2011, killed 15,883, resulted in 2,676 missing persons, injured 6,145, destroyed 126,483 homes, and partially destroyed 272,287 homes (National Police Agency, August 9, 2013).

It was reported by the Cabinet Office (2013a) [2] that the mortality rate amongst persons aged 65 and above across the disaster areas was approximately 60%, and the mortality rate amongst persons with disabilities was about double that of the overall mortality rate. It is not a stretch to say that such a high mortality rate was a consequence of immobility. In addition, persons providing support for evacuation from the tsunami were so dedicated to their mission of rescuing PRADD that they could also be considered as being immobile. According to a report by the PRADD Evacuation Support Investigative Commission (December 26, 2012), the tsunami took the lives of a total of 56 local welfare commissioners in Iwate, Miyagi, and Fukushima Prefectures who confirmed their safety immediately following the disaster and then became engaged in providing support to those requiring it.

7.2. Persons Who Could not Move from Their Homes to an Evacuation Center After the GEJE

Here we will introduce some examples of support provided to persons with disabilities in Minamisoma City, Fukushima⁴.

The Japan Disability Forum (JDF) is a support organization for persons with disabilities; it was established in October 2004. It also provided support for persons with disabilities affected by the GEJE.

JDF-Fukushima (JDFF) was responsible for the support of persons with disabilities in Fukushima Prefecture. The JDFF conducted the first evacuation center survey, visiting 198 evacuation centers in Fukushima Prefecture from April 5 to April 18, 2011, but could only confirm 112 persons.

4. The following description is based on interviews with JDF and JDFF personnel.

Minamisoma City, Fukushima had created a PRADD register based on “individual consent.” As the Self-Defense Forces personnel conducted the visiting survey based on this PRADD register, it was initially thought that an understanding of persons with disabilities had been acquired.

However, the JDFF found persons with disabilities (and their families) remaining in their homes that did not or could not take refuge in an evacuation center. Take the visually impaired, for example; any visually impaired persons moving to a new area have the burden of re-adjusting to their new surroundings. Moreover, households with children suffering from ADHD, for instance, may be unable to adapt to their new lifestyle in an evacuation center. The reason for these persons with disabilities remaining in their homes was the lack of a system in evacuation centers to accept persons with disabilities to begin with. Persons with disabilities were unable to envision taking refuge in an evacuation center. This lack of an acceptance system in evacuation centers is always a factor that produces immobility.

Persons with disabilities not listed in the PRADD register were also found. A PRADD register created solely based on individual consent cannot keep track of all persons with disabilities. Of course, there were also persons with disabilities who did not even know about the creation of such a register in the first place.

At the time, an order for the entire city of Minamisoma to evacuate was issued. Therefore, the only persons that remained were immobile persons with disabilities, who were exposed to an extremely dangerous situation.

The JDFF determined the need to quickly gain an understanding of these persons with disabilities and provide support, and requested the city of Minamisoma provide related information. The city was initially reluctant, but eventually provided the information, deeming the provision of personal information “urgent and unavoidable in order to protect life.” A major factor behind the provision of the information given to the JDFF was that a support organization for persons with disabilities participated as a JDFF member, and that the organization had a strong relationship of trust with the city of Minamisoma. Another factor was that the city lacked the manpower to confirm the safety of persons with disabilities on its own.

Therefore, the city provided the personal information of persons with disabilities to the JDFF and requested that the JDFF conduct a survey.

The first survey (April 30–May 7) was conducted on persons aged under 65 years old with severe disabilities, and the second (May 23–June 10) was expanded to cover persons aged under 65 with moderate disabilities. Follow-up surveys were also conducted in houses where nobody was home during the initial survey, and the houses of persons with disabilities requiring special consideration were also revisited.

The city of Minamisoma provided a register of 1,139 names to facilitate the implementation of these surveys, which revealed a total of 492 persons with disabilities living in the city. Of these, 192 responded that they needed

assistance in the form of moving and transportation support, etc., during an evacuation, while 168 responded that they needed emergency living assistance and ongoing support.

7.3. Persons Who Could not Escape From an Evacuation Center After the Great Hanshin-Awaji Earthquake

A similar situation also occurred following the Great Hanshin-Awaji Earthquake, which struck on January 17, 1995. It killed 6,434, injured 43,792, destroyed 104,004 homes, and partially destroyed 256,857 homes. At the peak, 316,678 persons sought refuge in 1,153 evacuation centers (Hyogo Prefecture survey, May 19, 2006).

Life in the evacuation centers was tough for vulnerable persons, such as the elderly and persons with disabilities. There was a lack of privacy and living conditions were not sufficiently maintained⁵. Persons who did not take refuge in an evacuation center lived in tents set up in public parks and were unable to receive the same support as those living in the evacuation centers⁶.

