

Disaster Management Symposium 2006

Proceedings

January 18th, 2006

Kobe, Japan

Convenors :

United Nations Centre for Regional Development (UNCRD)

Yomiuri Shimbun, Osaka

and

Disaster Management Symposium Committee

Hyogo Prefecture,

Kobe City,

The Great Hanshin-Awaji Earthquake Memorial Research Institute

Disaster Reduction and Human Renovation Institute,

International Recovery Platform (IRP),

Citizens towards Overseas Disaster Emergency (CODE),

Asian Disaster Reduction Center (ADRC),

JICA Hyogo International Center,

United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA), et al.

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PREFACE

United Nations Centre for Regional Development (UNCRD) has executed and is implementing numerous community-based programs to establish earthquake disaster prevention measures and poverty alleviation in seismic countries. Its activities include improvement of the safety level of core community facilities such as schools; the dissemination of best practices in disaster risk management at the community level; and the formulation of integrated programs for sustainable development through disaster risk management initiatives. UNCRD, through its Disaster Management Planning Hyogo Office, is carrying out various programs to prevent disasters, an essential element of sustainable development.

UNCRD Disaster Management Planning Hyogo Office (hereafter, called Hyogo Office) was established in April 1999 in Kobe city, where the 1995 Great Hanshin-Awaji Earthquake claimed the lives of more than 6,000 people. The Hyogo Office focuses on disaster management initiatives through multilateral collaboration at an international level while capitalizing on the momentum created during the United Nations International Decade for Natural Disaster Reduction (UN-INDR) in the 1990's and based on the Hyogo Framework for Action 2005-2015, which was adopted at the UN World Conference on Disaster Reduction (WCDR) in Kobe, Hyogo in 2005 to establish disaster prevention as an essential component of sustainable development.

The Hyogo Office carries out various projects for disaster risk reduction, drawing from where appropriate the reconstruction process in Hyogo and other disaster-affected areas in the world. The project funds are



additionally provided by the Human Security Fund from UN-OCHA, and the Hyogo Trust Fund by an affiliated institute of Hyogo prefecture, and other funds.

The UNCRD is implementing a two-year project on "Reducing Vulnerability of School Children to Earthquakes" in Asia-Pacific region under project execution by UN Department of Economic and Social Affairs (UN-DESA) since April, 2005. The project aims to ensure that school children living in seismic regions have earthquake safe schools and that local communities build their capacities to cope with earthquake disasters. The project includes retrofitting of some school buildings in a participatory way with the involvement of local communities, local governments, and resource institutions, trainings on safer construction practices to technicians, and disaster education in schools and communities. These activities are carried out in Fiji Islands, India, Indonesia, and Uzbekistan as pilot cases, and the experience be disseminated throughout the respective geographical regions through regional and international workshops.

The projects includes seismic vulnerability analysis of about 10 selected schools in a project city of each country and retrofitting of some of them which cover prominent construction typology in the region. This leads to development of country specific guidelines on earthquake safe construction, which incorporates solutions to the practical problems experienced during school retrofitting. Retrofitting of schools in communities serves as a demonstration of proper earthquake technology to them. Masons in the communities get on-the-job training during the retrofitting of schools. In addition, technicians in each project city receive training on earthquake design and construction of earthquake safe houses.

Moreover, the project includes development and wide distribution of educational booklets, posters, and guidebooks on teachers training and students' drills for earthquake disaster preparedness and response. The project aiming to motivate households for planning seismic upgrading of their houses also develops an interactive educational tool for simple seismic risk assessment of buildings. Regional and international workshops on school seismic safety are planned to

ACKNOWLEDGEMENT

disseminate the success and lessons gained from project cities to a wider region.

Through a community based approach, UNCRD has been pursuing initiatives to promote a culture of safer building practices in developing countries. The key elements of the approach are development of mechanisms to increase the technological awareness of homeowners; training and demonstrating confidence building measures to local masons; encouraging technology transfer through pilot demonstrations and simple, easy-to-use guidelines; and stimulating local governments to initiate the facilitation of such construction.

These "Proceedings" are designed to present a detailed summary of the discussions and output at the "Disaster Management Symposium 2006" in Kobe, Hyogo on 18 January 2006. It is my hope that readers will also gain an extensive understanding of UNCRD's activities in promoting community-based disaster management and that will contribute to their own efforts to promote safer, more disaster-resilient communities in various regions of the world.

This symposium was held with a collaboration from United Nations Centre for Regional Development (UNCRD), Yomiuri Shimbun Osaka, 2006 Symposium Committee (Hyogo Prefecture, Kobe city, the Hanshin-Awaji Earthquake Memorial Research Institute, Disaster Reduction and Human Renovation Institute, International Recovery Platform (IRP), CODE, Asia Disaster Reduction Center (ADRC), JICA Hyogo, United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) Kobe, and others.

We would like to express our appreciation to all the participants for attending and supporting the Symposium especially to those whom gave a great contribution to the workshop.

Also, we would like to extend special thank you to all volunteers to help us running the symposium and to complete this proceedings.



Mission Statement of UN/DESA

The Department of Economic and Social Affairs (UN/DESA) was created as the result of the consolidation of the Department of Policy Coordination and Sustainable Development, the Department for Economic and Social Information and Policy Analysis, and the Department for Development Support and Management Services.

UN/DESA is a vital interface between global policies in the economic, social and environmental spheres and national action. The Department works in three main interlinked areas: (a) it compiles, generates and analyses a wide range of economic, social and environmental data and information on which States Members of the United Nations draw to review common problems and to take stock of policy options; (b) it facilitates the negotiations of Member States in many intergovernmental bodies on joint courses of action to address ongoing or emerging global challenges; and (c) it advises interested Governments on the ways and means of translating policy frameworks developed in United Nations conferences and summits into programmes at the country level and, through technical assistance, helps build national capacities.

Designations employed and presentation of material in this publication do not imply the expression of any opinion whatever on the part of the United Nations Secretariat, the United Nations Centre for Regional Development, concerning the legal status of any country or territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Morning Session

*For Children:
Earthquake Resistant Schools
and
Disaster Management Education*

Opening Session

Keynote Presentation

<Opening Session>

Welcome Address

Kazunobu Onogawa, Director, United Nations Centre for Regional Development (UNCRD)

Opening Remarks

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Toshizo Ido, Governor, Hyogo Prefecture

<Keynote Presentation>

Hyogo Framework for Action and Humanitarian Reform: Reaffirming the Relevance

Puji Pujiono, Head, UN OCHA Kobe

Welcome Speech

Kazunobu Onogawa

Director, United Nations Centre for Regional Development (UNCRD)

Good morning.

I am Kazuo Onogawa, the director of United Nations Centre of Regional Development. It is my great pleasure to open this symposium co-organized by UNCRD, Hyogo prefecture, and Yomiuri Shimbun. Also, I would like to welcome Mr. Ido, the governor of Hyogo prefecture.

For some of you who may not be aware of UNCRD, UNCRD was established in 1971 and will mark its 35th anniversary this year. Our headquarter are located in Nagoya and we have disaster management office here in Kobe, Latin America office and Africa office. We implement various projects focusing on disaster management, environment, and human security. As for the Hyogo Office, with a great support of Hyogo prefecture, we opened our disaster management office in 1999. Since then, Hyogo office has become the focal point of the disaster related activities of UNCRD.

Today we have two sessions, the first session is in the morning and the second one is in the afternoon. As you can see in the brochure, we have the morning session with a theme of “for children: earthquake resistant schools and disaster management education”. We believe that schools, which are the center of a community may become a center of disaster management activities. Of course, safe schools protect children who will be the leaders of the next generation. Also, safe schools will become a safe heaven and temporary shelter in a time of disasters. In addition, schools will be the focal point of disaster education. Schools can give disaster education opportunities to children, their parents and family, and the community as whole.

From this point of view, in 2005, UNCRD started a project called “Reducing vulnerability of school children to disasters” in four countries in Asia and Pacific, which focus on the disaster resistant schools and disaster education with “human security fund” of OCHA

In the morning session, experts of school safety or disaster education will have presentations and contribute to a panel discussion. I hope this will be a good opportunity to promote a better understanding of safe school and disaster education.

Meanwhile, the afternoon session with the theme of “diversification of community disaster management” will be a discussion on community based disaster management towards the implementation of the Hyogo Declaration.

We will appreciate your active participation in today’s symposium and hope this will be an opportunity for everyone to enhance awareness and to promote understandings on disaster management.

Thank you very much.



Kazunobu Onogawa

Opening Remarks

Shoichi Oikawa
President, The Yomiuri Shimbun Osaka

It has been 11 years since we lost lives of 6,424 citizens in the devastating Kobe Earthquake. When the earthquake hit Kobe, I was actually working in Tokyo. Three weeks later, I came to Kobe to support the news coverage on the earthquake. Even now, I can still vividly remember the tragic sight of the city. Five years passed and I moved to Osaka for work and I was surprised by the progress of reconstruction of Kobe. The city was reconstructed more than I expected. Of course, the devastating earthquake was an unfortunate fact. However, at the same time, the collective effort of affected people and their great achievement were also a wonderful truth. Every year, I resolve that we need to keep those experience in our hearts and never to be forgotten.

Ever since the 1995 Kobe earthquake, many earthquakes have occurred in Japan, including Hokkaido, Niigata, and Fukuoka and outside of Japan including Turkey, Taiwan, Afghanistan, Sumatra and Pakistan just to name a few. Besides earthquakes, we experience various disasters such as the typhoon that caused a great flood in Toyooka or the current snow storm damaged the northern part of Japan. In a time of such disasters, we are encouraged by hearing that many people who experienced the Kobe earthquake participated in rescue and rehabilitation activities as volunteers.

On the other hand, the unfortunate fact is that a part of our society gives first priority to economical efficiency. This attitude of society caused a case such as recent incident of "fabrication of earthquake resistance data" regarding which that summoning of sworn testimony was aired yesterday. The more I hear such news, the more strongly I realized the importance of our responsibility as a news media to record what happened eleven years ago and to pass it down to the generations forthcoming.

Since the day of the Kobe earthquake, Yomiuri Shimbun has covered numerous stories relating to the earthquake. Recently, we have carried feature articles under the concept of "disaster risk reduction" since last August. The monthly articles are written

based on the interviews with people who experienced the Kobe earthquake and with the purpose of raising awareness of people and the level of their preparedness. As you know, yesterday was the 11th memorial of the Kobe earthquake. Every year, we specially feature the variety aspect of disasters in January, as the featured article of this year includes articles on promotion of seismic retrofitting laws and disaster education. We, Yomiuri Shimbun, as a news media have strived to cover diversified articles as much as possible.

We started this annual symposium 6 years ago with the cooperation of UNCRD Hyogo office and Hyogo prefecture to share our experience and to disseminate our lessons. This year theme is "to build safe school, housing and community". I am looking forward to your active participation and to hear opinions on school safety, disaster education and community based disaster management.

At the last, I would like to show my great appreciation to UNCRD Hyogo office and Hyogo prefectural government and others who put their efforts on this workshop. Thank you very much.



Mr. Shoichi Oikawa

Introductory Remarks

Toshizo Ido
Governor, Hyogo Prefecture

It is a great pleasure to hold the 2006 Disaster Management Symposium co-organized by United Nations Centre for Regional Development (UNCRD), The Yomiuri Shimbun, and Hyogo prefecture.

Today, January 18th, is exactly one year after the opening of UN World Conference on Disaster Reduction (UN WCDR). One hundred sixty eight governments participated in the Conference and adapted the “Hyogo Framework of Action”, new international strategy for disaster reduction for the 21st century.

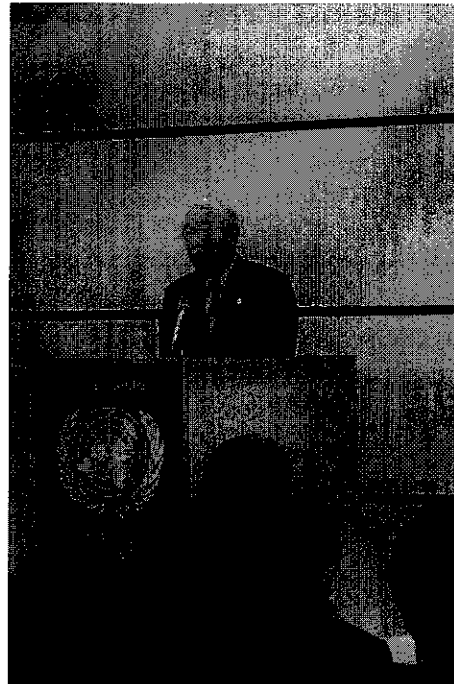
As far as I understand, during the conference, the participants affirmed that in determining the appropriate action to achieve the expected outcome and strategic goals, the following three important points will be taken into account:

1. The first one is the promotion of “culture of prevention” considering disaster risk reduction
2. The importance of community based disaster management and its implementation
3. The importance of international cooperation and partnerships in the rehabilitation and reconstruction process.

Shared concerns about the UN approach and processes for post-disaster recovery at the Conference have resulted in the formulation of a joint initiative named “International Recovery Platform (IRP)” by the UN organizations and partners, with the encouragement and support of the Government of Japan, Hyogo Prefectural Government, and other government institutions from different countries.

By the way, a case of “fabrication of earthquake resistance data” is brought on the media everyday. I was very disappointed to hear this news and has made me think that our experience of and our message from the Great Hanshin-Awaji Earthquake has not been really recognized by many people.

Known as “disaster-prone archipelago: Japan” or “earthquake-prone archipelago: Japan”, it is unavoidable fact that we will have a great earthquake



Governor Toshizo Ido

sometime near future. In order to reduce the risk of earthquakes, one of our objectives is to increase the earthquake resistancy of buildings.

Adversely, the professional architects in this case had the nerve to fabricate the earthquake resistance data to cover up the fact that earthquake resistancy of the buildings did not meet the construction code. I do not know the real cause of this incident. Whether it was lack of our effort, lack of their moral, or society that allowed them to seek profits over safety, I feel very sorry and disappointed.

What we need is to send a stronger message to the world. I strongly hope that more people learn our experience of the Great Hanshin-Awaji Earthquake. The theme of 11th memorial of “1.17” is “dissemination”. In January, as disaster reduction month, we hold several symposiums like this and also hold disaster drills in each elementary school district to enhance children’s understandings in disaster.

Also, Hyogo prefecture has established an award called “Disaster-future award”. This award is given to students of elementary, middle, and high schools that initiated disaster prevention activities. This aims to raise awareness of children, who will be the leaders for the future.

Considering the fact that we live in a country with high risk of disasters, it is important to educate the new generation who will become new leaders of disaster prevention and disaster culture. What is necessary is to educate people. This way, people will be able to take proper actions in a time of disaster.

In Hyogo prefecture, we have disaster management leader programs which provide the opportunity to be certified disaster management leader, and several public programs that anyone can participate in and learn basic knowledge on disasters and disaster prevention. Also, we organize drills in order for citizens to recognize their role and proper action during emergency situation.

“Remember 1.17”: as a member of the community, who experienced Great Hanshin-Awaji Earthquake, it is our responsibility to remember the experience of 1.17. Today’s symposium has two themes, one is “for children, earthquake resistant schools and disaster management education” and the other one is “diversification of community disaster management”. In order to disseminate our experience and lessons, these two themes will be great discussion topics.

I would like everyone to keep three points in your mind,

1. First one is why it is important to disseminate our message
2. Second one is what are our challenges, and
3. Third one is how we can put it into practice:

I look forward to the output of this symposium in being helpful to build safer and secure community.

Finally, I would like to thank UNCRD and Yomiuri Shimbun for holding such a wonderful symposium every year and I hope this will continue. Also, I would like every one of you to put some effort to make our communities safer and secure. Thank you.

Hyogo Framework for Action and Humanitarian Reform: Reaffirming the Relevance

Puji Pujiono

Head of UN OCHA Kobe and Regional Disaster Response Advisor

Introduction

I am honored to represent the United Nations Office for the Coordination of Humanitarian Affairs (or OCHA) to address this symposium as commemoration of the great Hanshin-Awaji Earthquake. I thank the UNCRD for giving OCHA this exceptional opportunity, and congratulate the organizer for organizing this international event.

This symposium is a reminder to the Great Hanshin Awaji earthquake's devastation that is amplified in recent disasters including the Indian Ocean tsunami, the hurricane Katrina and the South Asia earthquake. This is also celebration of human resilience to withstand and to recover from impacts of disasters so clearly demonstrated by Kobe, Hyogo Prefecture and Japan who recover faster and, more importantly, better.

In addition, Japan provides the sustained leadership in global disaster reduction. OCHA Kobe has been benefiting from such support for which we are indeed grateful. At this opportune time, I also encourage Japan to increase and intensify its support for the UN humanitarian reform particularly with OCHA.

Let me now introduce the United Nations Office for the Coordination of Humanitarian Affairs – or OCHA in short. We are part of the UN Secretariat and is currently led by Mr. Jan Egeland, the UN Under-Secretary General for Humanitarian Affairs and Emergency Response Coordinator. Our headquarters are in New York and Geneva, with regional offices including one in Bangkok serving the Asia Pacific.

OCHA is a duty-bearer of the UN's mission to alleviate suffering and to advocate for the rights of people in need, especially where they are needed the most – in disaster and emergencies. OCHA is charged to mobilize and coordinate effective and principled humanitarian action in partnership with national and international actors including the UN family, Red Cross Movement, NGOs/INGOs, donor agencies, etc.

In the onset of disaster, and at the request of UN country team and / national government, OCHA deploys rapid coordination assets and tools to assess and to facilitate the coordination of international response system. Otherwise OCHA continuously monitors the dynamic of disaster risks in each country while promoting the preparedness of the UN country teams and their national counterparts. OCHA –Most recently, OCHA is also assigned additional task to support the United Nations system-wide management of the Avian Influenza.

While focusing attention response, OCHA also promotes preparedness and prevention as well as sustainable recovery. Through Kobe Office, OCHA is committed to the Hyogo Framework for Action in collaboration with UNCRD, ADRC and other initiatives such as the International Recovery Platform. This Kobe office was established with the support of the Hyogo Prefectural and Japanese government, and is operating under the Bangkok office. From here, we support the East and Southeast Asian countries. We also serve as a hub of the global disaster information system called the Reliefweb. In addition we also nurture OCHA's relations with donors in the Asia Pacific region.

Let us now relate the Total Disaster Risk Management (TDRM) and the Hyogo Framework for Action.

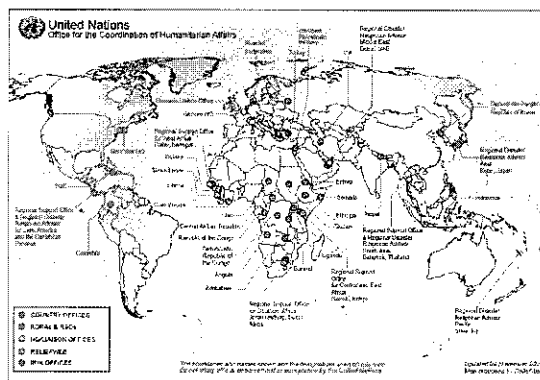


Figure 1. OCHA in the World

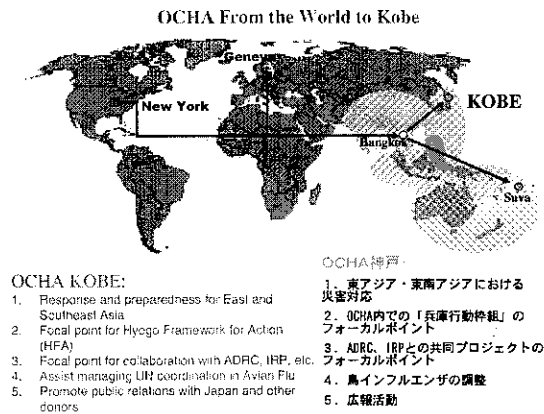


Figure 2. OCHA From the World to Kobe

TDRM as an approach emerged at end of the International Decade for Natural Disaster Reduction to address various concerns and gaps. It focuses to the underlying causes of disasters, the conditions of disaster risks and the vulnerability. The defining terms of TDRM were holistic, comprehensive, integrated, multilevel, multidimensional and multidisciplinary cooperation and collaboration.

Ultimately, it aims to integrate, complement and enhance existing disaster reduction and response strategies. During the World Conference on Disaster Reduction, held also in this city a year ago, the TDRM was discussed, enriched and ultimately formulated into a more coherent form in the Hyogo Framework for Action to be implemented up to 2015.

There is a tendency that while casualties are decreasing over the last decades number of affected people, number of displaced persons, loss of livelihood are on the increase. Along this note Mr. Jan Egeland, Chief of OCHA, not too long urged the world to take HFA more seriously and to take concrete actions for its implementation.

The HFA embodies the acceptance of disaster risk reduction into the mainstream in such a way inspired by the Total Disaster Risk Management to capture the notions of multilevel, multidiscipline, integrated and comprehensive disaster risk reduction. While I chose not to dwell on the details, let us focus on the fifth priority for actions, that is: *to strengthen disaster preparedness for effective response at all levels.*

総合的防災政策

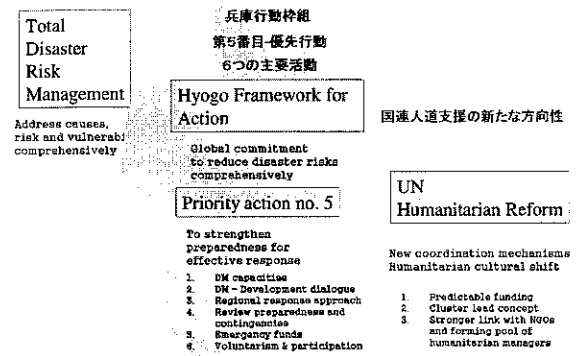


Figure 3. TDRM

This is followed by the statement that: *At times of disaster, impacts and losses can be substantially reduced if authorities, individuals and communities in hazard-prone areas are well prepared and ready to act and are equipped with the knowledge and capacities for effective disaster management.*

There are six actions proposed to achieve the objectives, they are:

1. Disaster management capacities: policies, technical and institutional capacities
2. Dialogue, coordination and information exchange between disaster managers and development sectors
3. Regional approaches to disaster response, with risk reduction focus
4. Review and exercise preparedness and contingency plans
5. Emergency funds
6. Voluntarism and participation

This fifth priority outlines the seamless interrelation of various phases of disaster management. There lies the correlation between mitigation, preparedness and response as well as recovery. By highlighting this particular aspect, I am affirming the relevance of UNCRD and OCHA, and indeed the increasing presence of UN agencies as well as other international initiatives here in Kobe. I certainly hope that closer collaborations between these organizations will prosper in the years to come.

Ladies and gentlemen,

In relation to the emergency funding and coordination, I will introduce the humanitarian reform. Drawing the experience over the recent year, the UN

is modernizing the humanitarian system to make it work better to the advantage of the beneficiary population. This involves both a) establishing new mechanisms and coordination tools, and b) requiring a cultural shift in the style and approach to humanitarian coordination.

The humanitarian reform has the following three elements:

- First: Predictable funding by upgrading the Central Emergency Response Fund into a half-billion pool of funds accessible to UN agencies, IOM and indirectly to NGOs. This fund is to facilitate easier access to jumpstart emergency operations.

- Second: Strengthening the humanitarian response capacities by introducing a Cluster Leads scheme at global and increasingly country levels in humanitarian activities; and

- Third: strengthening of humanitarian coordination system through an intensified engagement with NGO communities and through improved recruitment, skills and training of a pool of trained and experienced humanitarian coordinators.

Ladies and gentlemen,

Further on global funding, and along the tradition of Japanese generous support to global community, I will discuss the United Nations Trust Fund for Human Security. This emerged at the end of Cold War era and against the impacts of globalization and economic liberalization. The UN recognized the need for more comprehensive protection and empowerment to materialize the credo of "Freedom from fear, freedom from want" and established the UN Trust Fund for Human Security.

Rising to the challenge, Japan adopted this as one pillar of its foreign policy, it authored the establishment of an international commission and the establishment of the UN Trust Fund to support projects of UN agencies and their partners ranging from protecting people from threats of violence and armed conflict, ascertaining the minimum standards to access basic health care and basic education in integrated and multisectoral partnership fashion.

I believe that the UN Trust Fund for Human Security will continue to play key role in providing the critical impetus to advance human security in relation to our common concerns in disaster risk reduction and emergency response.

Ladies and gentlemen,

Now few words about UNCRD. I view this organization as a frontrunner of disaster reduction research and partnership. These works are indispensable because disaster responders, OCHA included, are often under tremendous pressure to respond to disasters and thus must rely on partners such as UNCRD to undertake research and development. Secondly, there are indigenous wisdoms and unique reduction practices that are worth learning and sharing. In this context, UNCRD play pivotal role provide inventions and innovations to bridge the gaps in knowledge and practices.

