Third International Conference on Urban Disaster Reduction (3ICUDR) –
“Sustainable Disaster Recovery: Addressing Risks and Uncertainty”

Japan Field Study Workshop Report (Rev. 6-13-13)
Sponsored by the Center for Global Partnership (CGP) of the Japan Foundation
March 12 – 15, 2013
Hotel Metropolitan Morioka
Morioka, Japan

DAY 0 – Tuesday, March 12 – Arrival Day

7:00-10:00 p.m. Welcoming Dinner for Japan Field Study Workshop Participants, Hotel Metropolitan Morioka

Summary: The field study workshop team gathered over dinner to review the schedule for the next three days’ activities. Prof. Haruo Hayashi welcomed everyone on behalf of the Japan planning committee which had organized the Japan field study workshop schedule. During the following discussion, a report on difficult circumstances experienced by the medical community following the Tohoku Earthquake and Tsunami disaster was presented by Dr. Shinji Akitomi, Department of Critical Care Medicine, Iwate Medical University. Participants expressed appreciation for his account of extraordinary efforts made to respond to needs of disaster victims. Participants also briefly shared their own hopes and aspirations for the 3ICUDR project and Japan field study workshop. A variety of expectations were expressed, as elaborated in the morning session on Day 1.

Note: A complete list of Japan field study workshop participants is provided in Appendix A.

DAY 1 – Wednesday, March 13

9:00-10:30 a.m. Opening Meeting of 3ICUDR Japan Field Study Workshop Participants, Hotel Metropolitan Morioka

Summary: Field study workshop participants met in the morning prior to the field trip which took the preponderance of the day to share individual interests regarding the overall 3ICUDR project as well as the Japan field study workshop. Prof. Shigeho Tatsuki of Doshisha University, who was unable to stay for the remainder of the workshop, expressed sincere interest on behalf of the Japan Institute for Social Safety Science (ISSS) in partnering with CGP, EERI, NCDR, NTU, the Natural Hazards Center, and other 3ICUDR sponsoring groups. He pointed out the long history of EERI/ISSS joint efforts in sponsoring international earthquake
reduction workshops, as well as participating in the 1ICUDR event in Kyoto in 2005 and the 2ICUDR event in Taipei in 2007. It was suggested that Prof. Tatsuki be included in future 3ICUDR Steering Committee teleconferences on behalf of ISSS. In the subsequent discussion, participants expressed individual views on desired outcomes for the Japan field study workshop. Some examples of desired outcomes are listed below.

- Focus on resilience as one theme; include issues of social vulnerability, develop consensus on how to study and measure resilience
- Focus on recovery as one theme—how government deals with recovery issues and policies, role of community, share ideas and experiences
- Consider adaptation strategy for climate change/extreme weather, and relationship to resilience studies
- Understand issues with long recurrence intervals between events
- Investigate issues with community-based recovery; how to build consensus.
- Understand the role of social media and the use of IT in recovery
- Investigate lessons with the Tohoku recovery—what are best practices (national leadership, science-based planning), what happened with second year of recovery (not much progress), plans don’t reflect social situation or economic realities in these communities.
- Understand the interaction between different levels of government—what are the benefits of having a stronger national program vs. a stronger state or local program? How does responsibility move from national to local levels?

**Note:** A complete listing of desired outcomes is provided in Appendix B.

Participants agreed that it would be valuable to have some focus in the 3ICUDR on events that have happened since the last time the ICUDR met (2007), and that issues and themes extend beyond generations and places. It was suggested that the central theme at the core is urban and that the structure be case-oriented, focusing on key important lessons from disasters in the last few years. Case studies presented need not be confined to the three countries represented in the project.