Even after the elimination of evacuation centers under the Disaster Relief Act on August 20, 1995, some victims did not know where they would go next. Although temporary housing had been constructed, it was (1) inconvenient in terms of commuting to work and hospitals, and (2) not feasible to move into for financial reasons. These disaster victims were certainly immobile, and 12 “standby stations” were set up for their benefit. There still remained some immobile persons after these standby stations were abolished on March 31, 1997.

8. Persons Who Cannot Move Out of Temporary Housing

8.1. Persons Who Could not Move Out of Temporary Housing After the Great Hanshin-Awaji Earthquake and the GEJE

When homes are lost as result of a disaster, temporary housing is constructed under the Disaster Relief Act to provide a temporary residence for disaster victims. As temporary housing is built from scratch, it takes time to build, and securing land is also a difficult task.

The construction of 48,300 units of temporary housing was completed on August 15, 1995, following the Great Hanshin-Awaji Earthquake, and 46,617 households were living in this temporary housing at the peak (November 1995).

In order to accommodate the many disaster victims requiring a place to live, there was no choice but to construct

5. As mentioned in 6.2, ensuring the safety of refuge life was made a requirement by the revision of the Disaster Countermeasures Basic Act following the Great East Japan Earthquake.

6. In a similar example, 12,438 people were evacuated to evacuation shelters following the Niigata Chuetsu-oki earthquake on July 16, 2007. Persons unable to escape to evacuation shelters took refuge in private cars and plastic greenhouses. Some persons living in private cars suffered from deep vein thrombosis as a result.

the temporary housing on land far away from the disaster area. As a result, many disaster victims became isolated.

All residents vacated the temporary housing on January 14, 2000. So, the temporary housing was ultimately eliminated five years after the disaster. However, almost all of the persons remaining in the temporary housing until the end (that is, immobile persons) faced welfare challenges, or in other words, were vulnerable. This is a certainly a situation in which immobility should be highlighted.

It was Mr. Tokio Kaneyoshi, Director of the Kobe City Life Reconstruction HQ, who led the elimination of the temporary housing during this time. According to Mr. Kaneyoshi, there were 543 households living in temporary housing at the end of June 1999, of which 93 had not yet determined where they would move. The Kobe City Independence Support Committee was launched in July 1997 in an effort to overcome this immobility. The nine members of the Committee included lawyers and psychiatrists. The Committee discussed measures and consulted with persons suffering from immobility. There were also a number of cases that were difficult to solve. For example, (1) cases involving persons suffering from psychological illnesses such as paranoia, suicidal thoughts, and autism; (2) cases involving children left behind after their parents were incarcerated; and (3) cases where persons were not present in their temporary housing for long periods due to work. These examples demonstrate that welfare and psychological considerations are necessary to overcome immobility.

Disaster reconstruction has been delayed following the GEJE, and disaster victims are forced to continue living in temporary housing in areas in which there is no prospect of housing reconstruction. As of September 2014, three years after the disaster, 89,327 persons were living in 41,387 temporary housing units (Cabinet Office survey, 2014). It is expected that the presence of immobile persons will be highlighted and difficulties similar to those encountered after the Great Hanshin-Awaji Earthquake will emerge in the final stages of eliminating the temporary housing.

8.2. Privately-Rented Temporary Housing After the GEJE

As mentioned above, a lot of temporary housing was constructed following the GEJE. Nevertheless, there was still a serious lack of temporary housing given the enormous number of disaster victims. Therefore, pre-existing rental apartments and rental housing were used instead of constructing temporary housing. This is referred to as “privately rented temporary housing” [5].

Privately rented temporary housing is provided under the Disaster Relief Act; however, the legal relationship is complex as the housing is rented privately. Essentially, privately rented temporary housing is provided through a three-party agreement concluded between the lessor, the prefecture (the lessee), and the disaster victim. In addition to the monthly rent, common service expenses and administrative expenses, the prefecture pays the lessor the

damage insurance premiums including fire insurance (for 2 years), brokerage (0.525 months’ rent), and repair costs for when the tenant vacates the housing (2 months’ rent) at the time of the first rent payment.

Privately rented temporary housing has advantages in that (1) it is possible to quickly provide housing to disaster victims, (2) it is cheaper than constructing temporary housing and a certain quality residence can also be expected, and (3) it can meet the diverse needs of disaster victims (commuting to work/school, etc.)

However, there are also issues associated with privately rented temporary housing. For instance, it is clear that persons living in newly constructed temporary housing are disaster victims, and it is therefore easy for them to receive a variety of support. However, disaster victims living in the ordinary apartments, condominiums, etc., that make up privately rented temporary housing are difficult to distinguish from non-disaster affected residents and therefore may have difficulty approaching support organizations. In addition, as privately rented temporary housing disaster victims are scattered across a wide area, it is difficult for them to continue their previous community activities.