Let me illustrate some of UNCRD's invaluable breakthroughs. When state-centred developmentalism paradigm and the concomitant centralized disaster management were deeply entrenched in the mainstream, UNCRD introduced communities' involvement. This lingered among practitioners until, nowadays, community participation is accepted although the name and shape may appear differently. Subsequently, UNCRD brought the community-involvement to the Megacities hazards discourses to answer the unique challenges of urban environments. This year, UNCRD is taking up school safety and preparedness. This is another new and important dimension of disaster management that will benefit our next generation.

Ladies and gentlemen,

Let me close with a word of encouragement and congratulation to UNCRD. I trust that improved mitigation will reduce disaster risks and, ultimately, will ascertain human security and indeed our very survival – and that of our next generation. Thank you

Disaster Management Symposium Proceedings

Symposium II

“Diversification of Community Disaster Management”

PROGRAM [Afternoon Session]

Opening Session

Opening Remarks

Director, United Nations Centre for Regional Development

Kazunobu Onogawa

Welcoming Address

Executive Director, The Great Hanshin-Awaji Earthquake Memorial Research Institute

Toshitami Kaihar

Keynote Presentation

“Urban Vulnerability and Community Based Disaster Management”

Professor Emeritus, Visiting Professor, Cranfield University, UK

Ian Davis

Presentations: Disaster Management from Various Viewpoints

“Individual Preparations for Earthquake Resistant Homes”

Coordinator, UNCRD Disaster Management Planning Hyogo Office

Shoichi Ando

“Community Welfare and Disaster Management”

Hyogo Prefecture Social Welfare Council

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“Disaster Management: NGO’s Perspectives”

Executive Board Member, Citizens towards Overseas Disaster Emergencies

Masakiyo Murai

“Volunteerism and Disaster Management: Message to the World from the Japan Volunteer Year”

UNV Liaison Officer, UN Volunteers, Tokyo

Tomoko Shibata

Panel Discussion: Community Disaster Management: Towards the Implementation of the Hyogo Declaration

Chair:

Professor Emeritus, Kobe University & Professor, Aichi Gakuin University

Kentaro Serita

Panelists:

Director, Group III of Japan International Cooperation Agency (JICA)

Itsu Adachi

Professor, Kobe University

Yasuo Konishi

Director, National Research Institute of Fire and Disaster

Yoshiteru Murosaki

Participants Profile (In order of appearance)

[Opening Session]



Kazunobu Onogawa

Director, United Nations Centre for Regional Development (UNCRD)

Appointed as director of the UNCRD in July of 2002, Dr. Onogawa previously worked in the Environment Agency (the predecessor to the current Ministry of the Environment) United Nations Environmental Programme (UNEP), International Institute for Applied Systems Analysis (IIASA), and the National Institute for Environmental Studies With “environment as a keyword, Dr. Onogawa approaches national and international issues through a multifaceted viewpoint.

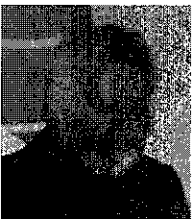


Toshitami Kaihara

Executive Director, The Great Hanshin-Awaji Earthquake Memorial Research Institute

President of Yukiyoishi Institute, Member of the Tax Research Commission, and Member of the Local Government System Research Council of the Japanese Government. Graduated (in Law) from University of Tokyo in 1956. After he entered the Ministry of Home Affairs, he was appointed as Director of the District Affairs Division of Hyogo Prefectural Government in 1970 and Vice Governor in 1980. He was elected Governor of Hyogo Prefecture in 1986 and served for four terms until 2001 (15 years). His publications include “Towards a Beautiful Hyogo” and “A Warning From Nature”.

[Keynote Speech]



Ian Davis

Professor Emeritus, Visiting Professor, Cranfield University, UK

Currently a practicing professor, researcher, architect, and author while also internationally known as an architectural and city planning specialist for areas that frequently experience natural disasters. He has also been involved in the capacity building of those who work in providing and planning evacuation points, recovery and reconstruction plans and disaster management. In 1996, Dr. Davis was awarded the UN Sasakawa award in recognition to his international contribution to disaster management.

[Presentation]



Shoichi Ando

Coordinator, Disaster Management Planning Hyogo Office, UNCRD

Coordinator of the Disaster Management Planning Hyogo Office of the UNCRD since October, 2005. Previously in 1980, he joined the Ministry of Construction and worked in the housing and architectural research departments. Later, he worked in the Japan-Peru Earthquake Research and Disaster Mitigation Center (CISMID), International Affairs Division of the Construction Ministry, and as Principal Administrator of the Pollution Prevention and Control Division at the Organization for Economic Cooperation and Development. Prior to joining UNCRD, Dr. Ando was Director of the Urban Policy Division at the Ministry of Land, Infrastructure and Transport (MLIT), Japan. His expertise is in the area of urban disaster management planning and sustainability.



Shoichi Baba

Hyogo Prefecture Social Welfare Council

Originally joining the Council in July of 1990, Mr. Baba was involved in post disaster social welfare support in the aftermath of the Great Hanshin Awaji Earthquake and from April of that year, 1995, he was assigned to the Hyogo Prefecture Volunteer Center and appointed Project Administration Vice Coordinator to assist post-disaster recovery efforts. Currently involved in regional and community social welfare development.



Masakiyo Murai

Executive Board Member, Citizens towards Overseas Disaster Emergency (CODE)

Since the Great Hanshin Awaji Earthquake in 1995, Mr. Murai has been highly involved in disaster mitigation activities, especially for the cooperation and participatory planning by disaster victims to build a capacity for self-help. Mr. Murai represents Kobe by way of taking the experiences and lessons from the Great Hanshin Awaji Earthquake to disaster sites around the globe and carrying on its memories to prevent similar disasters in the world.



Tomoko Shiba

UNV Liaison Officer, UN Volunteers, Tokoyo

Liaison Officer of the UNV since December of 2002, Ms. Shiba was previously involved in the Japan Overseas Cooperation Volunteers and also worked for the Foundation for Advanced Studies on International Development, UNV Women's Labour specialist Programme Officer in Guatemala.

[Panel Discussion]



Chair: Kentaro Serita

Professor, Aichi Gakuin University; Professor Emeritus, Kobe University

An expert in International Law, Dr. Serita previously studied in France with a scholarship awarded by the French government and his proceeding career has included his role as Japanese government observer for the 31st UN International Law Commission (1979). and various roles pertaining to the field of international law and human rights. He is currently professor at Aichi Gakuin University and Professor Emeritus at Kobe University, Chief Representative for Citizens towards Overseas Disasters (CODE), and also Chair Person of the Research Planning Committee at the The Great Hanshin-Awaji Earthquake Memorial Research Institute.



Panelist: Yasuo Konishi

Professor, Kobe University

Professor Konishi joined Kobe University in 1989 and has been pursuing the themes of participatory planning and cooperation throughout his ongoing career as member of regional labour coordination committee, Hyogo Prefecture Social Welfare Council executive council member, director of Hyogo Prefecture International Labour Organization (ILO) Association and committee member of Japan ILO Association. He also pursues "quality of life" research and betterment.



Panelist: Yoshiteru Murosaki

Director, National Research Institute of Fire and Disaster

Mr. Yoshiteru has lead the Institute as Director since 2004 after various experiences as professor. Having finished doctoral studies at Kyoto University Graduate School of Engineering, he taught since 1977 at Kobe University Engineering Department and as professor since 1987 then later became professor at Kobe University Research Center for Urban Safety. He has also been actively participating as resource person and member of various disaster management forums, national planning committees, Hyogo Prefecture, Kobe City Disaster Management Forum and have published several publications including "Regional Planning and Disaster Management" and "After the Great Earthquake".



Panelist: Itsu Adachi

Japan International Cooperation Agency (JICA), Global Environment Group III (Watershed and Disaster Management) Group Director

Mr. Adachi has lead the Global Environment Group III since April of 2004. He joined JICA in 1985 and previously worked for its Social Development Review Department, the Thai national office, administrative department, and the Cambodia Development Committee CDC) as development aid coordination specialist. He is also task manager for the watershed and disaster management programmes.

Opening Remarks

&

Keynote Speech

[Opening Session] Opening Remarks

United Nations Centres for Regional Development

Director, Kazunobu Onogawa

Welcoming Address

The Great Hanshin-Awaji Earthquake Memorial Research Institute

Executive Director, Toshitami Kaihara

[Keynote Speech]

“Urban Vulnerability and Community-Based Disaster Management”

Professor Emeritus, Visiting Professor, Cranfield University, UK, Ian Davis

Opening Remarks

Kazunobu Onogawa
Director, United Nations Centre for Regional Development (UNCRD)

Thank you for attending the 2006 Disaster Symposium, co-convened by the Yomiuri Newspaper Osaka Headquarters and the Disaster Management Symposium Steering Committee. We appreciate the turnout despite today being a weekday.

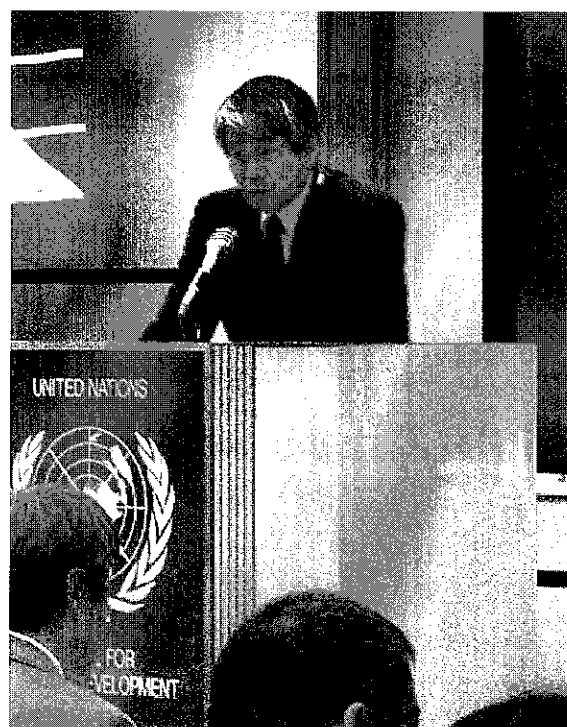
The UNCRD Disaster Management Planning Hyogo Office was established in Kobe just four years after the Great Hanshin Awaji Earthquake in 1999 with the help of the Hyogo Prefecture. In these 7 years, the topic which we have continuously pursued has been “Community-Based Disaster Management”.

Today, we will first feature a keynote speech by Professor Ian Davis, a leading scholar in the field of community-based disaster management, followed by presentations from different viewpoints including volunteers, NGOs, and public institutions.

After this, we will ask Professor Serita, an internationally renowned professor of international law at Aichi Gakuin University and also the director of Citizens towards Overseas Disaster Emergency (CODE), a Kobe-based and nationally renowned NGO, will chair the panel discussion, which features leading figures from the field.

UNCRD will embark on a new project in these coming three years, entitled “Urbanisation and Community-Based Disaster Management”. We hope that today’s ideas and discussions can be used to augment our research.

Finally, I hope that today’s symposium will be informative and beneficial to the audience and participating organizations. Thank you very much.



Welcoming Address

Toshitami Kaihara
Executive Director, The Great Hanshin-Awaji Earthquake Memorial Research Institute

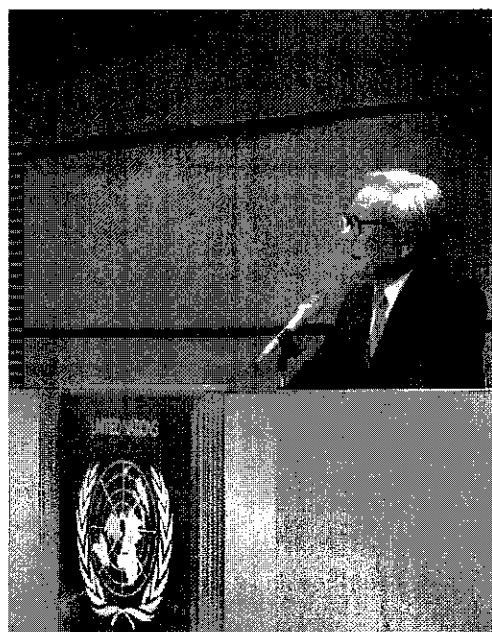
Eleven years have now past since the Great Hanshin Awaji Earthquake, at which time I was leading the emergency response task force as Governor of the Hyogo Prefecture. According to specialists, the Great Earthquake was the first of its kind to directly strike a mature modern city in an industrialized country. As such, while we suffered large and unprecedented levels of damage and loss of life, we also learnt just as many valuable lessons from this tragic experience. Therefore, not only must we be more prepared in the future, but we also owe it as a duty to the victims and survivors alike to effectively learn from these lessons to create a safe community in which each citizen can protect themselves and help each other. Under these beliefs, we established the Memorial Association in cooperation with the local and central governments to prevent the erosion of lessons and experiences from the earthquake while actively conducting disaster management research and information activities.

In order to more effectively engage in these research activities, we invited several partner organizations. As a result of negotiations with the Director of the United Nations Centre for Regional Development (UNCRD), the Disaster Management Planning Hyogo Office was established 7 years ago. Among others, the Asian Disaster Reduction Center (ADRC) supported by 23 Asian countries, the World Health Organization (WHO), and the UN Organization for the Coordination of Humanitarian Affairs (OCHA) soon joined ranks, creating an international hub for disaster management research

and activities in Kobe, Hyogo Prefecture. The UNCRD Disaster Management Planning Hyogo Office in particular has focused on the idea of Community Based Disaster Management and its Users' Manual has already been distributed and used with a high evaluation in various developing countries.

As this Symposium's main theme is to "create safe schools, homes, and communities", I believe that the participation of many experienced researchers such as Dr. Ian Davis will result in the promotion of further research and information dissemination.

This Symposium has been convened by the Yomiuri Newspaper Osaka Headquarters and the Symposium Steering Committee. As a member of the Committee, I would like to extend my warm welcome on its behalf to the audience and participants. Thank you very much.



Keynote Speech: “Urban Vulnerability and Community Based Disaster Management”

Ian Davis

Visiting Professor, Cranfield University, UK

In recent years the world has faced numerous natural disasters of unprecedented scale. In order to effectively manage and respond to these disasters, considerable efforts have been made within the last ten years to incorporate a community-based approach in disaster management. For example, in the aftermath of the Great Hanshin-Awaji Earthquake, community-led management efforts and planning schemes were publicized as a success and became a blueprint for future disaster management programmes. During the wake of the earthquake, the local communities spontaneously and effectively transformed schools into evacuation points and shelters, highlighting the capacity and decision making abilities of the community in times of disasters, as well as the importance of critical facilities that support them.

At the same time, serious questions were raised concerning the future of disaster management of Japan’s rapidly aging population. During and after the disaster, the most vulnerable among the population were the elderly, who suffered either from the direct effects of the earthquake or from the aftermath as they were uprooted from their communities and lost a supportive environment that aided their needs.

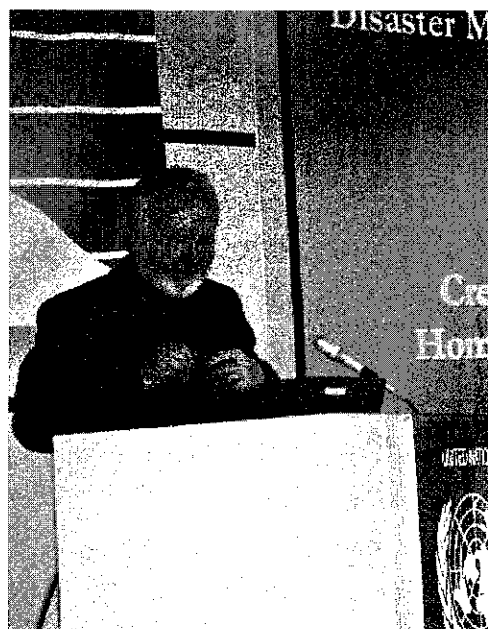
Likewise, the lack of support for the most vulnerable parts of society was highlighted in more recent disasters such as the Sumatra Tsunami, Pakistan Earthquake, and Hurricane Katrina. Those who suffered most during and after the disasters were effectively uprooted from an already

weak community with little public or infrastructural support.

In order to create a sustainable disaster management programme, there is a need for long-term commitments and partnerships among different stakeholders. These include international organizations, governments, education and training institutions who play a positive and decisive role in initiating a Community Based Disaster Management. The future of disaster management depends on recognition of the fact that the people and their communities play a central role in this process.

Global Trends: Urbanization

For the first time in history, the year 2005 has seen more people living in towns than in rural areas. The increasing urbanization is partly driven by the perception of urban opportunities and wider access



to education and health services in towns. Many move because of a “push factor”, as a result of the lack of rural livelihood opportunities or their desperate experiences of past disasters such as floods, droughts, or civil wars. Enterprising individuals make decisions to leave rural villages for cities, but these individuals are extremely vulnerable when they settle in unsafe areas of overcrowded cities.

The implications of the urbanization explosion relate to the rapid growth of cities and the consequent growth of risks. Urban areas comprise high density living with close proximity of industry and housing intensifying the industrial risks of urbanization from chemical spills and pollution of air, water, and soil. Urban migrants seeking access to employment and markets frequently occupy unsafe sites near employment or city markets.

The Government’s Role

Governments often lack resources and experience to address disaster vulnerabilities that are intensified by urbanization. The poor safety of urban areas results from the lack of urban planning and inadequate safety measures. Inappropriately built or poorly maintained hospitals, schools and water systems, which are all critical facilities in times of disasters, further demonstrate the lack of awareness and preparedness.

Also, urbanization often encourages the construction of makeshift housing on unstable slopes, particularly in areas that have experienced extensive deforestation, creating further vulnerabilities. These areas most often lack critical facilities and basic infrastructure. Furthermore, the lack of a national emergency plan, warning systems and more basic initiatives such as the planning and marking of evacuation routes increase the vulnerabilities to a very critical level.

Therefore, governments must incorporate solid safety measures into urban planning and create secure infrastructure and facilities. Reducing risks to critical facilities and infrastructure should occur at national levels of disaster planning, including a focus on the protection of school buildings. Industrial controls and waste management need to be formed and enforced to prevent secondary disasters. In order to effectively address all these problems, government disaster plans need to be comprehensive and promote public awareness, incorporating an Early Warning System (EWS) among other things.

One assumption with many previous Community Based Disaster Management programmes is that they were designed under the assumption that a stable community structure with cohesive leadership already existed. However, we must recognize that many marginal urban areas are inhabited by isolated families with no real community structure with their neighbours. Thus there is a need to design creative community based disaster management programmes that will be effective in these complex conditions. We must first begin with building communities to cohesively work together. The starting point is to understand the community dynamics and characteristics of its leadership. This will facilitate the creation of instruments to promote ownership and empowerment at the community level.

The Community’s Role

In addition, communities contain a rich source of experience and skills needed for Community Based Disaster Management. They clearly have a great understanding and awareness of their own problems and capacities. To ensure the likelihood of long-term sustainable success, they need to be dynamically involved in all actions.

Communities should be responsible for implementing safety measures in their own

dwellings. It is their job to also invest in plans for preparedness and disaster drills. They should be encouraged to link their efforts and preparedness into local institutions and existing programs at a community and government level. The challenge to build resilience is to assist communities in absorbing shocks and be able to bounce back from disaster setbacks.

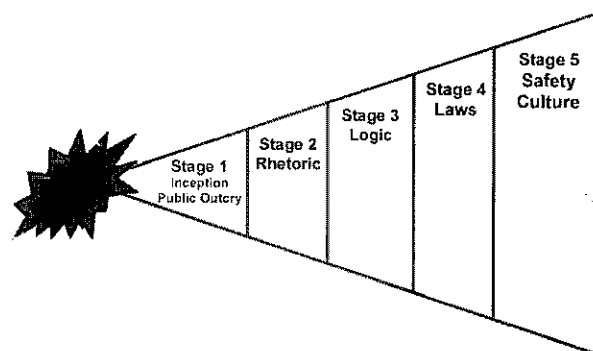
What communities can do to reduce the disaster risks in urban areas

Communities must seek to bridge the gap between NGOs and governments. There is a need to infiltrate community risk reduction into the wider community. Information and awareness can be effectively transmitted from NGOs to the community. We must steer away from a constant need for technical professionals to spread awareness and information. By utilizing key community individuals like schoolteachers and medical assistants, we must seek to de-professionalize risk reduction actions at community levels. There is thus an urgent need to measure the capacity of local communities. Following disasters, policymakers often measure and highlight the material damages and immediate needs, but the disaster management capacity of the local community is hardly measured before and after major disasters.

We need to find cost effective safety measures, new ways to reduce risk, and creative approaches to record risks to protect the poor and otherwise vulnerable community members. A unique example of such an awareness raising initiative can be found in a remote village in Australia. Geography teachers and students keep a record of maximum water levels during past floods by printing flood levels with dates on telephone poles. Such ingenious awareness campaigns are very informative, yet they require minimal resources for the local community to

implement other than to secure accurate data on flood levels.

Ultimately, to effectively implement community based disaster management, disaster prone cities and villages must seek to develop a “safety culture”. The process of developing such a culture of resilience can be seen as a five-stage process. Stage

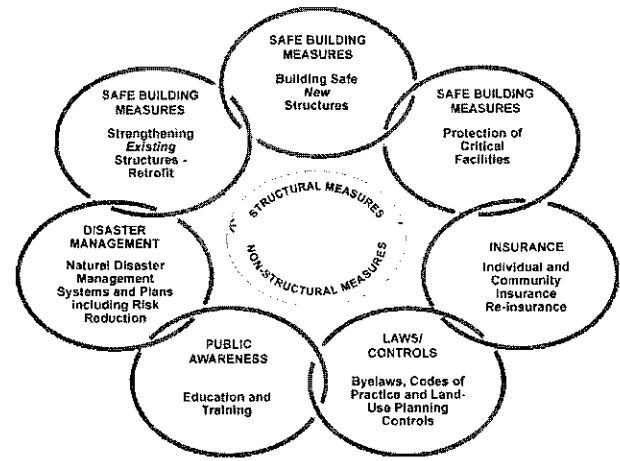


1 might begin with a huge disaster like the Kobe earthquake. The disaster results in a massive public outcry when victims and the media criticize government response and the people demand more resources and action from the government. Stage 2 involves much rhetoric with politicians promising better response and management in the future. This is an important stage where people are speaking with high aspirations and confidence. Stage 3 is a logical process involving a thorough cost benefit analysis. Officials must explore the immediate costs of recovery. They must also explore the costs of making the village or city safer. At this point, the governments and communities realise that these essential efforts are going to require large financial and capital commitments. Stage 4 sees the formation of new disaster laws and legislation accompanied by new disaster reduction plans. As legislation needs to remain relevant, this requires constant updating and renewing. In Stage 5, a Safety Culture finally comes to be realised. Education, public awareness, the media, school curriculum, and the laws are synchronized as they all work towards a common goal of public safety. Although this harmony is

difficult to maintain, it is essential to protect vulnerable communities in all hazard prone cities and villages in the world.

We need key integrated projects that aim to merge all the elements of risk reduction into a holistic programme based on a given society's overall capacity and vulnerability. We must link social, cultural, political, physical, economic and environmental data to maintain a Safety Culture.

A city is made out of thousands of communities, institutions, community leaders, jobs and opportunities. To understand a city we need to understand its' community safety. If Community Based Disaster Management is to have any impact, it must be exceptionally strong and extremely flexible. If a living plan like Community Based Disaster



Management is placed under the inspired leadership of a vibrant community, it can take root and sustain itself beyond future adversity. We must agree with Franklin MacDonald of Jamaica who has spent his entire career seeking to reduce disaster risks. His wise words are that “The best protection against disaster is a well prepared community”.

Presentations

”Disaster Management from Various Viewpoints”

“Individual Preparations for Earthquake Resistant Homes”

Coordinator, UNCRD Disaster Management Planning Hyogo Office

Shoichi Ando

“Community Welfare and Disaster Mangement”

Hyogo Prefecture Social Welfare Council

Shoichi Baba

“Disaster Management: NGO’s Perspectives”

Executive Board Member, Citizens towards Overseas Disaster Emergencies

Masakiyo Murai

“Volunteerism and Disaster Management: Message to the World from the Japan Volunteer Year”

UNV Liaison Officer, UN Volunteers, Tokyo

Tomoko Shiba

Ensuring Seismic Safety of Your Own Housing

Self-help, cooperation and public assistance for safer houses –

Shoichi Ando

Coordinator, Disaster Management Planning Hyogo Office, UNCR

1. Lessons from the Great Hanshin-Awaji Earthquake

Japan has experienced seven times of over two thousand dead persons caused by disasters per year after the World War II. In particular, six times have been occurred during the period from 1945 to 1959, when numerous big disasters happened. Above all, over five thousand dead persons by Ise-bay Typhoon in 1959, and nearly four thousand tolls of lives by Fukui Earthquake in 1948 were the worst tragedies. For the following 35 years, number of annual tolls by disasters accounted for less than one thousand persons, and the number decreased till the year 1994.

However, the tolls by the Great Hanshin-Awaji Earthquake (refer to GHAE hereafter) on 17 Jan. 1995 numbered over 6,400 persons and resulted in the worst disaster after the World War II. Approximately 90 % of toll was due to the collapse of houses. How can we avoid these victims? Especially, what can individuals or communities do?

Firstly, Prof. Kawata, executive director of the Disaster Reduction and Human Renovation Institute (DRI) and director of the Disaster Prevention Research Institute (DPRI) of Kyoto University, noted; “Disaster management to prevent small disasters has achieved to a certain extent owing to hardware development. On the other hand, in case of huge disaster, the hardware improvement alone reaches the limit. Total methods integrated hardware with software such as evacuation training or disaster education, will contribute to reduce disasters.” In other words, ordinary expected level of disaster should be prevented through hardware preparedness, while in case of extremely rare disasters like once per several centuries, it will not work enough if it is only with hardware.

However, in such a case of housing collapse at the GHAE, almost of toll originated in the destruction of buildings, although the seismic scale registered as VI plus. This intensity implies that all of building structure should be designed to protect human beings, even if the building itself suffers damages, according to the current Japanese building code. This shows that the houses, in particular those designed with old seismic building standards, needed to be improved from viewpoints of minimum hardware. The delay of individual improvement of houses may come from the prejudice that earthquakes do not occur in Kobe. In

addition, the municipalities also have had little

understanding of the danger of buildings with old standards.

2. Promotion Measures of Seismic Retrofitting for Houses

Based on the lessons of the GHAE, the Japanese government established around 20 laws and the “Act for Promotion of the Earthquake Proof Retrofit of Buildings” (refer to “Retrofit Promotion Act”) was created in 1995 as one of them. Moreover, many local governments provided various support systems in order to promote seismic retrofitting conducted by owners and the private sector. National government also provides new subsidy systems including grant systems such as the regional housing grants and the community renovation grants. Furthermore a tax reduction system of loans for seismic retrofitting works will begin from this year.

Why do so many public assistance systems for housing seismic retrofitting exist, though houses are private assets? Originally, this argument arose immediately after the GHAE. Has the government decided not to appropriate tax revenue (public assistance) for the reconstruction of individual houses, then?

One of the reasons why such a policy change has made, may result from the establishment of the “Act concerning Support for Reconstructing Livelihoods of Disaster Victims” in 1998 and its revision in 2004. This Act is legislation at the instance of House members on the basis of several disasters after the GHAE. According to this Act, in case of completely or partially destroyed houses, a certain amount of public assistance can be provided to owners of such private assets. For instance, the owner of a completely destroyed house can allow one million yen for purchasing household effects and two million yen for reconstruction of the house, i.e. in total three million yen will be granted.

In addition, collapse of houses causes streets blockade and this may bring about crucial obstacles to escape, fire fighting and/or relief activities, when an urban fire occurs as the experience at the Great Kanto Earthquake in 1923 and in Nagata ward of Kobe city at

the GHAE. Namely, seismic retrofitting of buildings including house, is indispensable in order to secure entire urban safety. Therefore, public assistance can be provided, even though houses are private assets.

Taking a view of the estimated tolls by the Tokai Earthquake published by the Cabinet Secretary last year (in 2005) as a reference, the maximum number of toll will reach to approximately 9,200 persons by the assumed ocean-type Tokai Earthquake. And around 85 % of toll, i.e. approximately 7,900 dead persons will be due to the collapse of buildings and the like. At the same time, the Cabinet Secretary announced a target to reduce those tolls by half in the “Earthquake Disaster Mitigation Strategy” for Tokai Earthquake. For that purpose, a detailed target to improve housing seismic retrofitting ratio was set up from current 75 % to 90 % within these 10 years. The “Earthquake Disaster Mitigation Strategy” was also created for Tohankai and Nankai (South-east Ocean and South Ocean) Earthquake last year and its main targets consist of housing seismic retrofitting and tsunami disaster prevention measures.

These are the backgrounds of movement that many actors established new supporting measures for housing seismic retrofitting in all parts of Japan from last year till now.

3. Sharing Role within Self-help, Cooperation and Public Assistance

This section describes an explanation on the idea of self-help, cooperation and public assistance indicated as Figure 1 below. The Hyogo prefecture government considers these three factors as almost the same basis or equivalent. Such idea represents that each stakeholders may do what each can do on an equal footing with self-help, corporation and public assistance.

On the other hand, the idea shown in the figure originates in the policy principles of Mr. Tsuchiya, a member of the House of Representatives and the former mayor of Musashino city in Tokyo until last year, when he was the mayor. This idea signifies a direction of general community redevelopment and policies at the municipal level from the first, not for disaster prevention. His policy implies that “self-help” has the first priority and the next is put on “cooperation” in a community when only one cannot execute, then finally municipalities should do if communities cannot execute. It is a kind of phased responsibility sharing theory.

Musashino city is famous for its innovative policy developments such as creation of “Mobus” system which manages circulation-type small community buses, and greenery policies and so forth as a policy

leader in Japan. These policies are based on the idea mentioned above.

It is not possible to answer which idea will work better between the idea that each stakeholder may do what they can do indicated as Hyogo prefecture and other one that puts the first priority on the self-help. Probably, when the interest connects directly to individuals like retrofitting of houses, self-help may be the first alternative. And when a policy on disaster reduction for public facilities is the target, those three stakeholders should execute what each can do according to the extent of their respective interest. This figure proposes an idea for discussions that there exists various way of thinking concerning self-help, cooperation and public assistance.

Figure 1

Self-help, Cooperation and Public Assistance for Securing Housing Seismic Safety

Self-help : I do what I can do by myself.

e.g. Earthquake retrofitting or rebuilding of own house based on a structural evaluation

Cooperation : We do what one can't do.

e.g. Reconstruction of apartment houses; Hyogo prefecture's Cooperative Housing Rebuilding System

Public Assistance : Govt. does what we can't do.

e.g. Subsidies for retrofitting of houses along streets; Earthquake retrofitting of public rented houses etc.

4. Introduction of Symposium II

Today in the afternoon session, each lecturer will provide a speech on the idea “what each local stakeholder, such as the public sector, NGOs and volunteers has done and can do for disaster management focusing on participation and collaboration” under the theme of “Community-Based Disaster Management”. Every lecturer plays an important role of the Japanese respective field.

Based on the experiences of the GHAE, Mr. Baba, director of the Social Welfare Council of Hyogo prefecture, represents the public sector, Mr. Murai, secretary general of Citizens towards Overseas Disaster Emergency (CODE), represents NGOs and Ms. Shiba, coordinator of United Nations Volunteer (UNV), will make a presentation from the viewpoints of volunteers. The lecturers may include the idea on self-help, cooperation and public assistance and/or examples of role sharing among individuals, communities and municipalities.

Then, Ms. Yamada, researcher of our Disaster Management Planning Hyogo Office of UNCRD, will introduce a study titled “Urbanization and

Community-Based Disaster Management (refer to CBDM hereafter)” that started from this fiscal year as a three-year program. The CBDM approach is a key theme of this office since its establishment in 1999. After the first three-year research program on “CBDM rooted in Culture and Climate”, the second three-year action program on “Sustainability in CBDM” has been implemented and the results were presented at the United Nations World Conference on Disaster Reduction (UN-WCDR) in Kobe last year as a “CBDM User’s Guide” and so on. These series of programs are supported by the Hyogo Trust Fund of Hyogo prefecture through the Great Hanshin-Awaji Earthquake Memorial Research Institute.

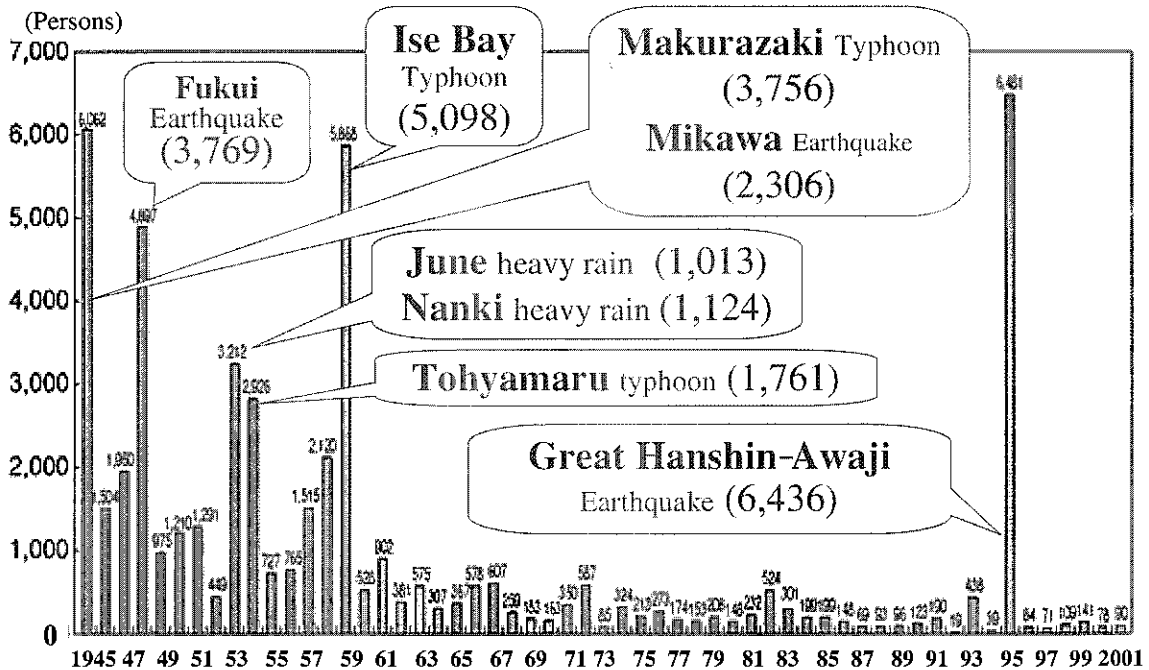
Lastly, the UNCRD asked the chairperson of the panel discussion to Prof. Serita, who is a world prominent scholar on policy science, and the most appropriate person as the theme of “CBDM; towards the implementation of the Hyogo Declaration”. As the panelists of discussion, we invite Prof. Konishi of Kobe University, Dr. Murosaki, president of the National Research Institute of Fire and Disaster, and Mr. Adachi, director of the Group III of Global Environment Department of Japanese International Cooperation Agency (JICA) from Tokyo headquarter.

It will be a great honor if all of you find the symposium informative.

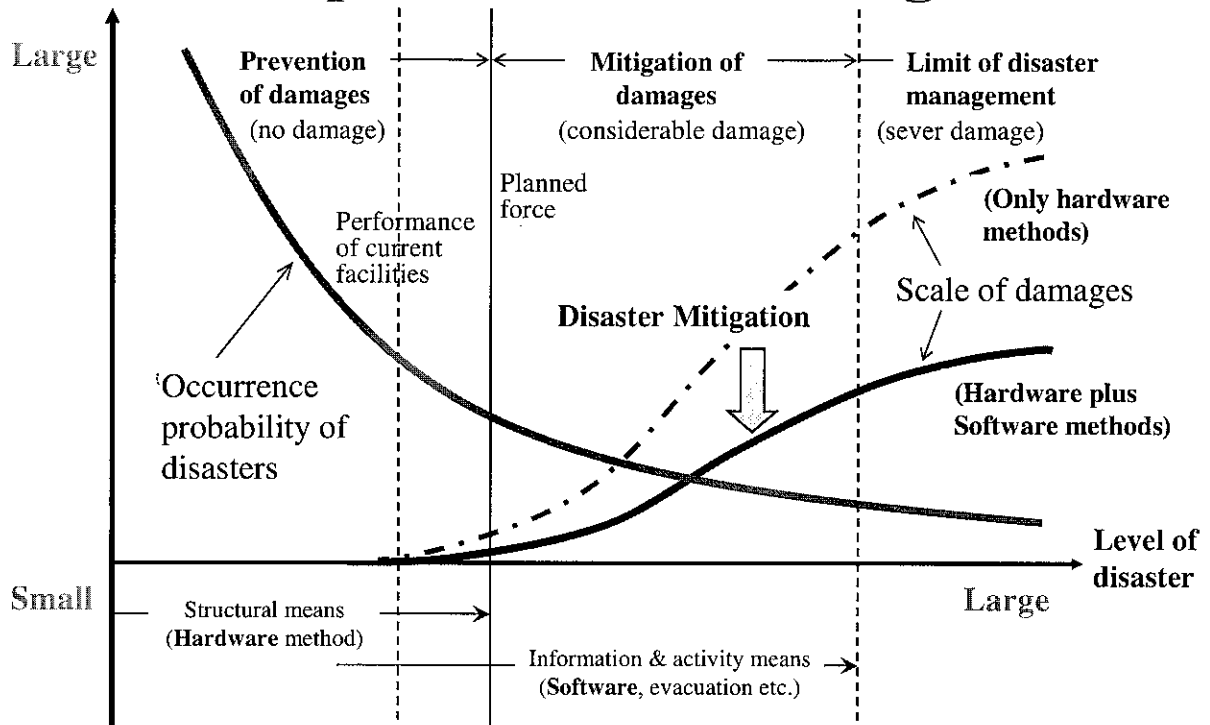
(Reference: See next page)

Large-scale Disasters in Japan

(Number of dead and missing persons by natural disasters)



Concept of Disaster Management



Note: This figure is described based on the materials of Dr. Yoshiaki Kawata at "the 2002 Summer Seminar on Water Engineering" hosted by Japan Society of Civil Engineers

Housing Seismic Safety in Tokai Earthquake Disaster Reduction Strategy

Target: Reduction by half of the death and economic damages within 10 years

Death approx. 9,200 persons **→** approx. 4,500 persons
 (including 7,900 death by collapse) Reduce approx. 4,700

Safer houses and buildings	Reduce approx. 3,500
Raising public awareness of tsunami	approx. 700
Less fires by achieving safer houses	approx. 300
Improvement of coastal safety facilities	approx. 100
Measures for land slides dangerous areas	approx. 90

Concrete Target
Seismic safer housing ratio
 from 75% → to 90%
 (in 2003) (10 years later)

Economic Damages approx. 37 trillion yen **→** approx. 19 trillion yen
 Reduce approx. 18 trillion yen

Lost assets (safer houses and buildings and so on)	12 trillion yen
Influence to another regions	Reduce approx 3 trillion yen
Suspension of production activities (securing labors and assets)	Reduce approx 2 trillion yen
Blockade of trunk transportation (safer railway of Shin-kansen etc)	Reduce approx 2 trillion yen

Note 1: Numbers of damage are the maximum estimated cases.

Note 2: There are cases that the sum does not agree because of round off.

Community Welfare and Disaster Management

Shoichi Baba
Hyogo Prefecture Social Welfare Council

The Council for Social Welfare is a non-profit that operates under the principle of “Citizen First” and seeks to address the various issues pertaining to the community through dialogue, collective thinking, activity planning and cooperation. Through such activities, we aim to improve social welfare in the community and its capacity to improve welfare. We also do not focus on only one welfare topic but holistically approach multidisciplinary issues, new and old problems, and stalled issues and address them in a comprehensive manner.

The Council has three operating characteristics, which are the forum/council, operating body, and activity planning and these work together as a whole to increase the community’s capacity for “community social welfare” or the ability and environment for community members to live safely in their neighborhood. To do this, we cooperate with NGO/NPO’s and volunteers, regional governments and institutions for a collective effort in building our local community.

The Council’s initiatives aim towards the creation of a “community social welfare” by focusing on the various members of the community including the socially vulnerable and preventing isolation within the community so as to create a safe environment. This in turn reflects and increasing the ability of community members to identify community issues and to cooperate and taking the lead to address them. It is also the ability of community members to identify and develop its resources, to communicate with specialist

institutions and government, participating in the planning of their community, and thereby also strongly linked to disaster management.

When planning for disaster management and prevention, it is important to divide the responsibilities between self help, cooperative help, and public help. Self-help is the responsibility among family members, individuals and each member of the community. Cooperative help is engaged by NGO’s, volunteers and citizen groups, which must adapt to the various characteristics and needs of a community in times of disaster. Public help comes from regional and central government and must be impartial and evenly spread out. The Council also acts as an operating platform and facilitator in order for these three types of help to function correctly. Through such an arrangement, individuals should coordinate their evacuation, rescue of neighbors, etc. with groups and public bodies that can help identify, address, and deliver emergency supply and resources, while in pre-disaster times, all groups should cooperate towards risk and resource identification and assessment through participatory planning and activities such as hazard mapping. Nonetheless, individual help is usually the most limited and vulnerable among others and that which cannot be addressed by the individual should be addressed through the work of community social welfare building.

In January 1999, the Hyogo Council of Social Welfare along with the Kobe Council of Social Welfare and Consumer’s Cooperative Union (Coop) Kobe made a

“Joint Declaration for Social Welfare” in reflection of the Great Hanshin Awaji Earthquake. The content is as follows. We seek to creating a society that protects its citizen’s social welfare. The social welfare that we aim for is an environment that respects self determination, fosters cooperation among individuals and promotes creating a safe society that protects the interest of each community member. Moreover, through our experiences with the Great Earthquake we have come to realize the importance of developing individuality/independence, collective responsibility, understanding, living together, and cooperation in our society. We would like to continue on developing our activities along with fellow citizens to implement social welfare by applying such experiences and lessons. By spreading our intent and such lessons among our community members, we hope to act as a focal point of cooperation.

On September 29, 2005, we facilitated a “Hanshin Awaji Earthquake Commemorative Social Welfare Forum” with the theme “Carrying on the lessons from large scale disasters to the future” and made a nationwide declaration regarding the creation of safer communities:

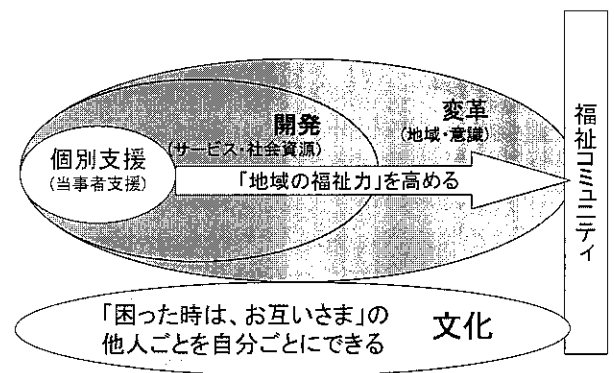
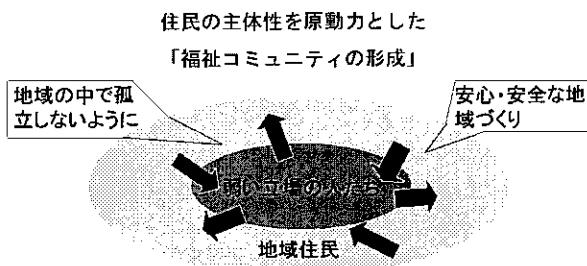
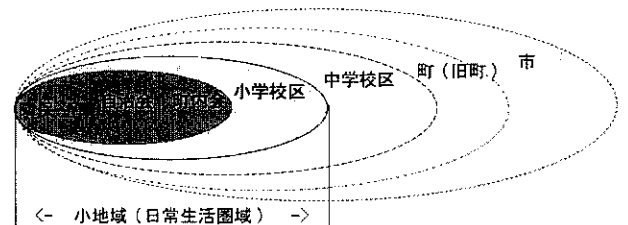
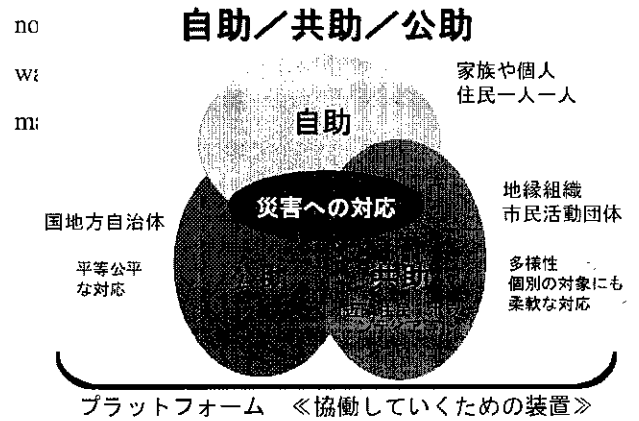
1. In order to ensure the equal and timely delivery of emergency supplies and resources, we should work on pre-disaster community-level networking and increase preparedness;
2. A social safety net to insure a safe community environment should be established in cooperation between community members and government;;
3. We must focus on community members and a culture of cooperative help to address the material and emotional needs of each disaster victim and those needing help;
4. We must work towards removing bottlenecks that prevent individuals from accessing relevant and necessary information during disasters;
5. A disaster-resistant community is born from the

- collective action of each community member;
 6. Disaster management is equivalent to the community capacity of social welfare and pre-disaster cooperation and activities within the community is important;
 7. The Community Social Welfare Institution will act as a welfare and emergency support base for the community;
 8. In order to act as a base during emergency, it is important to create a viable network through pre-disaster coordination with community groups, members, and related institutions;
 9. Practical decisions and requests for necessary emergency supplies and resources should be made by identifying the particular needs of disaster struck communities;
 10. By engaging in basic daily activities, we will seek to help the community gain added values and better service;
 11. Various bottlenecks and issues can be overcome with shared responsibilities and cooperative action.
- In order to continue increasing community level capacity for disaster management and social welfare, I think that initiatives at the micro-community level (at the level of daily life) are important. In other words, it is necessary to form initiatives with disaster management perspectives at the level of neighborhoods, town /community/neighborhood councils, school districts where it is close to the daily life activities of community members. The Community Social Welfare Institution thus focuses on two prefectural level themes. One is the creation of a “community welfare focal point/place” by community members and the other is micro-community welfare planning that incorporates the voices and dreams of community members. By facilitating such initiatives through a micro-community welfare (including disaster management) network, a system of support, care, and cooperation will rise along with it.
- In particular, if groups and individuals such as

regional/neighborhood committee leaders and members, child welfare committees, volunteers, and social workers, who can cooperate with other community members to create a network among victims and support community service activities, vertical arrangements among community members will change into a more holistic arrangement in which all community members can support and cooperate with each other. In order to pursue this, we should focus on individualized services and support to develop social capital and promote a positive change of the

community mentality and these activities, in turn, should contribute to increasing community level capacity for disaster management and social welfare.

The initiative to increase community level capacity for disaster management and social welfare is based on a culture that in times of need, everyone is the same and should help each other, that somebody else's problem is



Disaster Management: NGO's Perspectives

Masakiyo Murai

Executive Board Member, Citizens towards Overseas Disaster Emergencies

Our non-profit organization, the "Citizens towards Overseas Disaster Emergency (CODE)", was established 11 years ago in the aftermath of the Great Hanshin Awaji Earthquake. At that time, we received assistance from 75 countries worldwide and since this experience, we have been operating internationally in disaster-stricken areas under the principle of "helping one another in times of need". In May of 1995, the same year of the Great Hanshin Awaji Earthquake, we embarked on our first overseas mission in Sakhalin where a large earthquake had struck. By the 4th of October last year, our disaster response mission in Pakistan marked the 38th mission, among those we had already undertaken in 22 countries. Our operating principles focus on prioritizing victims of disasters in areas that have difficulty receiving aid. Since we are not disaster response specialists such as doctors, our main activities reflect the group's background as citizens of a disaster struck area. In particular, we strive to share our various experiences with the long-term process of recovery with disaster victims abroad. We would like to introduce you to our community-based activities, which we are currently pursuing in reflection of these principles.

It is said that over 90% of the 6,434 lives lost in the Great Hanshin Awaji Earthquake were directly related to the collapse of buildings and homes. As such, it is rather important to communicate that buildings should be safe and not collapse. Especially since the Gujarat Earthquake in India, we have worked with the UNCRD to raise community awareness by public shaking-table tests and other such demonstrations to urge the integration of proper building re-enforcement during the process of rebuilding and recovery.

The Sustainable Environment and Ecological Development Society (SEEDS), an Indian NGO that has visited Japan several times, has also extensively contributed on this issue. Following the Gujarat Earthquake, the group initiated a fact finding mission that actively involved masons and members of the community to come up with a disaster management and prevention plan, which it has since taken overseas to share the knowledge along with CODE. In last year's Indian Ocean Tsunami Disaster, the group was already in the Andaman Islands two day after the disaster and in the Pakistan Earthquake, they were on site the day immediately after the disaster struck.