Privately rented temporary housing residents came to be established as a new category of disaster victim in the wake of the GEJE [4]. In September 2014, 3 years after the disaster, 104,130 persons were living in 43,890 privately rented temporary housing units (Cabinet Office survey, 2014).

This system of privately rented temporary housing is continuing as of March 2015. That said, the rent assistance provided under this system will not continue forever. There are many low-income households that rely on the rent assistance and can be expected to find it difficult to pay rent without it. This is a new problem associated with the end of this system of privately rented temporary housing. The phenomena of reliance on rent assistance and the inability to move to another residence can be cited as other examples of immobility and vulnerability.

9. Persons Unable to Return Home: Occurrences Where Persons Have Moved (Mobility)

This paper has, until now, examined cases where people were unable to move during/after a disaster and the associated vulnerability; however, this section will instead focus on cases where vulnerability is caused by moving [4].

This is the vulnerability of persons unable to return home. “Persons unable to return home” refers to people at work, school, shopping, or otherwise away from home who have lost the means to return home during a disaster. When multitudes of such people emerge in large cities, it can cause various problems. Where should a place for these people to stay be secured? How should the goods essential to their survival be stockpiled and supplied? These are definitely important questions. How-

ever, the biggest potential problem is these persons creating gridlock on major roads by forcibly attempting to return home, thereby preventing the passage of necessary disaster response vehicles. This poses a major obstacle to any disaster response.

How must the situation of persons unable to return home be dealt with? Although disaster victims try to return home from work or wherever they may have been when the disaster struck, it would actually be better for them to stay where they are for a few days. Therefore, it is important to secure a place for these people to stay, as well as the goods essential to their survival.

The Disaster Relief Act is the law that mandates the securing and management of evacuation centers for disaster victims. In many cases, public facilities such as schools are designated as evacuation centers. It is also possible to accommodate persons unable to return home in shops and hotels. It is necessary to establish a system whereby such private facilities are utilized as evacuation centers for persons unable to return home, with the government covering the necessary evacuation expenses. Flexible operation of the Disaster Relief Act is required.

Training in measures to assist persons unable to return home is implemented in large cities, and questionnaires are administered to trainees. According to these questionnaires, the main reason for persons who cannot return home attempting to return home anyway is that they feel anxious being unable to confirm the safety of their family. Thus, as well as widely publicizing the measures for persons unable to return home, it is also important to create an environment in which people can obtain the necessary information to confirm the safety of their families, even immediately following a disaster.

This problem may relate to the vulnerability of large cities, rather than individual vulnerability. Alternatively, it may be reasonable to say that the personal vulnerability of information uncertainty creates unwanted mobility.

A number of people unable to return home emerged in the Tokyo metropolitan area and Sendai city following the GEJE. What measures were taken in response to this?

For example, department stores in the Chuo Ward of Tokyo provided supplies to persons unable to return home. These supplies had been stockpiled by the department stores in advance at their own expense. However, the department stores also functioned as evacuation centers, and the costs of the supplies provided to persons unable to return home were ultimately covered by the government under the Disaster Relief Act. Department stores had concluded agreements with Chuo Ward in advance and declared the amount of stockpiled supplies. This made it easy to determine the amount of supplies provided during the disaster. If the amount of supplies provided is clear, then it is easier to calculate the expenses required for disaster relief. Meanwhile, in Sendai City, evacuation centers originally designated as places of refuge for local residents were inundated with persons unable to return home, and commercial premises were also utilized as evacuation centers to accommodate persons unable to return home.

Measures to assist persons unable to return home are also being promoted in other metropolitan areas such as the Kansai region and Chukyo Metropolitan Area since the GEJE.

In Tokyo, the “Tokyo Metropolitan Government Ordinance Covering Measures for Stranded Persons” was enacted in March 2012 and came into force from April 2013, obligating business operators to cooperate with the city and municipalities. In Minato Ward, the “Minato Ward Ordinance on Basic Disaster Countermeasures” was enacted in October 2011, setting forth detailed provisions concerning measures to assist persons unable to return home. One such provision (Article 28, paragraph 4) reads “the necessary support can be provided to business operators and schools, etc., implementing measures for persons unable to return home.”

10. Conclusion

As described above, efforts have been made in Japan to overcome immobility and vulnerability of “people requiring assistance during a disaster,” and in recent years, the Disaster Countermeasures Basic Act has become an important law for addressing immobility and vulnerability. It can be said that the revision to the Act has created an environment in which it is easier to overcome immobility and vulnerability.

How to connect immobile and vulnerable persons with the local community and support organizations that focus on immobility and vulnerability is an issue in the provision of evacuation support to PRADD. It is essential that the personal information possessed by national and local governments is utilized to facilitate this connection.

This paper introduced several cases of immobility and vulnerability in Japan. The phenomena of immobility and vulnerability can be traced back to the Great Hanshin-Awaji Earthquake, with new forms emerging following the GEJE.