Another one of our activities, initiated since the Tsunami Disaster, focuses on disaster education for children in Indonesia, Maldives, Sri Lanka, and Thailand. In the Maldives, we have translated a Japanese folktale about tsunamis and a song about earthquakes into the local language and disseminated disaster management information through the teachers to the local schoolchildren. The folktale, "Inamura no Hi (A Fire Among the Straw Sheaves)" is an old story passed on through generations in northern Japan to warn about the dangers of tsunami. The "Ohashimo" song, the title being an acronym for the Japanese words "no pushing", "no running", "no talking", and "no returning", instructs children to act in an orderly fashion and not panic when earthquakes strike and has been adopted as an official earthquake song in the Nudo Primary School District in Nagoya.

Likewise on the island of Nias in Indonesia, the Ohashimo

song was introduced to the local community. But here, not only were the lyrics translated, but were also considerably changed along with the melody to fit the local flavor and disaster experience, as a result creating an original earthquake song for Nias. This in fact is the most ideal outcome, because while it is also good to introduce a Japanese disaster education song to a foreign community if they adopt it without complaints, but the best case would be for the local community to adapt such practices while incorporating local knowledge and information to produce their own product. Such products will surely be far more effective than a foreign idea because it would have involved the local community participation and the information is more relevant.

In Thailand, the folklore “Inamura no Hi” was translated into Thai and presented as a picture play by Professor Sato of Hirosaki University in Aomori. Because of different political and social environments in northern and eastern Sri Lanka, we could not gain easy access to these areas in comparison to the southern regions, but in the immediate aftermath of the Tsunami, we were working through the local YMCA to help with the recovery effort. Currently, we operate mainly in the southern regions like Matala, where we are working to spread disaster education. In a few days, one of our staff members will fly to Matala and embark on a one-year disaster education support programme in the local community. During the year, we hope to disseminate relevant information through a variety of mediums including songs and picture plays.

We NGO’s fall in the category of those who offer or promote “self-help” and “cooperative help”, I think part of our mission is to try to build the capacity of resilience and protecting one’s own life in the field of self-help. I believe that people do not grow strong on their own, but through interaction with others, their surroundings, and nature. In this sense, we believe that volunteers and NGO’s like us with experience from the Hanshin Earthquake will

effectively increase awareness and capacity against disasters by working closely on the education of children in disaster prone communities. To this end we are also trying to coordinate with local educational institutes and in April this year, the Asian Disaster Reduction Center (ADRC) will initiate a new project in southern Sri Lanka so we foresee further coordination and the joining of forces with such likeminded organizations.

Finally, regarding our domestic activities, we have been training volunteers who have experienced the Hanshin Earthquake to various communities and regions in Japan to spread disaster management information and build capacity. We have held many public opportunities to disseminate information on disaster management methods, such as the organization of post-disaster recovery and evacuation points and how to effectively prepare against disasters. During these opportunities, we also share information and experiences we have gained from our activities abroad and promote “learning from each other” to increase our disaster management capacity. We believe that these activities are the mission of our NGO, CODE, which was born in the smoldering aftermath of a terrible disaster.

Because we are a non-government organization, we prioritize providing aid to those where supplies are hardest to reach, especially with local government capacity and resources following a disaster. We believe that the insights gained from such activities will contribute to the overall betterment of our collective disaster resilience. In other words, rather than trying to help as many as possible, by thinking what we can do for a single community or even a single victim, we will end up helping many. This, I believe, is the mission of an NGO. Under such principles, we will continue to promote disaster management by taking into account the various social and cultural characteristics of the community.

Volunteerism and Disaster Management: Message to the World from the Japan Volunteer Year

Tomoko Shiba
UNV Liaison Officer, UN Volunteers, Tokyo

In January 1995, the Great Hanshin Awaji Earthquake struck Kobe. We witnessed many volunteers rushing to the affected areas. They were citizens who were concerned about the devastated areas and whose volunteer spirit led them to help people in need. According to the study by the Economic Planning Agency then, more than 1.37 million people volunteered to support those victims most affected. The outpouring of volunteer commitment and energy for the sake of Kobe made headlines around the world providing many moving examples of the heroism of ordinary people. The spirit has been shared with many other people and so the year 1995 is also remembered as the "first year of volunteerism in Japan".

It started here in Kobe, and moved to the society as a whole. In addition, the impact was not limited within the nation but has been expanded worldwide. Three things deserve special mention. 1) International Year of Volunteer 2001, 2) World Conference on Disaster Reduction and 3) World Conference for Volunteer for Disaster.

Japan was the first to propose the idea for an International Year of Volunteers (IYV) to be proclaimed as the world entered the 21st Century, pushed by the increasing backing of the general public and mass media and inspired by the first year of volunteerism in Japan. UN General Assembly in its 52nd session on 20 November 1997 in Resolution 52/17 decided to adopt the resolution proclaiming 2001 the International Year of Volunteers. This important momentum for promoting volunteerism in the world was created and it all started here from Kobe, Hyogo.

During the year many activities took place with the facilitation of UNV under four objectives; 1. Recognition, 2. Facilitation, 3. Networking and 4. Promotion. The IYV 2001 raised the visibility of volunteerism and increased understanding of its contributions to economic and social development; it encouraged and honored civic engagement; it helped strengthen volunteer networks; and it lifted volunteerism higher on both national and international agendas. The recommendation adopted by the General Assembly in 2002 reaffirms the importance of extending the notion of volunteerism as an additional valuable component of national development planning and for development cooperation policy. Recognizing and building strategically on rich, local tradition of voluntary self-help and mutual aid can, among other things, open the way to building up a new constituency in support of development efforts.

Number two: Similar challenges of role of volunteerism and disaster reduction were addressed in the World Conference for Disaster Reduction which took place in Kobe last year, and marked the 10th anniversary of the Hanshin Awaji Great Earthquake.

For those of us focused on promotion of volunteerism, the WCDR produced a clear message. The Outcome document reaffirms that disaster risk management policies and programmes must include volunteers and there is a need to support them in their crucial role in prevention of and response to natural and human-induced calamities. The capacity of local level volunteers to be effective agents in disaster risk management is one of the most crucial determinants in

how community copes with disasters.

This was the first time in this kind of big conferences that the role of volunteer was clearly stated. It is worth revisiting the document and remembering that this happened again in Kobe 10 years after the Great Hanshin Awaji Earthquake.

You may say that what difference can just a few references make, but it should be a very important step forward to formally recognize the many millions of ordinary citizens who engage themselves in the immediate aftermath of disasters and community driven disaster reduction.

Let me quote the paragraphs that mention “volunteer”.

First, Paragraph 2 of the Hyogo Declaration provides an important role of volunteers in the disaster management. It provides an outstanding opportunity for volunteers to offer concrete support for disaster reduction.

We recognize the intrinsic relationship between disaster reduction, sustainable development and poverty eradication, among others, and the importance of involving all stakeholders, including government, regional and international organizations and financial institutions, civil society, including non-governmental organizations and volunteers, the private sector and scientific community. We therefore welcome all the relevant events that took place and contributions made in the course of the Conference and its preparatory process.

As such Hyogo Framework for Action 2005-2015 contains 4 paragraphs, which mention volunteer inclusion in disaster reduction.

II

B. Expected outcome

The realization of this outcome will require the full commitment and involvement of all actors concerned, including governments, regional and international organizations, civil society including volunteers, the private sector and the scientific community.

Paragraph 20 (f)

Develop specific mechanisms to engage the active participation and ownership of relevant stakeholders, including communities, in disaster reduction, in particular building on the spirit of volunteerism.

Paragraph 21

IV. Implementation and follow-up

.....Civil Society including volunteers and community based organizations, the scientific community and the private sector are vital stakeholders in supporting the implementation of disaster risk reduction at all level.

Lastly, but not least: Along with WCDR, the “World Conference for Volunteer for Disaster” was held as a part of public forum event of WCDR in order to facilitate exchanges among international volunteer groups as well as other actors from the private sector and civil society to increase knowledge of create awareness of good practice in disaster reduction and establish a network to enable these organizations to collaborate further. It was organized by the different representatives of the NGOs engaged in disaster reduction, including UNV. In the conference it was agreed and declared that the participants continue to strive for promoting networking between governments, NGO, civil society organizations, volunteer organizations and international organizations to create, among other things, a culture of disaster reduction. And now a collaboration between UNV and a NGO in Kobe, Center for Overseas Disaster Emergency(CODE) has just started in Sri Lanka, which is a good example of the collaboration.

Volunteerism is an ancient and global phenomenon. Since the beginning of civilization, a fundamental value has been people helping people and in the process, helping themselves. Volunteerism is a cross-cutting social phenomenon that involves all groups in society and all aspects of human activity.

Voluntary action is at the core of social capital and underpins most social actions in civil society. It is also expressed through civil society organizations. CSOs encompass a very broad range of types and serve an array of constituencies. However one feature they have

in common is that their roots lie in volunteerism. So we do not need to invent volunteerism. But we need to facilitate voluntary action. We need to lower the obstacles that keep many willing individual and organizations from acting on their most generous impulses.

Panel Discussion:
Community Disaster Management: Towards the
Implementation of the Hyogo Declaration

Chair:

Profesor Emeritus, Kobe University & Professor, Aichi Gakuin University

Kentaro Serita

Panelits:

Director, Group III of Japan International Cooperation Agency (JICA)

Itsu Adachi

Professor, Kobe University

Yasuo Konishi

Director, National Research Institute of Fire and Disaster

Yoshiteru Murosaki

Panel Discussion

Chair: Kentaro Serita

We would now like to begin the panel discussion. Following the presentations from Symposium II through which we investigated disaster management from various backgrounds and perspectives, we would now like to engage in a more holistic discussion that takes into account disaster management, community development, and the Hyogo Declaration, which was proclaimed at the UN World Conference on Disaster Reduction in 2005. Each panelist has been involved in disaster relief and the mitigation of both material and psychological damage since the onset of the Great Hanshin Awaji Earthquake, using their expertise and experiences for future planning as well.

In particular, Mr. Konishi and Mr. Murosaki have experience heading the Mr. Konishi and Murosaki were former directors of the Hyogo Forum for Advocating Individual Recovery. Mr. Adachi has extensive experience in international disaster management and recovery through his work with the Japan International Cooperation Agency (JICA).

Now we would like each participant to introduce themselves and make a few comments to start off the discussion. First is Professor Konishi of the Kobe University Research Institute for Economics & Business Administration, who was integral in organizing the Hyogo Forum for Advocating Individual Recovery. Through this he was deeply involved in bridging the gap between the government and the citizens. Please tell us about these experiences and some of the main problems you faced.

Konishi

Thank you. My name is Konishi. The Hyogo Forum for Advocating Individual Recovery was established

exactly half a year since the Great Earthquake on July 17th, 2005, incorporating several experts from different backgrounds and a Prefectural government staff, in order to act as an agent of recovery that connected disaster victims and government. We named the organization “The Hyogo Forum for Advocating Individual Recovery” because we wanted to bridge the gap between those who worked with supporting disaster victims and individual citizens and the government. The Forum was dissolved last March but I was its director for the first 40 months since its inception and Mr. Murosaki took over the role ever since. In the earlier stages of the Forum when I was director, the concepts and themes to be addressed and the response to them seemed to be quite clear and easier to make as it was not too long after the disaster.

The Hyogo Forum for Advocating Individual Recovery was meant to connect the government and disaster victims, but when comparing victims and groups that are involved in assisting them with the government, there were limitations to the level of analysis and information resources that private individuals and groups possessed. As such, the forum was balanced 6:4 or 7:3 in favor of private individuals and groups but with enough government representation so that I would become a productive session in which not only do the citizens voice concerns to the government but so that government can also direct and advise on safety and best-practice issues. In this way, I think we created a model for advocacy that has a very unique characteristic to it.

Also, the second defining characteristic of the Forum was “outreach”, in which we sought to directly listen to the voices and issues in the field and communicating with the government or disaster victims themselves for appropriate response. In this process, we have defined

our focus to be “disaster victims in general” as opposed to specific types of disaster victims. For example, if there was a project proposal for people living in temporary shelters under the name of disaster victim management and recovery, we refused as we did not want to limit the focus of our work. It is of course very hard to address the needs of all disaster victims, but we cannot execute a “recovery project” that benefits only one specific victim group. We did receive criticism from both sides regarding this stance, but we were able to maintain this position during our course of work.

Some of our ideas that have been realized include plans to make the living environment of temporary shelters better and a network for prefecture citizens to foster community development. These are things, I believe, that came forth from our propositions. We did not simply provide public help for the disaster victims, but we also encouraged self-help amongst the victims as the primary means of recovery and we discussed how we can create an environment in which this was possible. However, as we talked about today, there were many supporting groups and individuals such as NGOs and volunteers, but I could not help wonder if their work was really geared towards self-help and the future. Of course there rose notions of “cooperation” but there were also many initiatives which basically asked the victims to sit back and watch. Therefore, I learnt that it is most important to have a concrete objective or even if we go into the field to hear voices and concerns, the result may be a little skewed or ineffective.

Chair

Thank you very much. Now we would like to also hear about the activities during the latter stages of the Forum from Mr Murosaki. For a long time Mr. Murosaki approached victims who lost family members in the Great Earthquake to determine reason and how they lost their lives. The victims who passed

away cannot speak for themselves but through their family, we are able to discern the feelings and information about the deceased. It has been also mentioned that if houses are destroyed, there is nothing one can do, but please tell us what you felt and saw through your dialogue with the victims.

Murosaki

Three years since the Great Hanshin Awaji Earthquake, I initiated “Victims Interview Research” along with my seminar students. In the beginning, we had ambitions to the relatives of all the 6,400 people who lost their lives, but in actuality we could not complete even as much as a 1,000 interviews. The real number is around 350 people interviewed and this initiative has been halted almost as soon as I left for Tokyo. As such, I cannot claim that this initiative made a large result or impact and tell you that the initiative did not fully succeed.

However, the reason why we embarked on the initiative has much to do with the themes of today’s Symposium, that being the multiple characteristics and individuality of damages and loss from disasters. Two factors lead to this initiative. One was a symposium that was held just a year after the Great Earthquake with Mr. Kunio Yanagita (ex-NHK correspondent). At this time Mr. Yanagita told me the words of movie director Kitano (Beat) Takeshi who said that “in the Great Hanshin Awaji Earthquake, 5,000 people did not die at once – each person was killed on 5,000 occasions.” Mr. Yanagita only told me this, but I think he meant to tell me that I should keep in mind that 5,000 people died each in their own way. I was quite shocked and realized the importance of individuality in damages and loss. This was one factor.

The other factor was my work in the aftermath of the disaster in which I engaged in a variety of investigations including evacuation points, the

structural problems of the houses of victims, etc. In each instance, I always kept in mind to convene a meeting to report the results and to immediately direct the results of the investigations to the government for immediate attention and response rather than keeping the information in academic conferences and journals. In one such fairly large reporting meeting that took place at the Labor Center in Sannomiya, a citizen raised his hand and said, "We have made a lot of efforts and wrote down our thoughts but is the reply just 1% of 18%?" What he meant was, even though they expressed a lot of feelings and worked hard to contribute to the findings, their effort only shows up in the form of percentages. The participant was expressing that his feelings were not being expressed at all in such a way. This too was a shock to me. How emotionless are percentages? For example, those who suffocated were 80% of all disaster victims but what else can we understand from such a figure? We can gain some very general facts but this is not necessary good information. And thus, I thought that it is important for us to listen to the individual message of each victim and pass it on to the future. Through such experiences, it began to be clear to me that there are no same deaths and that each is unique.

When we first began the investigation, we were severely reprimanded by our colleagues, especially those who specialized in psychology. My friend told me that I was inhumane, even a criminal. How can you pry into people's pain and ask questions such as, "Why/how did your child die?" However, I still believed that, despite the pain felt by the relatives of the victim, the victim must have had wanted to pass on a message and we the survivors are responsible for picking up these messages. I felt that it was most important to carry on these messages and share it with others.

Also another factor is that my specialty is architecture. We decided to conduct the interviews with my students

but they often came back crying saying that they were yelled at and turned back by relatives who asked why they asked such questions. The students told me that they did not want to continue such a research but I replied that it was necessary for them to understand that people die from your specialization, that our creation puts people at risk. I wanted them to know what kind of buildings and design would kill people. Architecture students think about how to make designs but they almost never think about how their creations can become deadly weapons. This leads to the current problem with Aneha (architect accused of a massive cover-up that involved the construction of hundreds of tall buildings that largely ignored the most basic building codes) I would like the students to further study architecture only after they learn about this fact. The investigation must have been very hard on the students. I knew that part of the reason why the investigation stopped after I left for Tokyo was because the students did not want to continue with it. Even so, I felt that it was very important to carry on their work thus far so as to preserve and carry on the record of each victim.

Furthermore, the initiative was not an interrogation but a dialogue. In other words, this is the same as the recovery process in the disaster struck area – to nurture a relationship of dialogue as opposed to a detached relationship in which victims and outsiders are divided into inflexible roles of helpers and the helped. Likewise, the process of recording the experiences and lessons from the earthquake should not be a one-sided approach between the interviewer and interviewee but a cooperative relationship should be created for an effective, mutual dialogue.

For example, there was a family that lost their child as a result of the second floor of their family home collapsing on top of the ground floor. Just four years before the disaster, the family had renovated the house

in order to create a taller open space between the first and second floors. The father wondered if perhaps this was the reason that his home collapsed, leading to his child's death. Without hesitation, I immediately replied that this was probably the reason as renovating walls in such a way was dangerous. My confirmation may have been an additional blow to the father, but instead, he was relieved and said, "I appreciate you saying that for now I know for sure if it was my fault and I feel that things are now clearer". In another case, another family lost a child but I told the family that it was probably not the fault of the renovation as the geological characteristics of the land on which their house stood on was very weak and unstable with very little resistance to the earthquake, thus resulting to the collapse of their home. The family was also satisfied when they heard my views. As in this case, they asked many questions, and so did I. By having a two-way conversation, we were able to initiate a process in which we investigated the cause of their child's death along with the family, which I felt was very important.

In this way, we noticed many things as we went along and encountered many cases. For example, not a single case followed a similar pattern. In such places as Hokudan-cho in Awaji, the community members rushed to help each other, relaying information such as that of an elderly neighbor who seemed to be buried under the rubble. On the other hand, 70 few days after the earthquake, another elderly lady was found dead under some furniture and their neighbors were totally unaware that such a lady was living in the area – they claimed that had they known it, they would have helped. As such, there are both weak and strong links within communities and therefore it is very important how the community members interact with each other.

There is also a case that isn't a result of this research, but pro-golfer Tadao Furuichi said that when he was helping people in his area, Northern Noda, he heard so

many cries from all over the place and didn't know where to start rescuing, so he said, albeit jokingly, that he went first to help the good looking, young housewives and those with whom he was well acquainted. This shows us that human relationships made in ordinary times influence rescue actions during disasters and this could be a matter of life or death.

The second case was that each person has a history. Why and how did the person die? Why was that person living on Awaji Island? For example, some used to work in the Shimonoseki Shipyard, but when the shipyard closed after the war, there came looking for work in the Awaji Shipyard and lived there ever since. Considering the tough times in Japan's economy, people tried to find a place to live by moving to towns where there was work. It was during the period of mass employment and many people from Kyushu, Amami Ooshima Island, and Kagoshima came to live in the Hanshin-Awaji area and lost there lives there. One of the reasons is that many chose mass employment after junior high school. We can see not only problems of housing structure and ground but also social problems. So it is difficult to say what the real reason is. We were able to see the how each person was raised or what the hardships were after coming to Kobe. But we do not put those into statistics. We are trying to collect the data as it is and preserve it so that even after 100 years, people can read it and understand what happened during the Great Hanshin-Awaji Earthquake, beyond simple statistics.

The most important thing that I want to say is that the how-to of disaster management are useless. I was surprised at how many people died by hiding under the tables and desks. Many people tried to take shelter under the desks but depending on how the house was built or in case of an earthquake of magnitude 7, and when heavy columns fell on them, tables and desks split in two. But we are teaching people to hide under

desks or, to go downstairs to shut the fire off when the house shakes. But (in one case) a housewife died downstairs in the kitchen when she went to close the gas line. According to her husband's theory, she was sleeping next to him so it may be that she went downstairs to close off the gas line and at that moment, the second floor collapsed on top of the first floor, killing her. This means that our general knowledge is not useful during a disaster. We need individual or local knowledge instead. Some people were told to hide in the bamboo forest behind their houses and immediately did so, saving themselves. It has been said that the ground where bamboo shoots grow is stable and this knowledge, being passed down from prior generations, has saved lives. In other cases where the houses were built in a traditional way, the structures were stronger and although they were older, were less harmed but the houses built by Tokyo constructors were heavily damaged. This means that local knowledge is stronger than general knowledge, and when it is passed down correctly, helps save lives. In some cases the local knowledge could be wrong. In conclusion, I would like to say that the knowledge of local people should be used actively and local knowledge and local interactions on individual basis is very important.

Chair

These are very important matters and we can go on with this subject for hours. However, we will have to move on. In the program handed out, you can see that the director of Japan International Cooperation Agency (JICA) Mr. Chihiro Oishi is supposed to be one of the panelists today but after discussions held by JICA, they decided that if Professors Konishi and Murosaki were to come, they strongly wished for Mr. Itsu Adachi to join us. Exactly 10 years before the Kobe Earthquake, in 1985 there was an earthquake in Mexico City. At that time, many volunteers came from all over the world and various international organizations came as

well. In December 1995, the Asian Natural Disaster Reduction Conference and a government level conference were held in Kobe. Simultaneously there was an International Disaster Reduction Conference held on citizens' level. Mr. Ian Davis was asked to come to that. Besides that we have here today, from Mexico City one more person that is still active in that field. So they are all related. During the Mexico City Earthquake, the world was probably in a chaotic period. Neither Japan nor JICA had adequate know-how. We were criticized for going overseas to help instead of helping on a domestic level by going to Kobe, after the Great Earthquake. JICA has experience in other fields as well such as floods, volcanic eruptions so they were able to bring their knowledge to regions in need. Mr. Adachi has been in many countries in Asia and especially Pakistan so he knows first hand about the problems they face. Please explain to us what you have done and seen in these countries by giving us a brief introduction along with introducing yourself.

Adachi

Hello. My name is Itsu Adachi. Today, before this panel, I was able to hear the activities carried out by the UN and NGOs. Therefore I would like to give an explanation of what the Japanese government is doing and what I saw through my experience. First of all, I am sure many of you have heard of JICA. It is an independent administrative institution that works under the Ministry of Foreign Affairs. Its president is Sadako Ogata and we have a high name value overseas. Especially in the disaster reduction sector, JICA has offices to recruit emergency staff. When the self-defense troops from Japan go overseas to aid other countries, their interpreters are provided by JICA and if troop members need to buy things like underwear when abroad, JICA takes care of that too. The Japan Overseas Cooperation Volunteers (JOCV) is also active abroad and gets a lot of support when overseas and

they are also recruited by JICA. Especially in recent years, we are trying to have continuous recovery support and we are developing a series of projects because we want to start by sending emergency aid staff. One such instance is the earthquake that struck Bam in Iran, two years ago on December 26th, killing an estimated number of 30,000 people. On the very same date (December 26th) the year before last, the Tsunami in the Indian Ocean claimed the lives of 300,000 to 400,000 people. So last year, we were preparing ourselves for the 26th of December but this time, an earthquake occurred a little bit earlier on October 8th in Pakistan. A few hundred thousand people died in this disaster. In this kind of disaster, an emergency aid staff flies in first and the rescue team, along with firefighters and policemen, seek to rescue and save the lives of victims in the first 10 days or so. This is done only in the first 10 days or so because that is the time limit in saving lives. The emergency aid staff arrives within the first 48 hours from the disaster and in the 84 hours that follow, the percentage of lives saved fall extremely and so they automatically decide this time frame. The previous theme about individuality in disaster management leaves this as a problem but that is where the rescue team finishes. The medical team stays a maximum of 2 weeks. During these 2 weeks, people who were injured during the disaster are given medical attention and saved. But the real problem is that many people die from infective diseases, by catching colds, or by not being able to be treated for the sicknesses that they already had before the disaster. The support for these people is not actually given by the emergency aid staff. This is the same problem that NGOs that specialize in emergency aid have. Usually the NGOs stay for 2 weeks and 1 month at the longest but after that they all leave the site. Some NGOs that specialize in recovery support stay for longer but the support that they receive decreases drastically. We as JICA would like to support these kinds of difficulties continuously and are currently

working on how to help recovery in towns, fast recovery of communities, improvement of government capacity, and how to support the local residents in the cases of Iran, Pakistan, and the Tsunami.

What we can learn from these cases is that in developing countries, in contrast with industrialized countries like Japan, do not have the capacity to manage disasters. It doesn't exist in any part of the country. They have knowledge to live in that certain region but they don't have the hardware, money, knowledge nor the experience to protect themselves from disasters. They just have their experience from natural disasters. The word self-help, cooperation and public assistance is seen many times, but is there really such thing as self-help? I wonder how people who haven't had the chance to receive elementary education and don't have access to information can help themselves, independently create and strengthen the capacity of disaster management. How can they keep a plastic bottle filled with water to prepare for a disaster when they don't have water for everyday life? I think that poverty and how mature each country is, in relation to self-help or the weakness of each person during a disaster is a bigger and more immediate problem in developing countries compared to industrialized ones. In this case, the role of cooperation and public assistance become important but if the government doesn't have money or experience, and is not trusted by the residents, public assistance cannot have power. What kind of support can we give? What is our role in this situation? The NGOs and we are always asking ourselves these questions and have not yet found the answer.

What I feel now is that it is difficult to reach the citizens without the government or public authority giving space and providing information. If we want to rebuild a dike that has been damaged in a flood, that is a simple way to give aid, but the more we want to

approach the matter from the citizens' point of view, the longer it takes. In most cases, we have to cut off our support before the people are capable of protecting themselves or before the results of aid are visible. We have to think about how we can cooperate in long-term cases. What we have learned from this, is how to localize each aid, how to develop leaders, or local people who can become core resources, accessing to each community with support to individual capacity. Also to support weaker people and taking over what the public authority cannot do for a certain period of time. I would like to present these ways of support.

Chair

Thank you very much. Seeing that Mr. Murosaki said to Mr. Konishi, harsh things like "that's obviously normal" or "individualism is important but without generalizing it is impossible to save some lives, or many lives", I am sure that Mr. Konishi would like to say something but please kindly wait. Previously, Mr. Adachi pointed out that self-help is difficult and public help rather than helping together depends on the developing countries' political aspects or social management aspects, so it is important to understand how to localize the problems and how to develop the local people. And in terms of what Mr. Konishi just said about the partnership between the people of each prefecture, is what the Japanese government has done up until now, as for recovery from disaster, relevant to development aid? When infrastructure is centralized it is the hard approach, but Mr. Konishi is saying is the soft approach isn't it? Is it even possible to achieve this? Or, are you researching this as well? Or, actually you are doing many things in Asia but they all don't seem to be having great results so what is your opinion on that? I would like to start from this subject.

Adachi

I am not sure that I can boast that our project is going

well because that is for everyone to decide, but it is generally said that the aid given by the ODA, Japan is the hard approach and some point out that it may not bring positive benefits to the local residents. My understanding is that the hard approach, with aid from Japan is definitely reducing risk in disasters. For example, when the tsunami hit the Maldives, the capital island was not harmed. This is said to be because Japan's past aid in order to prevent high waves caused by cyclones and rising of water level due to global warming, by building dikes prevented a tsunami. Surely there are results such as these and if and when disasters occur, we need access roads to send support and without these the residents will be isolated. So I think there is a role for the hard approach as well.

But with that only, recovering or disaster management capacity cannot be obtained so we are cooperating to develop the soft approach as well. There are prerequisites though, and Japan's aid is not by just handing over money. We are an organization whose role is to cooperate through technology. Technology cooperation means to spread knowledge about Japan's experience using its resources. This means that Japanese need to have certain know-how. For example, in villages of developing countries, they don't have money; they haven't received basic education, nor technology cooperation. In this kind of situation, the problem is finding someone that can actually communicate how to develop a community based disaster management plan involving everyone in the village. We are now working in cooperation with CODE, in Sri Lanka. Also after the earthquake in Indonesia, we sent the CARE center (from Kobe, Hyogo) and they discussed what kind of cooperation was possible. In Teheran, Iran, we have Professor Takada from Kobe University cooperating to develop anti-seismic infrastructures. In each of the above cases, we see that Japanese resources help and we would furthermore, like to systematize it. It is very

hard to communicate without systematizing or generalizing the process. Basically, we will send or have someone come to explain, so we need to see how disaster management is discussed inside Japan and how it can become useful in becoming an aid for developing countries. So today's discussion about working together and partnership between the people from different prefectures is seen more in the developing countries. As the country itself is still weak, the people cannot depend on their countries but must take action on their own, thus making the ties among them stronger. In order to compensate for problems that cannot be solved by themselves, nor the government, NGOs are giving a hand. They run hospitals, send teachers to schools. Developing countries are more independent rather than developed countries. We actually have much to learn from them.

Chair

Thank you very much. Mr. Murosaki, what do you think?

Murosaki

Having heard the two opinions, I would like to talk by simplifying as much as possible. Firstly, in the prior presentation by Mr. Tuchiya of Musashino, we heard about prioritizing, in the order of self help, helping together then public help. In terms of participation and working together, I think that self help is the most important. The important thing is: this doesn't mean pushing the responsibility onto someone else, but recognizing that people need to develop the strength to protect themselves and to support those in doing so. Providing technology, knowledge and financial aid in order to help them help themselves and be independent. Self help cannot be obtained without one being independent and in aiding, the economic capacity of the region is also important so we need ideas in order to understand how each community can obtain that kind of economic capacity. We need ideas that will

support the everyday lives, then economic aid and finally to sustain economic independence. Reasoning under these terms, bringing temporary housing to Turkey may not be the only means of support and in some cases this may be the wrong kind of aid. It was said in Taiwan that as the country has wood resources, human resources such as carpenters so they were grateful for the temporary housing that was sent from Japan, but financial aid would have helped the region more. In conclusion, I would like to say that self help and independence are the most important things. Public help means to receive support from the public administration in order to sustain independence in the region. Public help is third but this doesn't mean that it is not necessary but by prioritizing self help, public help will be needed more and we need to further understand the relations between self help and public help.

About generalizing the lessons learned, it may be a contradiction to the comment about building too much temporary housing, but lessons learned from each disaster such as the Niigata earthquake and Hanshin earthquake differ. The disasters in Sri Lanka and Indonesia are also different from the ones in Japan. When analyzing a disaster, it is important to always keep the in mind, not to estimate the disaster by just looking at the numbers. Universal records cannot be obtained without analyzing the harm in relations with regional culture, economy, and political backgrounds. In any case, I feel that housing is the base for everything. Drastically speaking, the earthquake in Bam (Iran), the earthquake in Gujarat (India), and the recent Tsunami all had housing problems. It's all about how the houses are structured and built. In terms of housing structure, the latest technology is universal but how houses are built varies from region to region. In not all cases, the reinforced concrete of Japan can be applied but we must consider the regional culture. Housing is not just a container but a place to

live in and cultures exist so these must be passed down as well, not by just mechanically transporting new technology. Housing is important and it is a culture when considering disaster strategy as part of the community. Each culture varies from region to region. The idea of culture is based on regional diversity, the region's political background, and history. So under these circumstances, bringing Japanese technology, Japanese buildings and Japanese temporary housing is not always the answer. In Turkey, people keep their shoes on in the house. We must first understand the living cultures of the region before building temporary housing. After the Great Hanshin Earthquake, all temporary housing was planned to be either 6 tatami mat size or 4 tatami or a half size. We must reevaluate the regional differences as this is a case where it was not considered at all.

Chair

Thank you very much. As our time is limited, the speakers tend to speed up in order to finish on time, so please bare with us. I am wondering about something. For example, Mr. Adachi's statement about the bond between each citizen being strong because the country is weak. I agree with that. But the partnership between the people of different prefectures as Mr. Konishi stated, is something different. Each region has a culture and with that I agree, but what is regionalism and community? In the beginning when Mr. Murosaki said that it is the hearing and talking of each person, I was convinced but what about knowing where someone lives and saving lives because the neighbors know who lives where? The importance of that kind of community was just televised on NHK recently and that is what we discussed 10 years ago. The weakness of a country is based on the government being weak. The bond between the residents can be strong like in regional bonding or family bonding. This is a type of community, in urbanization, we don't know what the neighbors are doing, living in a

high-rise apartment building. What's good about apartment house living is the fact that you don't have to socialize with others if you don't feel like it is comfortable and this may be something that we have been looking for. But even under these circumstances, people have been helping each other. If we ask whether there was a bond between these people, they don't know and no one really discusses that. I would like to start a discussion about earthquakes that occur directly under a big city and its relation with big city advancing age society, in those days it was called advancing age society, although we are already in that era.

This region has a high maturity rate. In the report, we saw that women have many problems during a disaster and in some cases abused by men. In Kobe, as I was the head of department at Kobe University, at times I specifically said to some female students not to take certain routes. These problems do indeed exist. There are many problems. The community, the importance of regions and the importance of residents is widely understood but what is community? I would like to take this discussion a bit further. One of the characteristics of the Great Hanshin · Awaji Earthquake in comparison with the Great Kanto Earthquake, is the thorough initiatives taken by the region. This means that each region took the initiative rather than the Tokyo government. Of course there are problems in these initiatives but each region talked and listened to the residents of that area. I would like to bring the discussion to what Mr. Adachi said about using the hard approach to get into each community. I accompanied the governor of Hyogo to Phuket(Thailand) and Jakarta(Indonesia) for two symposiums. Governor Ido and chiefs from Hyogo prefecture went to give speeches and according to the mayor of Phuket, some problems are not heard from the central government and difficult to realize. They appealed that they didn't know what to do to be heard. He also asked the Hyogo governor that it would be

difficult to plan regional development without the local autonomy functioning well and this seems to be the case in the Ache Special Region. Of course there is an adjustment minister of state in Ache and he is hearing the local opinions and Governor Ido met with him and exchanged opinions on this region as well. As Mr. Adachi has been on this trip, he may have some observations.

Adachi

In developing countries, the most important issue is the local autonomy and they are trying to develop local decentralization by getting aid from the American and European donors or international organizations. Indonesia went too far in local decentralization and is now taking a step back. The actual situation of Indonesia is because they moved power to the local regions sending neither human resources nor financial resources thus leading to a downgrade in regional government standards. Other countries are taking the same approach as Indonesia. It takes time for the local governments to function and give adequate services. In terms of necessity, in the community, in order to support the residents, the role of the local autonomy is very important. The role of local autonomy is indeed to see it from a wide point of view because disaster management is something that affects the community as a whole, and could even be renamed public help or helping together. Recognizing the importance of local autonomy, in Thailand and Sri Lanka, when developing community based disaster management, they always take the approach in which involves the local people first.

Chair

Mr. Murosaki is commenting, taking into consideration the fire department and the public's eye. If you have any comments.

Murosaki

It is a very sensitive subject but also very important. Under the reformation of post war, disaster management was considered a problem of the local autonomy or the autonomy and welfare problem. Each town had an individual fire fighting system because the local autonomy each had power for their own fire fighting. Recently, as fires and disaster spread in greater areas, it is being said that it is better to centralize the systems and rebuild the fire fighting and police systems. The need to prepare for a wide spreading disasters and the fact that smaller towns are uniting to become bigger may be some reasons and this leads to the idea of protecting oneself and one's community from disasters including problems like terrorism. This will naturally lead to centralization so we need to think about this and how to deal with it. If I say that fire fighting in each region is up to that town's individual system, too strongly it would not be compatible with the country's views. But I feel that local autonomy means protecting oneself by oneself and how much one spends on protection is not something that should be ordered from a higher level. Each community must learn how to protect itself and spontaneously be able to do so by nurturing awareness in disaster management and that is why the local autonomy is important.

Chair

Thank you very much. How about you, Mr. Konishi?

Konishi

In terms of local autonomy, the word participation became involvement and now is called working together. These phrases are about local autonomies and not about country level issues. It means we should think that participating, involving and working together should be on a regional level. In Japan's case, the relation between local and central government was somewhat too tight. In England, compulsory education differs from region to region but there is a

relation between local and central government. So it cannot be unconditionally said about the relationship between region and central government. I am not sure in which direction Japan is headed. The word participation changed to involvement and then to working together but then at country level, the word participation was used again to select a leader in a political party. We may have to ask a political scholar.

Chair

I am international scholar and law specialist. I also wrote as an honorary editorial member for Kobe Newspaper. I think that international law and international politics are deeply related. I am not a domestic law specialist but I would like to try to speak about these problems from a different point of view. It may be a little off the subject of regions, but when dealing with disaster prevention, reducing disasters, and disaster management, one of country, regions and areas seems to be missing. Ancient rulers always thought about soil saving flood control. They may have spent more money on that rather than defense. One political party said that there is a need to create an organization for the prevention of disasters or a ministry of disaster prevention and currently there aren't any clear national policies. Of course we need clear fire fighting policies but we also need to raise awareness about a clear national policy for soil saving flood control. We may be able to see other issues starting from there. There is a NGO that deals with rivers in Hyogo prefecture. They discuss many issues by creating conferences between administrations. As they have experienced floods caused by typhoon number 23, they discuss soil saving flood control and

also landslides. Houses built in unsafe areas, after the earthquake, experienced landslides. The soil saving flood control was not considered enough although there were many issues including these stated above.

Another thing is, the preciousness of life is remembered only before and after January 17th. For example, when an elementary school girl was killed, they only spoke about sexual education and not about teaching how important life is. If politicians took up saving and protecting the lives of country and regions as part of a discussion, it would be easier to discuss soil saving flood control as a larger issue. If we are able to discuss this as a whole, all countries can be linked. Defense, when ideology differs, becomes an issue as each country tries to finger point at the enemy or not cooperate with the imaginary enemy, but as for soil saving flood control all countries are able to cooperate and it has nothing to do with ideology so residents from different countries can work together and bond. Commenting from an international law perspective, developing countries accept financial aid from other countries but many countries don't want others to actually come and see the situation. That is why we need to omit ideology and create dialog amongst the people. In this case, as Mr. Murosaki said earlier, it is important to understand individualism, each person is a whole and each and everyone has a different history. I have collected the comments stated earlier by taking it on from another perspective. Our discussion has come to an end. Thank you for your attention.

Presentation Session

“Earthquake and Schools”

Introduction

Kenji Okazaki, Professor
National Graduate Institute for Policy Studies (GRIPS)

Lessons from the Pakistan Earthquake: Damages of Schools

Masahiko Murata, Senior Expert
International Recovery Platform (IRP)

Earthquake Resistant Technology for School Retrofitting

Isao Mitani, Professor
Engineering Department Kobe University

Reducing Vulnerability of School Children to Earthquakes

Bishnu Pandey, Researcher
United Nations Centre for Regional Development (UNCRD)
Disaster Management Planning Hyogo Office

Earthquakes and Schools: Building Earthquake Safe Community through School

Kenji Okazaki

Professor, National Graduate Institute for Policy Studies (GRIPS)

More than a half of the deadly disasters in the past 30 years are earthquake disasters. There are a huge number of vulnerable vernacular housings, which are non-engineered, around the world. Most of the victims due to earthquakes are killed by their own houses. Most tragedies in disaster are attributed to loss of lives and shelter. Collapsed houses hinder evacuation, relief and firefighting activities. Financial burden of governments caused by destruction of houses is huge. Therefore, securing safety of vernacular housing/buildings should be the highest priority in earthquake disaster reduction, particularly in developing countries.

Retrofitting of vulnerable houses is the most effective and efficient way to secure their safety. Thanks to

the efforts of the experts, practical technologies for retrofitting of vernacular houses, mainly masonry, are available. Only 10-15% of the construction cost would be sufficient for retrofitting. Recently, Japanese governments enforced a new act to promote retrofitting, and are providing seismic diagnosis for free and subsidy to retrofitting.

It seems, however, house owners are hardly motivated to invest for retrofitting. The experts have been seeing difficulties in promoting retrofitting of vulnerable houses. Indeed, retrofitting is a difficult decision making at individual level.

In order to promote retrofitting, the following would be key issues to motivate house owners.

(1) Better understanding of individual risk

Education and awareness raising are essential

(2) Participatory decision making

Involvement of stakeholders at multidisciplinary basis

(3) Transfer of practical and affordable technology

Training of masons and engineers

Integrating these issues, the School Earthquake Safety Initiatives is a well planned project. This initiative was conceptualized and initiated by NSET Nepal in collaboration with United Nations Centre for Regional Development (UNCRD). The concept is to enhance coping capacity of communities through retrofitting of school buildings. By demonstrating the practical technology for retrofitting, it is transferred easily to the communities. Children are educated at schools for disaster mitigation and then transfer knowledge to families and communities. The safer school buildings will not only save the lives of children in case of earthquakes but also will function as a base for evacuation and emergency activities.

During the Kobe Earthquake in 1995, 85% of schools were damaged and 67 public schools and 40 private schools were severely damaged. Fortunately, there were no students attending at that time as it took place in early morning. Out of 240,000 evacuees (as

10 Major Disasters (fatalities) in the last 30 years

Nation	Disaster	Year	Death
China	Earthquake	1976	290,000
Colombia	Volcano	1985	21,000
Armenia	Earthquake	1988	25,000
Iran	Earthquake	1990	35,000
Bangladesh	Cyc/flood	1991	140,000
Venezuela	Flood	1999	30,000
India	Earthquake	2001	20,000
Iran	Earthquake	2003	27,000
Indonesia, others	Eq/tsunami	2004	over 300,000
Pakistan	Earthquake	2005	over 80,000

Figure 1. Major Disasters in the last 30 years

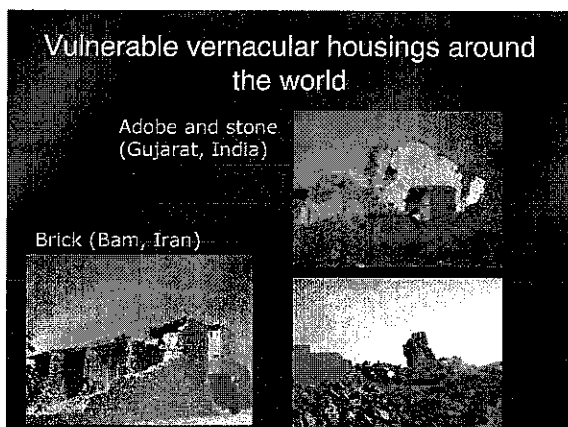


Photo1. Vulnerable Vernacular Housings Around the World

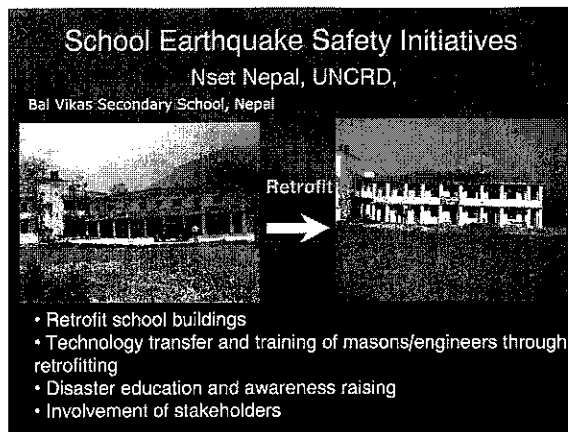


Photo2. Retrofitted School in Nepal

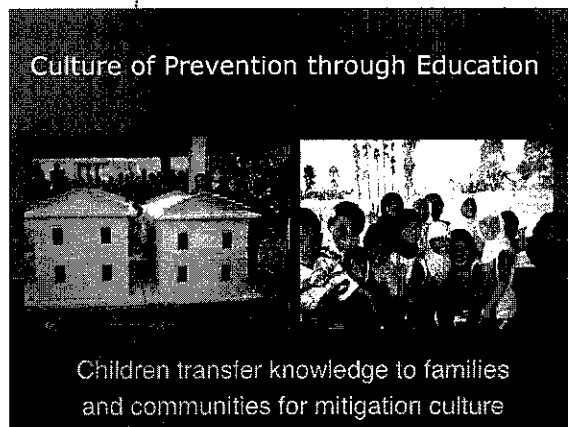


Photo3. Culture of Prevention through Education

My conclusion is;

- (1) School buildings must be safe against earthquakes
- (2) Disaster Education should be incorporated into curriculum
- (3) Community-based education centered at schools leads to disaster resilient communities
- (4) Schools can be used for an emergency evacuation but not for long term evacuation

of 24 Jan.), 60% were evacuated at more than 200 schools. The functions of the schools were to;

- Secure safety of children and help them
- Secure safety and daily life of evacuees
- Distribute relief goods
- Disseminate and collect individual and daily information
- Provide medical and health care
- Receive and coordinate relief and emergency activities (even as a mortuary)

While the schools played a very important role during the disaster, there were several problems as follows.

- Due to heavy damage to school buildings, resumption of education was prolonged.
- As the schools were used as the evacuation sites for long period, the students and teachers could not focus on education.
- Living condition of schools was poor without privacy

Lessons from the Pakistan Earthquake: Damages of Schools

Masahiko Murata, Senior Expoert
International Recovery Platform (IRP)

1. Introduction

This report based on the UN mission for needs assessment for early recovery from Pakistan Earthquake occurred in October 2005 focuses on the overview of the earthquake and damage of schools.

2. Overview

- Scale: Magnitude: 7.6
(Epicenter depth: 26km;USGS)
- Epicenter: 34.493N, 73.629E
(90 km NW from Islamabad)
- Date/Time: at 8:50 AM on October 8th, 2005
(12:50 at Japan time)

(Most children were at school and women were at home. Men were out in the field or at work.
More women and children lost their lives)

- Casualty: 73,331
- Injured: 128,288 (severely injured: 69,392)
(As of December 5th by Pakistan Government)
- Damaged building: 400,153
(Collapsed building 203,579)
- Major damaged area:
Northwestern frontier districts(5 Districts)
High mountainous area of Azad Kashmir (AJK; 3 Districts)

- Topographical features:

The mountainous area of northern Pakistan lies in the area of collision of the Eurasian plate and Indian tectonic plate moving by 40mm a year (USGS). This highest mountain chain is earthquake prone area. In the past, about 60,000 people were killed by Quetta Earthquake in March 1995. 2005 Pakistan earthquake was occurred by the active fault.

2. Damage on school

Out of 18,327 school in the area
(NWFP:12,379 AAJK:5,948)

8,000 schools (NWFP:6,700 AAJK:1,300) were collapsed. Because the earthquake was occurred during the school hour, more than 17,000 students and about 873 teachers were killed.

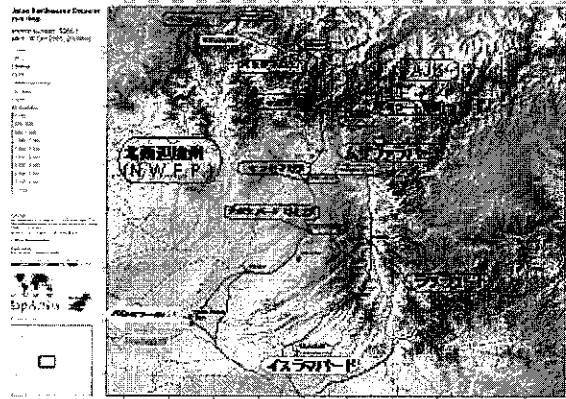


Figure 1: Map of Field Survey Areas



Photo1: Damaged Houses in the Mountain Area

3. Overview of UN mission

The most damaged area in Pakistan was North-West Frontier Province (NWFP) and Pakistani-controlled Azad Kashmir (AJK). 13 members of UN mission for needs assessment for early recovery conducted filed studies in these two areas for three days from October 24th to 27th (NWFP team).

The purpose of the field study was to understand the needs during the early recovery phase (after the relief phase to 9th to 12 month after the earthquake), and the targeted areas were housing (Habitat, UNDP), small scale infrastructure (UNDP), livelihood (ILO, UNDP), agriculture (FAO), governance (UNDP), education (UNICEF, UNESCO), health (WHO, UNICEF), environment (UNEP), risk mitigation (UNDP, ADRC) and finance.

The mission started with the interview with state

バラコート、バタグラムほかの家屋被害状況
House Damage in Balakot, Garhi Habibullah and Battagram Area

Area/ Location	Houses	Damaged(%)
Balakot City	Over 7,000	95
Balakot Valley	Over 35,000	70-90
Garhi Habibullah	Over 3,000	90
Dareul Panjul	Over 25,000	50-70
Dare e Konesh	Over 11,000	50-60
Battgram Valley	Over 12,000	50-60
Allai	Over 8,000	70-80

Source :UNDP Information note

Out of 101,000 households in the area 78,550 households have been estimated to have collapsed.

Table1: House Damage in Balakot

government official in the capital city Peshawar followed by field studies in Abbotabad, Mansehra, and the most damaged area, Barakot. On the third day, the team was moved to further north part of Battgram Valley and Besham. As shown in map, the most of damaged area were located in mountainous area at more than 1000 m elevation and the some parts are at 3000m to 5000m elevation. People now experience severe winter season.

4. The most damaged area, Barakot

In the downtown of Barakot with severe damage, most buildings were totally collapsed (collapsed ratio of housing is 95%) and only a few buildings were in original shape. The bridge was not collapsed, but the bridge beam was off to the side by 1 meter. A great number of trucks with relief aid come and go on such damaged bridges and it is concerned that the secondary disasters.