By recognizing immobility and vulnerability and trying to overcome them as a society, it will be possible to implement evacuation support and lifestyle reconstruction assistance more smoothly. To that end, the initiatives and case studies of Japan provide a framework for the recognition of immobility and vulnerability from a variety of perspectives. We hope to develop a theory of human mobility and vulnerability based on the initiatives and examples of Japan⁷.

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7. Refer to L. Guadagno (2016) [14] for more information about the latest developments in human mobility theory.

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References:

- [1] Cabinet Office, “Guideline for evacuation assistance to PRADD,” March 2006.
- [2] Cabinet Office, “Report of review meeting for evacuation assistance to PRADD,” March 2013.
- [3] Cabinet Office, “Guidelines for the Evacuation Support of PRES,” August 2013.
- [4] E. Yamasaki, “Natural Disaster and Support for Victims,” Nippon Hyoron Sha Co., Ltd., September 2013.
- [5] E. Yamasaki, “Legislation to support disaster victims in Japan,” Asian Law in disasters, Routledge, pp. 163-177, May 2016.
- [6] S. C. Lubkemann, “Involuntarily Immobility : On a Theoretical Invisibility in Forced Migration Studies,” J. of Refugee Studies, Vol.21, No.4, pp. 454-475, September 2008.
- [7] W. Takahashi, “Divided fates of victims after the Fukushima nuclear power plant accident,” Asian Law in disasters, Routledge, pp. 213-222, May 2016.
- [8] M. Yonetani and L. Yuen, “The evolving picture of displacement in the wake of Typhoon Haiyan: An evidence-based overview,” Manila: Government of the Philippines, Department of Social Welfare and Development, International Organization for Migration, Internal Displacement Monitoring Centre and SAS, May 2014.
- [9] K. Hakata, “Mobility and Vulnerability of Migrants with Displacement Background: A Case of Metro Manila,” CDRQ, Vol.8, pp. 3-27, October 2013.
- [10] Cabinet Office, “Disaster Management in Japan,” March 2015.
- [11] S. Tatsuki, “Old Age, Disability, and the Tohoku-Oki Earthquake (March 2013),” Oakland: Earthquake Spectra, Vol.29, No.S1, pp. 403-432, Mar 2013.
- [12] Reconstruction Agency, “Report of Situation of Reconstruction of the Great East Japan Earthquake,” November 2014.
- [13] Y. Shiozaki. et al., “Lessons from the Great Hanshin Earthquake,” Kamogawa Shuppan Publishing Co., Ltd., January 2005.
- [14] L. Guadagno, “Human Mobility in the Sendai Framework for Disaster Risk Reduction,” International Journal of Disaster Risk Science, Vol.7, Issue 1, pp. 30-40, March 2016.



Name:

Eiichi Yamasaki

Affiliation:

Professor, Faculty of Societal Safety Sciences,
Kansai University

Address:

7-1 Hakubai-cho, Takatsuki-shi, Osaka 569-1098, Japan

Brief Career:

2004- Lecturer, Oita University

2006- Assistant Professor, Oita University

2014- Assistant Professor, Kansai University

2015- Professor, Kansai University

Selected Publications:

- “Legislation to support disaster victims in Japan” Asian Law in disasters, Routledge, pp. 163-177, May 2016.

Academic Societies & Scientific Organizations:

- Institute of Social Safety Science (ISSS)
 - Japan Society for Disaster Recovery and Revitalization (JSDRR)
 - Japan Public Law Association (JPLA)
-



Name:

Haruo Hayashi

Affiliation:

President, Ph.D. (UCLA), National Research Institute for Earth Science and Disaster Resilience

Address:

3-1 Tennodai, Tsukuba, Ibaraki 305-0006, Japan

Brief Career:

1994-1996 Associate Professor, Disaster Prevention Research Institute, Kyoto University

1996- Professor, Disaster Prevention Research Institute, Kyoto University

2015- President, National Research Institute for Earth Science and Disaster Resilience

Selected Publications:

- Kyoto University/NTT Resilience Joint Research Group (H. Hayashi et al.), “Trial for the Disaster Resilience Society – Come over the Great East Japan Earthquake Disaster,” Nikkei BP Consulting, Inc., ISBN: 9784901823975, 2012 (in Japanese).

- H. Hayashi et al., “Effective method for disaster prevention, ‘Disaster Ethnography’ – unrevealed witnesses of Hanshin-Awaji Great Earthquake,” ISBN: 9784140814055, Japan Broadcast Publishing Co., Ltd, 2009 (in Japanese).

Academic Societies & Scientific Organizations:

- Institute for Social Safety Science (ISSS)
 - Japan Society for Natural Disaster Science (JSNDS)
 - Japan Emergency Management Association (JEMA)
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