The field research was conducted at the site with collapsed school building with reinforced concrete. Since the search and rescue was finished and they were moving away the debris, we were not able to confirm how the buildings were collapsed. However, by observing the floor panel, reinforcing steel, and concrete, the cause of the collapse seems to be the strength of the buildings. Based on the hearing from local people, the collapsed school used to have 2 story building and 400 to 500 students were killed by the earthquakes.

5. Significant damages on public buildings
Compared to the damage in Barakot where most building were collapsed, Shangla district has less damages. The report released by the district government 3 weeks after the earthquakes shows that the damage on the building were vary depends on the building types. Based on the report, there was



Photo2: Damaged Area in Balakot



Photo3: Damaged Schools in Balakot
2nd Story Building, 400-500 people died

significant difference in damage between public building and private building as shown in the table.

As seen during the Great Hanshin-Awaji earthquake, public buildings such as school buildings becomes the center for various activities and are often used as evacuation center, emergency center or temporary shelter during the time of emergency. However, Pakistan Earthquake proved lacking in earthquake resistance in public buildings and it caused death of a great number of school children.

When school buildings are collapsed and school children are killed, it results that the community loses majority of promising young generation. Therefore, it is important not only to reconstruct school buildings with earthquake resistant technology in the damaged areas but also to retrofit of school buildings with earthquake resistant technology in everywhere.

シャングラDistrict政府により、被災状況の詳細レポートが地震3週間後にはすでにまとめられていた。(バシにて)



テシル別死傷者数

Tehsil	Area km2	Population			No. of Deaths	No. of Injured
		Total	Male	Female		
Alpuri	663	172,960	89,473	83,523	83	286
Besham	184	67,339	29,724	28,015	235	360
Chakisar	227	67,317	35,299	32,018	87	134
Martung	215	57,841	29,109	28,332		
Puran	297	79,106	40,179	38,927	18	109
Total	1,585	434,563	223,784	210,815	423	889

From: Initial Report of Eq. Damages District Shangla (District Gov. Shangla)

Table2 Damages in Shangla District

No	Institution type	Current Numbers	Physical Status (No.)			Fully intact
			Completely destroyed	Partially destroyed	Partially damaged/Reparable	
Education Related Buildings 学校						
1	Primary 小学校	270	123		147	
2	Middle 中学校	50	6		44	
3	High 高等学校	20	2		18	
5	Degree College	3	2		1	
<General Administration & Police Buildings>						
5	General Admn: Bldings	31	6		25	
6	Police Buildings	27	29		7	
<Private Enterprise & Financial Sector>						
1	Banks	7			5	2
5	Hotels	20			15	5
6	Shops	2000	200	500	1000	300
7	Tourism Sites/Infra	1			1	

Table 3: Damages of Public vs Private Buildings in Shangla

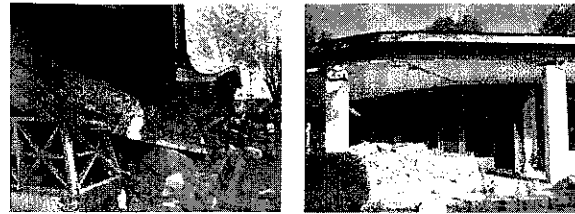


Photo4: Totally Damaged Buildings



Photo5: Battgram Valley

“Mule Convoy” near Barakot

Damaged area was extended to the rural area of Barakot. Because the affected people in rural area are scattered in high mountainous area, in addition to helilift, rescue teams use a group of mules to carry relief goods.



Research on Earthquake Resistant School Building

Isao Mitani

Professor, Kobe University Engineering Department

1. Introduction

It is desirable that all the general buildings maintain their normal functions under seismic excitations. Still more, hospitals, police stations, city (town) halls, and fire stations will be the bases of rescue activity, and particularly school buildings are positioned as evacuation shelters and bases of rescue activity. Therefore, the functions of these buildings should not be lost even if a great earthquake occurs. However these buildings have often suffered extensive damage during the past moderate earthquakes. School buildings are academe for children, and then we must avoid the circumstances that they can't learn at school for a long period because of repairing and reconstruction of building. In this paper, the survey of damage from earthquake and seismic design of the past, quake resistance of school buildings in Hyogo prefecture, and research on seismic retrofitting at Kobe University is described.

Table1. Earthquake and seismic design

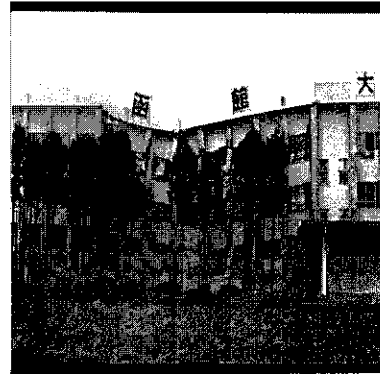
- Kan-to EQ (1923) : effectiveness of seismic shear wall
- Tokachioki EQ (1968) : shear collapse of column, storey failure
- Increase shear strength of column (1971)
Revice of AIJ RC Standard
- Miyagikennoki EQ (1978) : collapse of block walls
- Seismic design cord improved considering strength and ductility (1981)
- Hyogo-ken Nanbu EQ (1995) : effectiveness of new seismic design cord
- retrofitting for existing buildings of inadaptable seismic performance

Table1: Earthquake and Seismic Design

2. Earthquake, Seismic Design, and Seismic Retrofitting

Some past moderate earthquakes have caused unexpected damage, and the seismic design code has been revised, regarding the damage as a lesson. Fig. 1(a) shows the view of collapse of a school building, which has fallen down completely at the first storey during the Tokachioki Earthquake (1968). From the lesson of this collapse, shear design regulation had been revised in order to increase shear strength and ductility

of the column, and a seismic design code improved considering strength and ductility in 1981. Fig.1 (b) shows collapse of block walls during the Miyagikennoki Earthquake (1978). As well as preventing collapse of school building and fall of floor, we need some measures to prevent fall of block walls, which stand along the roads to school or evacuation shelters. The code of construction of block wall has revised.



(a) Hakodate University



(b) Damaged wall



写真-40. せん断補強のない柱・梁接合部の被害

(c) Honjo Elementary School

Figure 1: Damages from Earthquakes

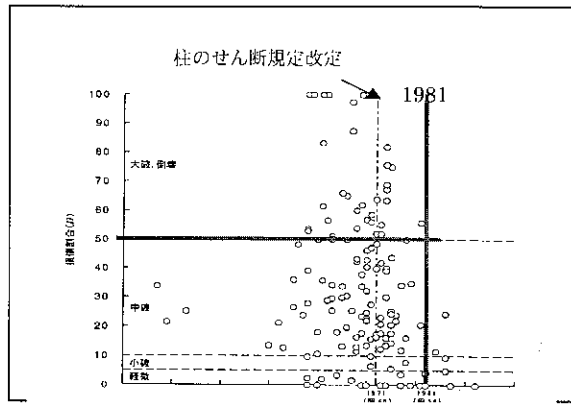


Figure2: Seismic Damage and the Period of Construction

Fig.2 shows the relationship between the seismic damage and the period of construction. It shows that very few buildings have been badly damaged after 1981.

3. Seismic Strengthening Scheme and Its Practical Examples

As a seismic strengthening scheme, there are a brace retrofitting, increasing shear walls, and jacketing by steel or carbon fiber focused on shear strengthening of the column (See Fig. 3), and the suitable method is determined in consideration of cost, construction schedule, noise, and condition of lighting. For the retrofitting of school buildings, construction schedule (the vacation months) and noise are the main elements to be considered; to prevent school activity from being interfered. In a case that lighting and construction schedule may not be considered, increasing of seismic shear walls is reasonable for the cost. But when lighting and schedule should be considered, brace retrofitting with steel frame would be adopted. In this brace retrofitting technique, it is possible to make steel frame in the factory, and to make good lighting condition also.

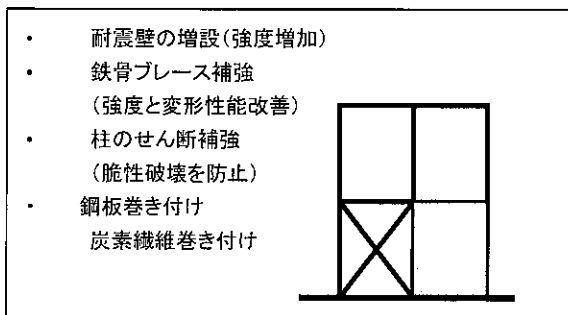


Figure3: Major Earthquake Resistant Technologies

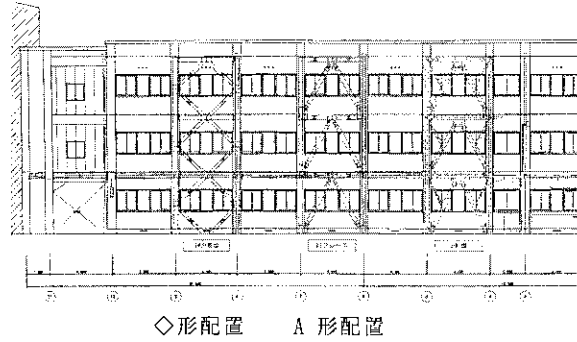


Figure 4: 3 Design Examples



Figure5: Examples

Fig.4 shows the example of external brace retrofitting with steel frame, and the arrangement of the brace is and A type. Fig.5 shows the practical example of external seismic retrofitting with steel tube brace.

4. Seismic safety and seismic retrofitting plan of school buildings in Hyogo-prefecture.

In the case of the regular existing buildings without eccentricity, seismic capacity of buildings is evaluated by product of strength index(C) and ductility index(F), and it is evaluated by basic seismic capacity index Eo, defined as (See Fig. 6)

$$E_0 = C \times F \text{ —————(1)}$$

Where, $C = Q_u/W$, Q_u : Storey horizontal strength of structure, W : Weight of all upper storey

In current seismic design, horizontal resistance of the storey (Q_{un}) is required to the regular buildings without eccentricity, as follow.

$$Q_{un} = D_s \times Q_{ud} \text{ —————(2)}$$

where, Q_{ud} : shearing strength in elastic, Orange, D_s : modulus of structural properties

Therefore, both formula (1) and (2) have same standpoint as for seismic design because of regarding

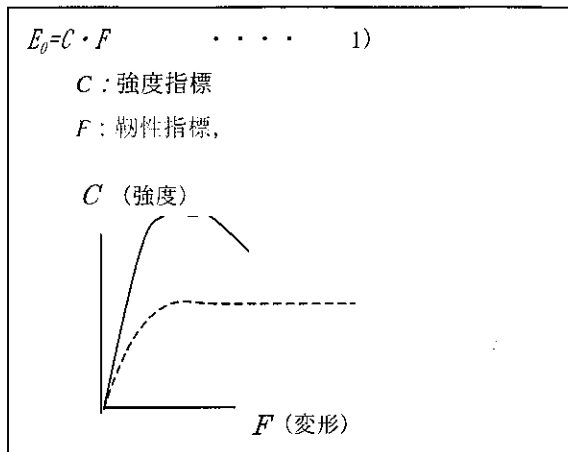


Figure 6: Concepts

strength and ductility. Fig. 7 shows the result of evaluation of seismic capacity (1998~1999) in Hyogo prefecture. As for general constructions, they are evaluated to have enough seismic safety with above 0.6 in I_s value, while seismic safety for school buildings is planned to make I_s above 0.7. Fig. 8 shows the present condition of seismic safety and seismic retrofit plan of school buildings in Kobe city (reference 6). 40 percent of buildings have been made to have enough seismic safety in present (Apr.2006), and 100 percent of ones having poor seismic safety will be upgraded seismic capacity until 2014.

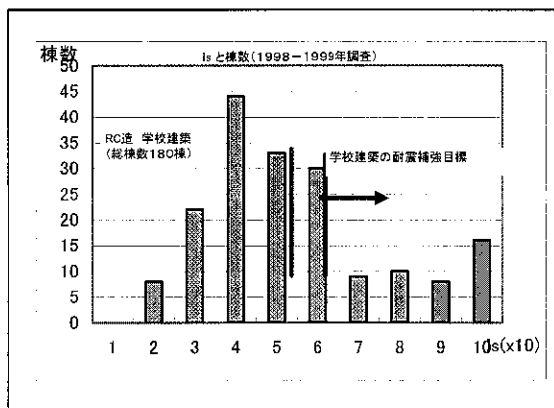


Figure 7: Earthquake Resistancy of School Buildings

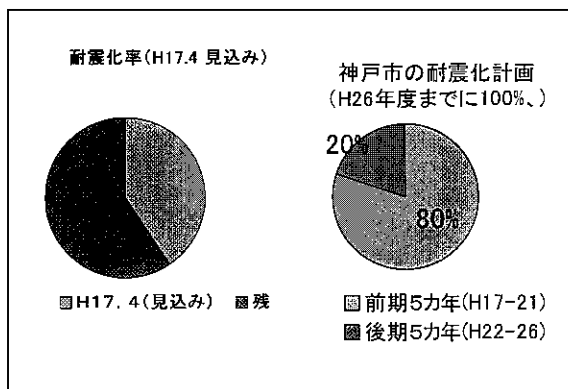


Figure 8: Current Situation and Future Plan (Kobe City)

5. Research and Development on Retrofit of RC Building at Kobe University¹⁾

An experiment to check the effect of seismic retrofitting by external brace retrofitting with steel frame was carried out. The types of brace attached to the testing frame are A, and B. Fig. 9 shows the loading system, and test specimen is 1 storey and 1 span. After applying a constant vertical load, which is long-term axial force for normal four storey school building (= 0.2 bDFc, b : column width, D : column depth, Fc : concrete Strength), applied horizontal loading are given by the jack number 2 in the Fig.9. Steel frame and RC frame are connected indirectly. The anchor bolts are installed in the RC frame and headed studs are welded to the steel frame. By filling mortar between RC frame and steel frame, brace element with steel frame and RC frame become unified. The indirect connection is set to have enough strength against yielding of the brace.

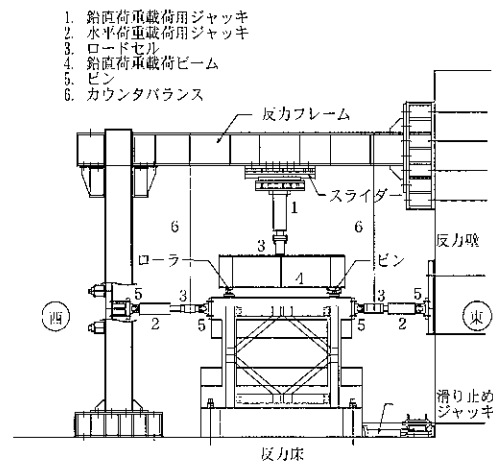


Figure 9: Pressure Machine

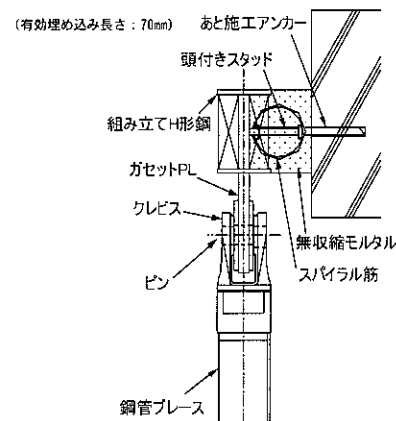


Figure 10: Details

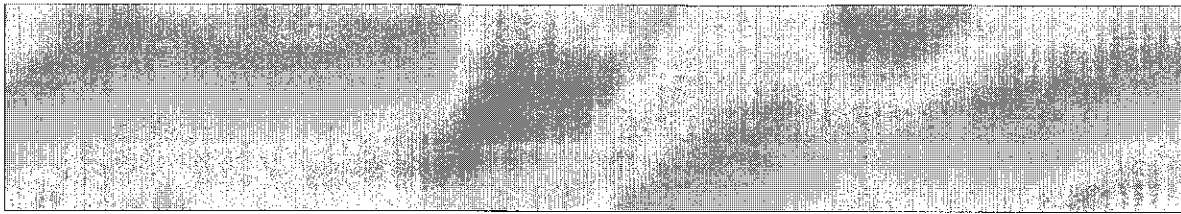


Table2: Conditions

example of the experimental result. (a) in the table 2 is the specimen without retrofitting, (b) is the case of double circular steel tube bracing arranged as A type, which both ends have pins. (c) is the H-section steel bracing case arranged as \square type, and connected rigidly with steel frame. The horizontal strength of three RC specimen is almost same with one another. Comparing the data of (a), (b), and (c), it proves that the resistance of strengthen frame is about 200kN more than that of the test specimen without strengthening, and the case (c) has more energy-absorbing capacity than the pin brace of both ends shown in Fig. 10(b). And also, while in case of the specimen without retrofitting, the strength decrease occurred with the smaller deformation than $R=0.005\text{rad}$, specimen (b), (c) retrofitted by braces, its ultimate strength is not decrease even with $R=0.015\text{rad}$.

Reference

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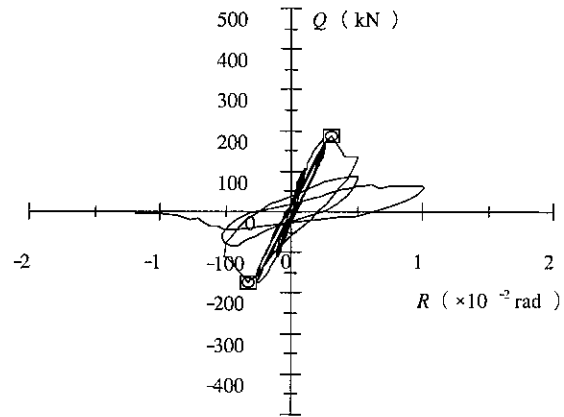


Figure 11(a) No.9(B)

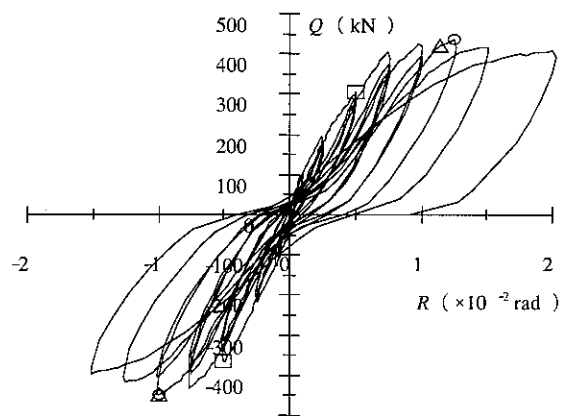


Figure 11(b) No.12(O-DA)

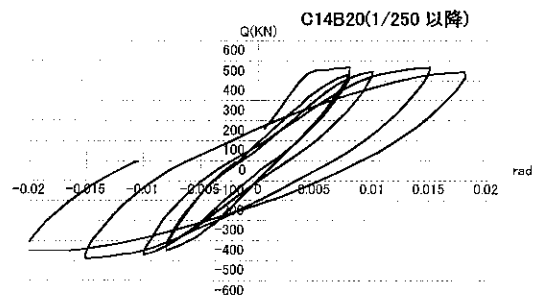


Figure 11(c)

Figure11(a)-(c). Test Results

Keeping Schools Safe from Earthquakes

Bishnu Pandey, (Ayako Fujieda)

Researcher, United Nations Centre for Regional Development Hyogo Office

1. Introduction

Earthquake-threatened communities need earthquake-resistant schools to protect their children and teachers. A survey found that approximately 30 per cent of the population in developing countries falls in the age group of six to eighteen years¹. Earthquake safe schools can save the valuable lives of these children and provide safe havens for community people. Past experiences shows that school buildings serve as temporary shelters during earthquake emergencies where school teachers and students help communities as volunteers those in need. Schools are found as a means to provide a sense of normalcy in a society in the aftermath of disasters.

Considering the high vulnerability of schools to earthquakes in Asia Pacific a research project is being conducted in Asia-Pacific region by United Nations Centre for Regional Development (UNCRD) with a focus on developing and transferring earthquake-resistant technology to school buildings and promoting education related to earthquake disasters. It is observed that the process of making safer schools can be used as an entry points to the communities at risk to facilitate implementation of a training and capacity -building programe for earthquake disaster mitigation technology besides its primary objective of ensuring the safety of school children against future earthquakes. It is achieved by demonstrating how schools can be used as community centres for earthquake disaster prevention and mitigation. This includes physical retrofitting of some selected schools in communities, training of the local communities and technicians, and dissemination of technical materials on earthquake disasters. Locally applicable and affordable earthquake-safer construction technology is transferred to these communities.

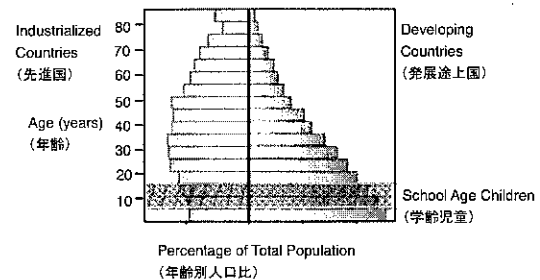


Figure 1: Population Distribution

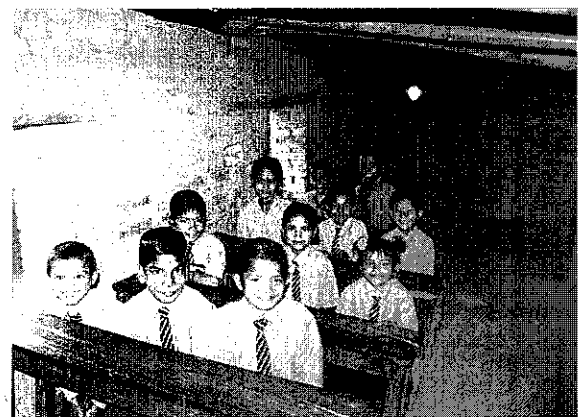


Photo1: School Childrens in Nepal

2. Earthquakes and Schools

Earthquakes are the most lethal among natural disasters, inflicting huge losses on life and property and damaging the affected area's economy, social organization, and cultural heritage. Poorly constructed buildings, low levels of awareness in the community, and poor disaster preparedness of the responsible agencies aggravate vulnerability to the devastation caused by earthquakes. The risk in developing countries is steadily growing, due to rapid urbanization and migration from the rural to urban areas. Earthquakes cannot be predicted, and therefore the effective way to reduce the earthquake risk is through preparedness and mitigation. Disaster mitigation and preparedness in developing countries continue to be severely constrained by insufficient training, awareness, education, and self-reliance within communities.

Like other infrastructures, school buildings are subject to damage and collapse in earthquakes. An

unsafe school in seismic region incurs loss of hundreds of school children's lives in addition to the potential damage to the property whereas a safer school can save valuable lives of children, provides a safe haven for community people, serve as temporary shelters and help bring normalcy into a society in case of disasters. In addition, the process of making schools safe against earthquake propagates the seismic safety message to communities². Initiatives of making schools safer against earthquakes not only protect school children, but educates communities to protect themselves.

These schools can be used as relief and rehabilitation shelters after earthquakes. Moreover, the strong leadership of teachers has proven to be very effective in dealing with emergency situations in disaster-prone countries. Schools play a crucial role in community training and building social capital among various community groups.

3. Safety of School Children

A recent survey found that approximately 30 per cent of the population in developing countries falls in the age group of six to eighteen years. In the case when earthquakes occur in daytime, lives of large number of pupils will be at stake as collapse of school buildings cause deaths and severe injury to them as has been observed in recent earthquake in Kashmir, Pakistan. The safety of children, who are the most vulnerable group in society, need to be looked at also from the concept of human security. The concept of human security is best defined as removal or reduction of vulnerability to economic, environmental, cultural, social, and political risks, including natural disasters such as earthquakes³. The loss of school students of

the age group of 6-16 may create a situation of losing an entire generation in that particular society. Earthquake-threatened communities need earthquake-resistant schools to protect their children.

Any initiative which targets the earthquake safety of school children will also help create a sustainable culture of prevention and mitigation in the community. Moreover, by raising awareness among children, the message can reach their families, and a culture of mitigation can be spread through the community. An appropriately educated and prepared community is better able to cope with natural disasters and is thereby more disaster resilient.

4. UNCRD Initiatives for School Earthquake Safety

The UNCRD has focused to protect the critical community infrastructure like schools and hospital from disasters. The School Earthquake Safety Initiative (SESI) of UNCRD focused on community resiliency to disasters through self help, cooperation and education along with seismic strengthening of school buildings in India, Indonesia, Nepal and other countries of Asia during 2001-2004⁴. Collaboration between Hyogo Prefecture, Japan and UNCRD for Hyogo-Gujarat Friendship Fund (HGFF) and Hyogo Kerman

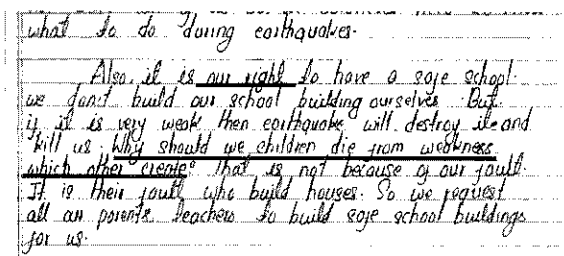


Photo2: Message from Sony Maharjan, a girl from Nepal
 © UNESCO, 2003)



Photo3: School Earthquake Safety Initiatives
 Before and After Retrofitting

Friendship Fund (HKFF) also aimed to educate communities on disaster prevention through the program of school earthquake rehabilitation in the aftermath of the Gujarat earthquake in 2001 and Bam earthquake in 2003 in India and Iran respectively.

Looking at the effectiveness of these programs and acknowledging the need for a greater campaign for school safety at the regional level, UNCRD has started another regional project called "Reducing Vulnerability of School Children to Earthquakes" in Asia-Pacific region in 2005. The project aims to make schools safe against earthquakes and build disaster-resilient communities. It includes retrofitting of school buildings in a participatory way with the involvement of local communities, local governments, and resource institutions, trainings on safer construction practices to technicians, disaster education in school and communities. These activities are carried out in India, Indonesia, Fiji Islands and Uzbekistan as demonstration cases which will be disseminated throughout the respective geographical regions through regional and international workshops.

5. UNCRD Project

Reducing Vulnerability of School Children to Earthquakes

The UNCRD current project focuses on (1) developing and transferring earthquake-protective technology to school buildings, (2) promoting education related to earthquake disasters. The first is physical and concerned with transferring earthquake-safer construction technology to the community, while the second provides education to students, teachers, and communities on disaster preparedness in order to raise awareness and self-reliant capacities. An additional purpose of the project will be to ensure that the outputs of the project will also be made available to other countries that experience similar natural disasters.

The project will facilitate the on-site implementation of a training and capacity-building programme for earthquake disaster mitigation, will ensure the safety of school children, will reduce damage caused by earthquakes, and thus will lead to safe communities. Figure 1 shows the interrelationship of the project components.

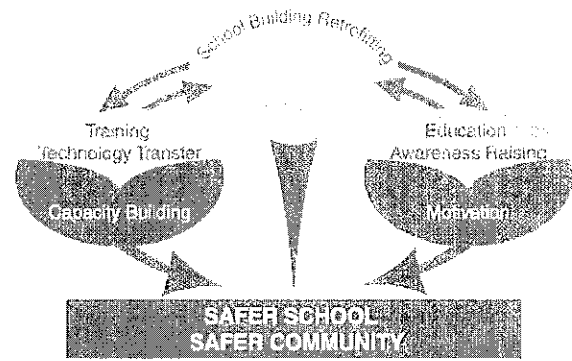


Figure 2: Concept of the Project

5.1 Demonstration retrofitting of school buildings

The projects includes seismic vulnerability analysis of about 10 selected schools in a project city of each country and retrofitting of some of them which cover prominent construction typology in the region. This leads to development of country specific guidelines on the earthquake safe construction which incorporates solutions to the practical problems experienced during school retrofitting.



Photo2: School Retrofitting in Uzbekistan

5.2 Capacity building of communities

Retrofitting of schools in communities serves as a demonstration of proper earthquake technology to them. Masons in the communities get on-job training during the retrofitting of schools. In addition, technicians in each project cities get trainings on earthquake design and construction of houses. Consideration is given to the local practice, material availability, indigenous knowledge and affordability in trainings on earthquake technology.

5.3 Education, awareness and dissemination

The project includes development and wide



Photo 5: Disaster Education Class

distribution of educational booklets, posters and guidebook on teachers training and students' drills for earthquake disaster preparedness and response. The guidebooks get verification and updated through trainings and mock drills. The projects also develops an interactive educational tool for awareness raising on earthquake disaster and simple seismic risk assessment of buildings aiming to motivate households for planning seismic upgrading of their houses.

Regional and international workshops on school seismic safety aim to disseminate the success and lessons of project cities to a wider region. It is expected that distribution of guidelines on safe construction, training manual of technicians and education and awareness booklets help to generate a sustainable demand on seismic safety of schools and buildings. Educational interactive software on general awareness and risk assessment at household levels get published in six UN languages for their wide distribution.



Figure 3: Project Component

Conclusion

As schools which house our children often serve multiple purposes in a community, their vulnerability to earthquakes implies risk of entire community. The vulnerability reduction of schools and their students hence must not be seen only in terms of the structural safety of school buildings but its spill over effect to impact entire community towards sustainable disaster reduction. Initiative to keep school children safe from earthquakes can be framed so as to contribute towards enhanced human security and effective earthquake risk reduction. Community based approach of school safety program leads to appropriate technology transfer and capacity building and motivation of individuals and communities leading to culture of prevention.

It is learned from the experience of UNCRD that the process of making safer schools can be used as an entry points to the communities at risk to facilitate implementation of a training and capacity-building program for earthquake disaster mitigation technology besides its prime objective of ensuring the safety of school children against future earthquakes. It is achieved by demonstrating how schools can be used as community centers for earthquake disaster prevention and mitigation. Locally applicable and affordable earthquake-safer construction technology is transferred to these communities.

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Panel Discussion

New Strategies for Disaster Education

Introduction

Shoichi Ando, Coordinator,
United Nations Centre for Regional Development (UNCRD)
Disaster Management Planning Hyogo Office

Perspective and Future Plan of Disaster Education at Schools

Yoshio Toda, Senior Officer,
Ministry of Education, Culture, Sports, Science and Technology (MEXT)
Sports and Youth Division

Expansion of Disaster Mitigation Education

Seiji Suwa, Director,
Maiko High School, Environment and Disaster Mitigation Course

Disaster Education in Developing Countries

Rajib Shaw, Associate Professor
Graduate School of Global Environment Studies, Kyoto University

Panel Discussion Dialogue

New Strategy for Disaster Education

Shoichi Ando

Coordinator, United Nations Centre for Regional Development, DMP Hyogo Office

Number of approaches on disaster education has been examined up to the present. A national movement of school teaching appeared in Japan especially after the Great Hanshin-Awaji Earthquake, and a new course specialized in disaster prevention, such as Maiko High School of Hyogo Prefecture, was established. In addition, media and society in general have increasing concern to the disaster mitigation owing to ten-year memory of the Great Earthquake and the 2005 World Conference on Disaster Reduction as well as the Niigata Chuetsu Earthquake and earthquake damage estimations by the Japanese national government. Internationally, because of the big tsunami of Indian Ocean caused by the Sumatra Offshore Earthquake, the Hurricane Katrina, and the Pakistan Earthquake, even European people who had not so much interest in disaster mitigation became increasingly concerned with disasters.

Hyogo Framework for Action 2005-2015: Building resilience of nations and communities to disasters

(HFA)” adopted at the World Conference on Disaster Reduction (January 2005) demands for inclusion of disaster risk reduction knowledge in relevant school curricula at all levels and the use of other formal and informal channels to reach youth and children with information (*Hyogo Framework for Action, Priorities for Action: 18h, i and j*). It also gives priority in promoting the implementation of local risk assessment and disaster preparedness programs in schools and in implementation of programs and activities in schools for learning how to minimize the effects of hazards. While school students are already overloaded in their curriculum with number of emerging issues, the agenda of disaster risk reduction, now, comes to their desk as must-to-understand subject. As the theme of disaster risk reduction has multitude dimension and the goal of implementing culture of prevention into the minds of children may not be achievable by simply text book reading, scoping the content of it and teaching approach needs to be

Hyogo Framework for Actions

B. 優先行動

3. すべてのレベルにおいて安全で災害に強い文化を構築するために、知識、技術確信、教育を利用する。

18. 人々に十分な情報が伝達され、災害予防や災害に強い文化を構築することに意欲である場合、災害は大幅に軽減できる。そのためには、ハザード、脆弱性及び能力についての関連知識や情報を収集・編集し、それを普及させることが必要である。

主な行動

(ii) 教育とトレーニング

h. 全てのレベルにおける学校カリキュラムの関連する部分に、災害リスク軽減に関する知識を含め、また青少年や子供たちに情報が到達し、災害リスクの軽減を「国連持続可能な開発のための教育の10年(2005-2015)」の本質的な要因として統合するために、他の公式、非公式ルートの利用を促進する。

i. 学校や高等教育機関で、地方リスク評価および災害への備えのためのプログラムの実施を促進する。

j. ハザードの影響を最小限に抑える方法を学習するため、学校におけるプログラムおよび活動の実施を促進する。

(<http://www.bousai.go.jp/wcdr/>)

discussed.

On such occasion, UNCRD tries to find the answer on how much result has been gained with the disaster education so far, what are the problems and limits of the current disaster education, and what direction should be selected in the future, through a panel discussion with experts who are striving actively in the fields of disaster education. Moreover, the panelists are expected to have question and answer time with the floor, in addition to the discussion among the panelists. The panel discussion in this symposium aims to exchange expert's opinion on this issue and contribute to formulate appropriate strategy and approach for inclusion of disaster risk reduction in school education system. The panelists are expected to streamline their opinions based on their expertise and experience.

Prior to this panel discussion, each panelist has prepared an answer to the following three questions. The following introductory presentation has been prepared based on the answer of these questions. The answers that were presented beforehand are introduced in the latter pages of this discussion.

Question 1: What are the most appropriate themes of disaster risk knowledge?

How far can we go beyond basic science of disaster and simple information of emergency procedure that are currently covered in school education in some countries? How can we specify particular content to specific levels: primary, secondary and high school?

Question 2: What sort of strategy is appropriate to include these contents in school education?

Does disaster risk management be taught separately in schools or should it be integrated in existing subject books of natural science, health, social science? How can we implement activities for learning how to minimize the effects of disasters in schools as HFA demands?

Question 3: How can we evaluate the effectiveness of such measures in light of

lessons from recent past earthquakes of Sumatera and Pakistan?

Does implementation of this strategy help significantly reduce the loss of lives and property in similar earthquakes in future? Can we come up with some quantification?

Perspective and Future Plan of Disaster Education at Schools

Yoshio Toda

Sports and Youth Division, MEXT

I. Introduction

The Kobe earthquake occurred in the early morning of January 17th, 1995 claimed more than 6,000 people including over three hundred of school children. Although the earthquake occurred before the schools started on that day, soon after the earthquake, schools began to function as temporary shelters in damaged areas. Dedicated work of teachers and their leadership were also remarkable. They played essential roles in the rehabilitation process. Again, I would like to show my appreciation to all the teachers and others who have made continuous effort till today.

This devastating earthquake presented with new challenges in disaster management system of our country, role of schools in emergency situation, disaster management schemes of schools and school board, safety of schools buildings, and disaster education.

Ministry of Education, Culture, Sports, Science and Technology (MEXT) established a council to conduct survey research on degree of disaster management schemes of schools and released two reports "enhancement of disaster management schemes of schools", one on November 27, 1995 and the other one on September 2, 1996.

The content included collective information on current condition and issues, fundamental idea to enhance disaster management schemes of schools and its implementation methods.

Specially, the second report indicated 1. framework to promote disaster education, 2. nature of disaster related education at schools, 3. perspective in enhancing emergency drills, 4. provision for improvement in leadership of teachers in disaster related education and their response capability in emergency, and 5. detailed steps to implement disaster education program in schools as the guideline.

implemented following measures.

1. National workshop on disaster education and mental care in disasters (started in 1996 and ongoing) has changed the title and became independent administrative agency (IAA) teachers training center
2. Prefectural workshop on disaster education and mental care in disasters (1996 – 2000)
3. Production and distribution of educational movie (distributed to prefectural audio-visual film library)
 - (1) "Earthquake! What do you do?" for elementary students (1995)
 - (2) "Earthquake! What can you do?" for middle and high school students (1996)
 - (3) "Lolo and Momo's story of earthquake and fire" for kindergartner (1997)
4. Creation of teacher's manual for disaster education and mental care in disasters
 - (1) "Development in disaster education to create 'a zest for life'" (1997)
 - (2) "For mental care in disasters" (1997, revised in 2003)

These have been distributed to all public and private elementary, middle and high schools including schools for the blind, the deaf, and the disables.
5. Creation of disaster education material
 - (1) "Think about disaster management" for high school students (1997, about 40 copies to every school)
 - (2) "Protect the precious lives" for middle school students (1998, about 40 copies to every school)
 - (3) "One precious life" for 4th to 6th grade elementary school students (1999, one copy to every school)
 - (4) "Protect one precious life and safety" for 1st to 3rd grade elementary school students (2000, one copy to every school)
6. Implementation of regional program for promotion of disaster education
 - (1) Implementation of regional program for promotion of disaster education (1996 and 1997, 7 areas)
 - (2) Incorporation with regional program for promotion of health education (1998 to 2000, 5 areas, 2001 – 2003, 3 areas)
 - (3) Incorporation with community based program for promotion of school safety (2004 and 2005, 5 areas)

II. Goal and objectives of disaster education at schools

1. Goals of disaster education at schools

Disaster education (teaching disaster safety) is considered as a part of safety education. The goal is to build qualities and abilities of school children to take initiatives responding to disasters. Firstly, the disaster education is to build children's awareness of dangers of disasters, to promote preparedness and to develop response their capabilities to secure own safety in a time of disasters. Secondly, it is to develop positive attitudes to cope with others and to take initiatives for safety in the community during and after disasters. Thirdly, disaster education also promotes better understanding of nature of natural disasters, local natural environment and other basic knowledge of disasters and disaster management.

2. Objectives of disaster education at schools

- (1) To build children's awareness of dangers of disasters, to promote preparedness and to develop response their capabilities to secure own safety in a time of disasters.
- (2) To develop positive attitudes to cope with others and to take initiatives for safety in the community during and after disasters.
- (3) To promote better understandings of nature of natural disasters, local natural environment and other basic knowledge of disasters and disaster management.

3. Highlights of disaster education at schools

Each level of school needs to prepare plans according to children's stage of development and the local circumstances and to teach school children according to the plan. Following is highlights of disaster education according to schools.

(1) Preschool

In preschools, teachers promote children's understandings of safety in various occasions and teach them to follow instructions of adults nearby such as their teachers and parents in a time of disasters and to inform adults in case they find emergency situation such as fire.

(2) Elementary school

- a) 1st and 2nd grade students must be able to follow the instructions of adults nearby such as their teachers and their

parents in a time of disasters.

- b) 3rd and 4th grade students must know the various possible dangers in a time of disasters and take actions to secure own safety.
- c) 5th and 6th grade students must know the various possible dangers around themselves and take actions to secure own safety as well as others.

(3) Middle school

Middle school students deepen their understandings of disasters including leaning about first aid, preparedness and safe evacuation as well as importance of voluntary activities of schools and communities for disaster preparedness and in time of disasters..

(4) High school

In addition to own safety, students contribute to safety of their friends, family, and community. They develop positive attitudes to contribute safety of people in community and learn first aid techniques to involve in voluntary activities of the community for disaster preparedness and in a time of disaster.

(5) School for the blind, the deaf, and the disables

Referring the highlights for preschool, elementary, middle and high school, each school must set objectives according to level of their disability, children's stage of development, their characteristics and local circum stances.

III. Area and structure of disaster management system of school

Disaster education (teaching disaster safety) is considered as a part of safety education and is positioned according to the area and structure of safety education as shown following figure.

学校防災 : school disaster management

防災教育 : disaster education

防災に関する学習 : disaster education program (subject relating to disasters and comprehensive study)

防災に関する指導 : disaster education teaching (extra curricular activities)

道徳 : moral education

防災管理 : Disaster management system
 対人管理 : interpersonal
 対物管理 : property
 防災に関する組織活動 : organizational activities
 for disaster management

IV. Scope of disaster education at school

1. Opportunities to teach disaster education in existing school system

V. Implementation of disaster education at school

In order to improve disaster education curriculum, it is necessary to make guidelines for teachers on disaster education, to establish teaching system, to conduct trainings for teachers, and to implement disaster education program according to disaster management scheme of each school

1. The purpose of planning for disaster management program at school and its content

- (1) The purpose of planning for disaster management program at school

Following is the purpose of planning for disaster management program at school

- a) To check and maintain school facilities and to establish system to find and remove any possible hazard may harm children in order to minimize the negative impact of natural disasters such as earthquakes.
- b) To establish system to give effective disaster education for children so that they understand what to do to protect their own lives from natural hazards.
- c) To prepare for emergency situations. Evacuation procedures should be prepared for safe evacuation of children. It also focus on how the school can be function as evacuation center in case of emergency.

- (2) The basic idea on making disaster management program

There are two possible ways to make disaster management plan at schools. It could be made as independent program. However, it also could be made as a part of "School Safety Program" which is a basic and comprehensive program focusing on school safety. As for the disaster prevention management for schools, can be part

of fire defense plan based on the Fire Protection Law.

(3) The content of disaster management program at school

In order to achieve the goal mentioned in the previous section, the content should include "disaster prevention", "disaster education", and "organizational activities". The details are shown as follows:

a) Disaster Education

- To bring up disaster related topics in related subjects such as PE, health, science, social studies or integrated study
- To provide guidance on disaster management as a part of homeroom activities
- To conduct drills in case of emergencies

b) Disaster Prevention

- To check and maintain school facilities
- To make evacuation procedures to ensure children's safety
- To establish information system
- To evaluate the level of safety of schools and to improve them
- To make procedures how to operate a school as an evacuation center

- To maintain emergency suppliers
- To establish school systems how to respond to the emergency situation
- c) Organizational activities
- To conduct trainings for teachers on disaster education and disaster prevention activities
- To conduct trainings for parents and to establish network among teachers and parents
- To hold committees such as "school safety committee"
- To conduct activities with community based organizations

2. Making guidelines on disaster education

- (1) The basic idea of making guidelines

It is importance to make guidelines which show clear relation to existing subjects, moral education or extracurricular activities and gives specific content in age-appropriate way.

- (2) To make guideline for physical activities and drills

The purpose of drills is to improve ability of children to evacuate in order to ensure own safety and to take initiatives to improve safety of others and their community. Following points are should be

considered.

a)The drill should consider various types of hazards including fire, earthquakes or typhoons. It should be also suitable to its school structure and site condition.

b)The timing or number of times should be decided based on the coordination with other school and community activities

c)The drills can be conducted anytime (during a class, between classes, before or after school or lunch time) so that students will be able to handle any emergency situation

II. Current situation and challenges based on the survey results

1.Current situation and challenges of disaster education at schools

Based on the survey conducted by Japan Traffic Safety Education Association (JATRAS) in 2004 (from kinder garden to middle school and in 2000 for high school, the current situation and challenges are summarized as follows:

a)The manuals on disaster management are created to some extent. However, the details such as specific roles of teachers or role of schools in case of emergency has not been developed.

b)Homeroom activities relating to disaster safety are mostly conducted twice a year in middle schools and three times a year in high school. On the other hands, 30 percent of high schools and 10 percent of middle schools do not have such activities at all. The activities are limited to evacuation system during the disasters. The communication with parents, first aids or volunteer works have not been focused much and it is necessary for the improvement.

c)While the fire drills are conducted 90 percent of both middle schools and high schools, the earthquake related drills are conducted in 80 percent of middle schools and 60 percent of high schools. The high schools needs to focus on earthquake related drills more.

d)Activities such as drills are conducted with a collaboration with the local fire department. However, there is a need to establish a coordination system with local community, parents organizations or local organizations and to develop manuals for everyone.

III. Conclusion

Although disaster education has been promoted publicly since 1995 Great Hanshin-Awaji Earthquake, the public awareness on disaster education has not been as high as it should be.

In the past few years, we have earthquake in Niigata prefecture, and many areas are hit by typhoons and floods. There is an urgent need to promote earthquake-safe school, disaster education, disaster prevention systems and to bring them into the existing system. In order to educate students with ability to survive for their long life, we need to provide disaster education with existing subjects by using materials described in the previous section and to cooperate with their family and local community to improve our disaster management system considering the specific characteristics of each area and disaster type.

防災教育の広がり

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兵庫県立舞子高等学校 環境防災科 科長

1. Cycle of Disasters and Lessons of Great Hanshin-Awaji Disaster (known as Kobe Earthquake)

First, I would like to show the process of disaster management in flow chart. Just after a disaster takes place, an emergent reaction such as rescue activity is taken. After that, through short-term recovery and long-term recovery, the affected community will be reconstructed. The difference between the disaster management so far and the one we are now carrying forward is whether it is well prepared for the coming disaster or not. Without preparedness, we would suffer from the same degree of disaster by the same degree of hazard. If we are well-prepared, on the other hand, we may be able to

initiated by rescue teams such as fire fighters and soldiers of Japan Self Defense Army, it was impossible to rescue all the people in all the areas because the affected areas were too wide and damages were simultaneously happening with the stop of water supply. These three facts eloquently indicate the only one lesson for the citizens. That is, we must protect our lives by ourselves.

Before the disaster, experts of earthquake had indicated the danger of earthquake in Hanshin area. Their indication had not reached the ordinary citizens. The city government had not set up the disaster management manual to cope with the seismic



図1 災害のサイクル



図2 防災のミッシングリンクを埋める

reduce the damages. We, therefore, succeed in disaster reduction with good preparation. What we have to keep in mind is this direction of disaster management.

① ② ③ We have learned a lot of lessons from the Great Hanshin-Awaji Disaster in 1995. Most of the lessons are for the organizations such as national or local governments, fire bureaus, Japan self defense army and so on. Now here is a question. What is the lesson for the ordinary citizens? I would like to point out three facts before referring to the lesson for the citizens. First, more than 90% of the victims lost their lives in 15 minutes just after the earthquake took place. Next, more than 80-90% of the rescued people were pulled out from the debris and rubbles by the contributions of the neighbors. The third fact is that even the rescue activities

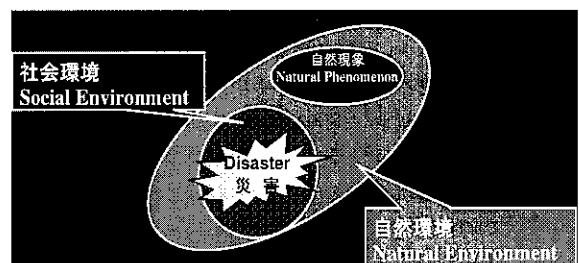


図3 社会環境・自然環境と防災

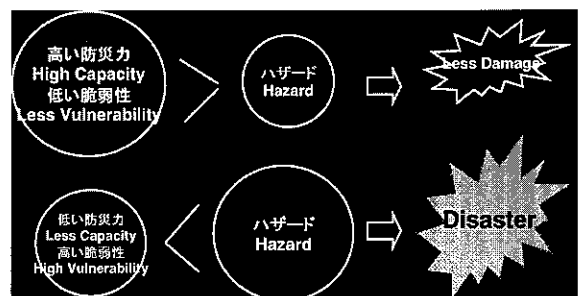


図4 ハザードと防災力の比較

intensity 7 according to Japanese scale. Therefore, there existed the “Missing Ring of Disaster Management” among the experts, the local government and the citizens as shown in Chart 2. The earthquake attacked our town that time. I would like to emphasize here that it is important to connect the experts and the local government with the citizens to prevent this tragedy from taking place again. Nothing can take that role without the disaster mitigation education.

④ To Know What is Disasters

④ We need to know the nature of disasters before the implementation of disaster mitigation education. This is the entrance to the disaster mitigation education at Maiko High School. Disasters take place when hazards give serious damages to the society. When the capacity to cope with the disasters in that society is stronger than the hazard, any disasters may not take place. On the other hand, the social capacity is weaker than the hazard, disasters may take place. I can safely say that the comparison of the social capacity to cope with disasters and the strength of hazards indicates whether it may become a disaster or not. Therefore, it is important in disaster mitigation education to think of the factors that make up the capacity strong enough to cope with disasters.

3. Examples of Practices Implemented by Maiko High School

I am frequently asked the same question when I say I'm the teacher of disaster mitigation education. That is, “After the disaster mitigation education, what kind of experts the students are expected to be?” I always answer to this question like this. “I'm glad if they become experts of disaster management as a result, but it is not the purpose. Our purpose is to raise the leaders of the citizens with the capacity to cope with disasters. That is the only way to make use of the lessons we learned from the Great Hanshin-Awaji Disaster.”

Now, what capacity are the citizens expected to get to cope with disasters? They are, I declare, the fundamental knowledge, the fundamental skills and the strong will to tackle the disaster management.

I would like to show you the direction of disaster mitigation education by showing some examples of



写真1 舞子高校環境防災科 校外学習の様子1

the practices we have implemented so far at Maiko High School. Here are the characteristics of the educational activities. First, we invite the guest teachers from outside of the school. They are the fire fighters, the soldiers of Japan Self Defense Army, who struggled very hard at the front of the disaster, the specialists at universities, the staffs of international organizations, the teachers who ran the evacuation places at school, citizens working for NPO, the people from “life line companies” and so on. They talk their experiences of the disaster and show the students the direction of disaster reduction in the future. They show the importance of human lives through their real experiences. Even in Kobe, the number of the people who had not experienced the Great Hanshin-Awaji Disaster is increasing. In addition, many people in the other areas of Japan and in the world have never experienced any disasters in their life. It is most prompt to let them experience the tragedy of disasters so as to make them prepared to the coming disasters. Not all the people, however, experience disasters. And we would rather want not to experience disasters. That's why we invite the guest teachers to let us experience by hearing something they have



写真2 舞子高校環境防災科 校外学習の様子 2

experienced instead of the real experiences.

We often go out of school to visit the museums such as the Disaster Reduction and Human Renovation Institution or Hokudan Earthquake Memorial Park to watch the living witness of the disaster and listen to the story by the storytellers. We stay at Kobe Fire Academy for one night two days. It is held once at 10th grade and once at 11th grade. The practices and drills are very important but it is much greater to have a direct contact with the sincere fire fighters.

We are implementing the disaster mitigation education with the pupils of the primary school nearby. The high school students, who are the last generation to keep the experiences of the Great Hanshin-Awaji Disaster in mind, teach the children their real experiences. The high school students learn the disaster management at school and teach the children in plain way. The high school students and the children make groups to walk around the community and make "Safety Map". Sometimes, we demonstrate the experiments such as liquefaction and volcanic

eruptions. We really want them to be interested in the Earth itself.

We hold the annual disaster memorial event "We never forget the Great Hanshin-Awaji Disaster: Our Mission, Who are Expected to be the Leaders of the 21st Century". We have just finished the 6th event this January. At the beginning of the event, it consisted of the special lectures by experts and workshops, the purpose of which was to listen to the experiences of the disasters. Gradually we have sifted from listening to the experiences to the presentations and panel discussions done by young people who tackle the disaster management. Now our purpose is to give the messages to the world. Not only the student of Maiko High School but also the children from the nearby junior high school and the primary school also take part in this event with some citizens. Emergency foods cooked by the students, parents, teachers and the soldiers of Japan Self Defense Army are served to the almost 1,000 people at the school yard.

The Environment and Disaster Mitigation Course is frequently invited to various workshops, seminars and conferences. In January, 2005, three students attended the international conference initiated by UNCRD at the World Conference on Disaster Reduction held in Kobe. The three panelists emphasized the importance of disaster mitigation education and talked something about their dreams in the future. Besides, we are invited to Tokyo, Aichi, Kobe and so on to make presentations about what we are doing at Maiko High School and to exchange the opinions.

International exchange is our special activity. Not only UNCRD but also Asian Disaster Reduction Center, Japan International Cooperation Agency and Hyogo Emergency Medical Center invite administrative officials from developing countries. They offer the schedule to learn disaster management in their seminars and Maiko High School is one of the places of their visit. The main purpose is the exchange between the participants and the students. Our students, furthermore, go abroad to study disaster management. In Nepal, "School Safety Program" is initiated by National Society for Earthquake Technology Nepal (NSET-Nepal). Totally 30 Maiko students have visited Katmandu and experienced the international exchanges. We have visited the local schools, stayed homes at villages, taken part in the workshops on disaster reduction, and explained our



図5 Survivorとなる防災教育Supporterとなる防災教育

practices. We have also learned a lot from their practice of “School Safety Program”. What we have learned there was the “wisdom” of a developing country.

In addition to the practices I have mentioned so far, I would like to emphasize another point. In Japan, high school education tends to be regarded as the preparation period for further education at colleges and universities. It is expected to acquire as much knowledge as possible to pass the entrance examination. But, in addition to getting knowledge, I would like the students to master the way to keep studying during their long life: that is, the task solving way of study. In this study, the students first set their task or goal. Sometimes it is given by the teacher. The students are expected to study the task by reading books and newspapers, using internet, and even walking around the affected area like Nagata and having interviews with the local people. They make reports and express their opinions in class. They are evaluated after their presentation not only by the teachers but also by the students. This evaluation helps them find the next theme. To master this learning system is one of the purposes of disaster mitigation education. This method can be adopted in other fields.

Can schools alone fulfill this variety of learning activities? No. We need helping hands from experts, International Organizations, NGO, NPO, administrations and so on. Maiko High School has been successful to construct such a network. In conclusion I declare that the indispensable keywords of disaster mitigation education are “experiences” and “network”.

Two types of disaster mitigation education, three methods

Let me divide disaster mitigation education into two categories. One is the education to be a survivor, while the other is education to be a supporter. Education to be a survivor is indispensable in vulnerable areas. Fundamental knowledge and fundamental skills must be mastered as soon as possible. On the other hand, education to be a supporter can be implemented everywhere. If you are lucky to have survived in the affected area, you can be a supporter. When you hear the news of disasters on TV, you can be a supporter, too. In this education more integrated knowledge, skills and practical ability are presented to the students to obtain.

There are three ways to the implementation of disaster mitigation education at school. First, we set a new subject “Disaster Mitigation Education”. This may be suitable for the education at vulnerable areas. Next, we can make good use of so-called “Integrated Subject”. Last, we use general subjects for disaster mitigation education. For example, I once offered my students a lesson using a letter from a high school student in Banda Aceh. I let the students write back, and I can say this is a good example of English lesson used as disaster mitigation education. In history, you can learn the history of disasters. In classic Japanese, you can learn the vanity of life that the ordinary citizens felt those days. In home economics, you can learn earthquake-resistant construction and how to fix the furniture firmly. In music, you can learn that music can be a message and healing. Once you come up with various ideas, you can use every subject as disaster mitigation education.

5. Show the Relations between Students’ Dreams and Disaster Management

At the end of this report, I would like to show you a device to make the students notice disaster management to be closer to their daily life. That is to connect students’ dreams with disaster management. A student who graduated from this course had had a vague dream to do something in foreign countries. After learning the disaster situations in developing countries she realized that what is prior to disaster management there is agriculture and environment. Now she majors in environment at the agricultural department in a university. She has a dream that one day she will initiate disaster management in the developing countries while supporting them in environment and agriculture. Students who are interested in welfare are taught that children and old

people are the victims at disasters. They come to think how to protect them. The purpose of welfare is to keep children, old people, and handicapped people feel safe and easy daily. Our students can find the similarity of the purpose of welfare and that of disaster reduction. Students who like sports say they want to encourage children in affected areas by playing with them. Music, environment, community building, and so on can also be connected with the students' dream, which make disaster management closer and daily to them. I call this Maiko Method and have a hope to spread it. Disaster management is not so special in a way. We must set it in our daily life. To think of the devices leads us to make disaster mitigation education

開発途上国の防災教育

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There are two themes today in terms of new actions for disaster mitigation education: 1) what to do and 2) how to do it. I would like to present the cases of developing countries before going into this subject.

<Developing countries and their schools>

In Japan, it is normal for children to go to school and getting an education is considered a natural thing. But in developing countries, there are still many children who cannot attend school. And in regions where there are children who cannot attend school, children who *can* go to school are considered lucky. “Children who attend school = lucky children” means that many people “want to attend school” and “want their children to attend school”. It also means that many realize that school is an important thing. I have been working in the so-called developing countries for the last 10 years and feel that people think schools are very important for them as the Buddhist and Hindu temples or Muslim mosque are as well. And for this reason, it is understood that disaster mitigation in schools is very important.

<Disaster management in everyday life>

I have personally lived in Kobe for about 5



写真1 インドの学校と子供たち

years after the Great Hanshin-Awaji Earthquake. Through this experience, I felt that “disaster mitigation” is seen in everyday life and it is very close to the people in Kobe. At least after the Great Hanshin-Awaji Earthquake, there is higher awareness in terms of “disaster mitigation”, “earthquakes” and “natural disasters” in Hyogo and Kobe. Currently, I live in Kyoto. Here, although it is in the same Kansai region and is not so far from Kobe, I feel that the people are less interested in disaster mitigation. It is the same overseas as well. Countries or regions that have seen natural disasters in recent years are aware of “disasters” and “disaster mitigation” but in places that are not affected, it is seen as less important. So in order to involve more people in “disaster mitigation” we must together think about problems related to daily life or agriculture.

<Disaster mitigation: from knowledge to action>

The main task in disaster mitigation education at schools is how to put into action lessons learned in school. In order to put into action, the lessons learned, one must start by “becoming aware” of the task, then “thinking” and “understanding” then “deepening the understanding”, which will lead to real actions. Disaster mitigation education has meaning only when it is taken into action so we must think about the educational process in which knowledge becomes action.

Hyogo Prefecture Maiko High School is the only high school in Japan with a disaster mitigation curriculum called “the Environment and Disaster Mitigation Course”. Through practical and experimental education, their goal is to spread disaster mitigation and cultivate the ability, attitude and power of students against disasters. (For details please refer to the presentation by Prof. Seiji Suwa). “The Environment and Disaster Mitigation Course” at Maiko High School is obviously a specialized course in this field but also in ordinary school education at



写真2 防災会議に参加する舞子高校の学生たち

elementary, junior high and high school levels, there is a need for disaster mitigation education that leads from basic knowledge to real actions. Without “practical actions”, “disaster mitigation education” is only education that remains in textbooks.

Disaster mitigation education that is being taught in elementary, junior high and high schools is not always coherent. Especially in developing countries, the elementary, junior high and high schools all have different authorities. From now on, we must create a coherent education process starting from elementary school till high school for a “new disaster mitigation education.”

<Carrying out disaster mitigation: the possibilities>

My students did a research project concerning “schools and disaster mitigation” for the high schools in India and Nepal. In developing countries, there are usually two types of high schools: public schools (including prefectural and national) and private schools. Especially in private high schools, most students aim to become a specialized profession such as doctors or engineers and their objective is to enter university and most of the children come from wealthy families. Keeping this in mind, it is not impossible for the public schools that are run with the support from the governments to “realize disaster mitigation education”, if only they decide a policy based on it. But in the case of private schools, parents who pay a substantial amount of money for the education of their children hope for “an education to realize the entrance of universities” rather than “disaster mitigation education” or “environmental education”. Thus with the pressure on schools from parents it is difficult to achieve “disaster mitigation

education” in private high schools. This is the result from the research taken out in India and Nepal, and the same kind of situation can be seen in Japan and other Asian countries. In the future we must think about “disaster mitigation education that can be carried out”.

In high schools in India and Nepal, we learned that the subject: “disaster mitigation” is already included in the curriculum of science or social studies. This can be said for the Japanese high schools as well. But as we have seen in Prof. Suwa’s presentation, schools are not yet ready to take in “disaster mitigation” in their current curricula as an individual subject. So taking in “disaster mitigation” to subjects that already exist instead of introducing it as a whole new subject, is what we need now. It is also important to think of disaster mitigation education, not only as disaster management but rather as part of a security education. “Local town development” and “town watching” which are currently being carried out in all over Japan, should be introduced in class and students should observe their environment on their own, think about various things, understand them and then act. This way, the sustainability of each action will become stronger.

<The effect of disaster mitigation education: developing a grading system>

It is not easy to see how much effect disaster mitigation education has. It has been noted many times that when the Tsunami hit the Indian Ocean, there was an English junior high school student who remembered having learnt in school that “when the sea withdraws, a big wave will come after it” and warned many people thus saving lives. This is a practical case of the effect that disaster mitigation education has. But there are not many cases where the effect of carrying out this education is clearly seen.

Therefore I would like to think about something in the UNCRD’s school project. This may be a little off the subject but for a few years now, the “Kids ISO14000 program” has been taking place targeting 30,000 children all over the country. This is an environmental education program in which children experience first-hand the relation between their own actions and the global environment at fam-

ily environment, global environment issues, and international environmental issue levels. For example, in the family environment, they check how much water and electricity they consumed or long they used the air-conditioning, and by recording their own actions, they think about the relation with the environment. The international committee for the Kids ISO14000 program grades the children and he who obtained good results receives a certification. As this program was highly appraised, the International Standard Organization (ISO) which sponsors the environmental management system ISO14001 supported this project and it became worldwide.

If we are able to create this kind of standard in the field of disaster mitigation, we would be able to see how much effect the disaster mitigation education has on children. I would like the UNCRD to consider this as a pilot project in realizing the “school project”.

<The leaders in disaster mitigation>

Finally, I think that the leaders in disaster mitigation education are not the adequate persons. I myself being a specialist in disaster mitigation am a specialist in a limited area. Therefore, I believe that although they have less specialized knowledge compared to experts, elementary, junior high and high school teachers who fully understand what the students need are more appropriate for the role of teaching disaster mitigation. Each school teacher should make a list of the information needed or what kind of specialist is required and also think about what kind of message should be transmitted so that the experts can support the system. It will be a new way to put disaster mitigation education into practice by having the people who are not specialists in disaster mitigation, start teaching it.

防災教育の新戦略

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これからの防災教育の方法とは？

質問1. 学校でどのような「防災教育」の内容を教えるべきでしょうか？

(例えば、中学校では、理科の授業で、地震の発生、天候、力学などを、保健・体育の授業では応急処置を、社会の授業で地理学を教えています。これらは、災害や防災に関連しています。しかし、中学生の災害に対する意識は高い訳ではありません。)

災害に対する意識を高めるために、学校で何を教えることができるのでしょうか？

Question 1: What are the most appropriate themes of disaster risk knowledge? How far can we go beyond basic science of disaster and simple information of emergency procedure that are currently covered in school education in some countries? How can we specify particular content to specific levels: primary, secondary and high school?

Mr. Toda: According to the guidance outline for education of Ministry of Education, there are currently three major objectives of disaster education in the school curriculum;

1. students can be made aware of risks from disasters, prepare disasters in their daily lives, and have the capacity to act effectively for secure their own safety based on decision under any situation,

2. Students can serve themselves to assist other people, groups, and region for establishing safety during and after disasters, in addition
3. students can understand the natural environment of the region, disasters and disaster mitigation as well as the mechanisms which trigger natural hazards, in order to empower themselves to cope with disasters actively throughout their life.

Mr. Suwa: Disaster education has two ways, "disaster education not to be a victim" and "disaster education to help others". Both ways need knowledge concerning natural phenomenon and social power for disaster mitigation. The contents should include mechanism of proper hazard occurrence in the region, social power to prevent disasters and so forth.

Mr. Rajib: Since the disaster risk awareness should be dealt with as a part of daily activities, disaster education should be included in the existing curriculum such as science, geography, and history. It will be quite difficult to continue the specialized education for disaster mitigation, except the course like Maiko High School. Teachers should consider the following issues according to the level of education.

First year of elementary school (from 6 to 10



years old). Aiming at increasing awareness of disaster related to their daily life. Students can begin to be concerned about the disasters.

From middle of elementary school to junior high school (from 10 to 16 years old). Focusing on sustainable development, environment, disasters and daily lives. Students can improve the ability to define various problems.

High school (From 17 to 18 years old)

Focusing on absorbing knowledge and maintaining ability

Question 2: What sort of strategy is appropriate to include these contents in school education? Should disaster risk management be taught separately in schools or should it be integrated into existing subject books of natural science, health, social science? How can we implement activities for learning how to minimize the effects of disaster in schools as HFA demands?

Mr. Toda: Every school needs to formulate a plan for school disaster mitigation, to provide guidance system to train teachers and to implement and evaluate disaster education emphasizing practices and experiences through cooperation with parents and communities.

Mrs. Suwa: it is important to teach disaster mitigation and to incorporate it with the dreams of students. For instance, students have interest in it is shown that the disaster has close relation to environment, social welfare, or international factor. Disaster education can be achieved using the integrated curriculum of individual subject that deals with such fields, and there is not need to prepare special lessons. However, in case of developing countries, disaster education should be appropriately integrated into the school curriculum.

Rajib: I agree with Mr. Suwa that the disaster education is not suitable to be taught as a special new curriculum. Disaster education should be integrated in the existing curriculum or subjects. However, promotion activities for disaster mitigation and outdoor activities to understand society or community would be more effective. Then, the lessons in the classroom can be realized and understood and the real target can be achieved, I suppose. There needs to be the three steps to realize the Hyogo framework for Action (HFA) in implementation of the school program.

Policy development: to add disaster education to be a part of education policy of national, local, or municipal government

Training and Capacity building: to train teachers and raise awareness of teachers in order to incorporate disaster education into school

education.

Curriculum development: To formulate and create the curriculum that includes disaster education connected with existing subjects.

Question 3: How can we evaluate the effectiveness of such measures in light of lessons from recent past earthquakes of Sumatra and Pakistan? Will implementation of these strategies would significantly help reduce the loss of lives and property in similar earthquake in the future? How can we quantitatively measure the impact?

Mr. Suwa: Earthquakes and Tsunamis come when people forget about them, as it has often been a long time since their last occurrence. If the disaster education is included in the curriculum appropriately, people will not forget. And people can afford to respond as they are well prepared, and they will result in disaster reduction. In addition, owing to the results of "disaster education to help others", we can be expected an increase in voluntary activities.

Mr. Rajib: It is difficult to evaluate the disaster education to account for the number of people save. Though I heard that a girl who was taught about Tsunamis in an England school saved many people's lives at the resort area in Thailand immediately after the Tsunami; though it is not quite certainly related directly to the disaster education. The real results of disaster education need quite a long time and continuous actions. In order to create "disaster prevention culture", disaster education not only need s to be in the schools but also in the community, family, and our own individual effort are requires.

Ando: I understand that the three panelists have considerably common parts. Now, each panelist is invited to add a comment after hearing the opinions of other panelists.

Mr. Toda: Mr. Suwa and Prof Rajib noted the issues that are relation to my presentation. Therefore, I would likto to comment on one more issue. It is also quite significant to identify who teaches disaster education. I said that science teachers often use the materials that we prepared for disaster education, that means other teachers do not use the materials. As mR Suwa and Prof. Rajib mentioned, it is essential to know the natural phenomena including natural disasters. However, that is not all. I believe that is it rather important to learn about the safety of own life, family and community.

The role to teach this is not only for science teachers. I hope that all teachers will join disaster education and we prepare the material with such iententions. Since teachers in elementary schools have no specialities, they cope with disaster education widely, while teachers in junior high school or high school who deal with disasters are limited.

I agree that the disaster education will not be realized if only a specific teachers deals with it. I sincerely hope that many teachers will be involved in the disaster

education.

Suwa: When I told people about disaster education, many of them asked me "what concept do you have?" and "what curriculum do you use?" many times. I feel embarrassed every time. Because I conduct disaster education in manner of trial and error and in fact, there is no disaster education system, I suppose. For instance, when I ask about disaster education to the ministry of education and board of education, they is an outline of direction of disaster education, however, there is almost no easy understandable texts or implementing system for disaster education.

By the way, recently, I strive for disaster education with experts such as university professors. Though the disaster education by university professor are thought to be difficult fo citizens, some tyr to make disaster education understandable for common people. For example, more professors entering into communities and cooperate with the elders in the community. Even when I asked to such professors about the disaster education system, they noted "please not to ask what is the system for disaster education, please create it for us for the future". I assume that there is not clear systems for disaster education in reality.

I often think about disaster education similar to a drawer of medicine that has many boxes. That means that there are various contents in each box and according to the hazards or

vulnerability of each community, necessary contents can be withdrawn and combined. It is impossible to use all contents related to disaster mitigation at the same time, I chose necessary contents from the drawer, for instance, if the classes are three hours, I choose the natural disaster which occurred around us or I select contents for five hour's class. I hope that I could complete such a drawer of medicine for disaster education.

I believe that there are two important factors to promote disaster education in the future. The first factor is to classify the contents such as “social environment and disaster” and “natural environment and disaster” etc. When we implement disaster education. IF we fail to formulate a framework, the course of disaster prevention will become that of patch work. Another factor is to focus on the network in order to have a lot of boxes in the drawer of medicine or a pocket like that Doraemon has.

The networks consisting of experts, governments, citizen, NGOs and NPO, are necessary. And in order to implement disaster education in all schools, “how

to enter into school” and “how to open the gate of school by the teachers” are important in case of Japan, while “how to involve schools based on the implementation of disaster education at the community-level” are essential, I think.

In addition to the presentation I have made now, the most important target for disaster education in developing countries is the teacher. Actually it is favorable to have a teacher like Mr. Suwa in every school, unfortunately most cases show the difficulty in implementing disaster education in developing countries, because of many pressures from parents of students. Therefore, what is essential is how to improve recognition of teachers to disasters and how to involve students.

One more thing I would like to say is the need to incorporate disaster education into the policies and plans of governmental agencies and make changes within the framework of general education planning in order to implement disaster education in developing countries. And then, as the former discussion shows, our target is to foster the culture of disaster prevention. Education is not to formulate things, but to bring up a person, this is not only the case of



disaster education. For that purpose, we need considerable time and efforts. I think we need to establish a target and to strive for it in the long run for further development of disaster education.

Ando: Please raise any questions or comments from the floor, here from now on. One or two questions are welcome.

Comment1: This is a comment. We do not forget that we will be a person who causes a disaster, as well as become a victim, I believe. An earthquake resistant retrofitting is not only for protecting your own house but also for avoiding kill others. Let's do retrofitting of your house. For instance, in case of a car, there is a system of safety inspection and without passing the inspection, we are not allowed to drive the car. I believe that we should have the similar system for the safety of wooden houses when once every ten or fifteen years, it is the owner's responsibility to have the house inspected. In case of rental houses, the residents or owners should be responsible to have the inspection, and it may be essential that such recognition should be shared with governments, owners and the residents.

Comment 2:

I am a lecturer at the Kobe city citizen's college. As I often saw about the Maiko High School on TV, I could not truly understand the activities actually.

The family supporters are the person whose targets are from children to the elderly, i.e. for all citizens. Therefore, we try to enter the el-

ementary schools and junior high schools and talk with teachers to develop a regional plan or to teach students about us, however it is considerably difficult to do so actually.

From such experiences, I think that parents cannot understand the contents only from the children, otherwise the parents understand what the teacher teaches children. It is important to have a direct communication between teachers and parents, how do you think about this and what do you do?

Mr. Suwa: I also think it is quite essential for the parents to come to school with their children. Though the students of high school tend to avoid the visits of parents to schools, those of elementary or junior high schools are not the case, and there are open schools.



For instance, at Tamon East elementary school, the students wal around their districts with the students of Maiko high school in order to make disaster preparation maps, and later they make presentations. I would like to say that these events need many efforts for teachers. Is is quite a difficult task to invite outside person into school under the current system, because of revision of various curriculum and procedures.

For the parents, it is difficult to come to school on every weekend and in case of weekday many parents cannot come because of their work. Then, I think that the teachers should teach classes as the students desire to tell their parents. When the class stirs interest in the students children may tell their parents about what they leaned. For example at dinner time in a natural conversation, their parents would like to listen to the children and we hope children will convey their lessons.

I think it is essential to give classes as the students want to tell to the family, and to send messages to the parents through their children.

Comment 2-2:

How about utilizing the elderly?

Mr. Suwa: It is quite natural. Children should be connected with every generation. There are many elderly who possess various technology and knowledge. It is an important comment that the elderly should come to school more often.

Mr. Toda: It is related to the comment, more elementary and junior high school provide opportunities to come together with parents and children and to invite person who have experienced disaster in Kanto and Tokai regions especially after the Great Hanshin-Awaji Earthquake.

As I said before, it is effective to cope with disaster education in all regional participation not only by

teaching children but also by inviting parents and citizens in the region to join in the model regions of disaster education.

In some regions, the elderly of the region make a speech on “the old disaster that occurred in the region” and the person who knows the history of the rgion well makes a presentation to the children and citizens of the region. Though it is difficult to do al well as these example because of the constraint of human resources and social and natural environment, it is important to promote education centered by children utilizing resources in each region. There are a variety of cases where the parents lean from their children, and parent lean with children and so forth. How about combining various methods to implement the education?

I would like to raise a question on the priority of earthquake disaster education and how to protect our own lives. According to the statistics, more than 90% of death at the Great Earthquake were caused by the collapsed of buildings. Of course, it is necessary to teach children about disasters, however the essential solution will become the existence of building safe against earthquakes, won’t it? I think that there exist a limit to the role of education in preventing the collapse of building which is the most critical issue for saving lives.

Ando: I am sure that it is important to prove physical conditions. On the other hand, the reason why the anti-seismic retrofitting is not so developed can be attributed to the problem of low consciousness of oners and residents of buildings. In order to provide stakeholders with incentive for retrofitting, the disaster education may play a considerable role.

Rajib: The safe building also saves the children, so it is essential. To promote anti-seismic retrofitting of schools and houses, it would be effective to let children convey the need to the adults or parents.

UNCRD is carrying out the school safety project by providing materials for disaster education to children as well as by retrofitting schools from hardware aspect. These integrated efforts have great significance and impacts