**10:45 a.m. – 6:30 p.m. Field Trip to Iwate Prefecture Impacted Areas**

**Summary:** Japan field study workshop participants traveled by bus to the tsunami-affected area along the coast of the Iwate prefecture. The first stop was Rikuzen-takata City, a coastal city in Iwate Prefecture hardest hit by the tsunami. A guide discussed some of the impacts, showing pictures of what the city looked like before, particularly its shoreline which had been designated as one of the more beautiful beaches in Japan with 70,000 pine trees near the beach. Typically 30,000 summer tourists would visit this city which had a
permanent population of 25,000. During the earthquake the land lowered 85 cm. There was 27-meter high tsunami inundation, and the coastline totally changed. After the tsunami there was ONE pine tree standing, representing a symbol of hope, survival, and resilience for future generations. The city has 2100 temporary houses. The city’s junior high school, next to the devastated area, is still standing, though the tsunami went through the school. The students escaped injury by carrying out emergency evacuation procedures previously exercised. The city was totally isolated immediately after the tsunami as it lost all its bridges. Townspeople knew how to evacuate properly, so survivors went to the hills.

Rikuzen-takata City has made plans for rebuilding. The largest issue is land acquisition and debris removal. One half of the debris has been shipped away and one half remains. Residents will not be allowed to rebuild in the tsunami area, but will need to move to higher ground. Regular updates and bulletins are sent to residents, informing them of these policies. Many have moved to other areas. Trauma support is needed for many survivors.

After Rikuzen-takata, the group traveled to Ofunato, Otsuchi, Yamada and Miyako towns, with equally compelling views of devastation, recovery, and rebuilding.

Note: A detailed field trip itinerary and route map is provided in Appendix C. Also, a photo gallery from the trip is available on an ftp site associated with this report.

DAY 2 – Thursday, March 14

9:30 – 11:45 a.m. Optional Visits to Morioka Kindergarten and Morioka Castle Ruins Park

Summary: Participants visited the Morioka Kindergarten, established in the early 1900s by Henry and Genevieve Topping, grandparents of field study workshop participant Ken Topping. Mr. Sakamoto, Principal, led a brief program. The optional tour also included a visit to a nearby park in which a tablet placed in stone contains a poem by famous Japanese Poet Kenji Miyazawa, student of Henry Topping, including references to Topping family members. Mr. Ryuichi Sato, Executive Director of the Iwate University Center of Poet Kenji Miyazawa explained the historical significance of the poem. Members of a historical society sang the words of the poem. The optional visits were included in the schedule by the planning committee to: 1) celebrate the coincidental historical connection of the Topping family with Morioka, and 2) underscore importance of knowledge-sharing between people from different countries.

Note: Additional information regarding these optional visits is provided in Appendix D.

1:00 – 5:00 p.m. Open Forum, Hall of the Milky Way, Iwate University
Part I: Input from Impacted Area – Following opening remarks by Shigeki Sakai, Director, Research Center for Regional Disaster Management, and Professor, Department of Civil and Environmental Engineering, Iwate University, Dr. Sakai moderated four presentations by Iwate University faculty.

A. Presentation: “Development of New Inspection Method for Decrepit / Devastated Road Bridges,” Prof. Hiroshi Onishi, Associate professor, Dept. of Civil and Environmental Engineering, Faculty of Engineering, Research Center for Regional Disaster Management, examined the status of damage to old bridges within the context of vulnerable aging infrastructure. The presentation emphasized the difficulty of making a post-disaster inventory because of the large number of old bridges within Iwate Prefecture. The suggestion was that, if possible, such inventories are best made before disasters.

B. Presentation: “Tsunami Evacuation of Fishermen in Iwate Coastal Area,” Yuriko Matsubayashi, Assistant Professor, Dept. of Civil and Environmental Engineering, Faculty of Engineering, Research Center for Regional Disaster Management, discussed the vulnerability of the fishing industry to tsunami, pointing out that 75% of the industry was in shellfish and aquaculture before the tsunami. It was pointed out that the industry largely involves small boats operating in shallow waters, and that many of these boats were lost because few were able to go out to sea, a traditional way to avoid damage. The presentation stated that a new warning system is needed.

C. Presentation: “Analysis Report of the 2011 Off the Pacific Coast of Tohoku Earthquake and Tsunami – Spatial Gap of the Tsunami Damage for Houses,” Ryoichi Yanagawa, Assistant Professor, Dept. of Civil and Environmental Engineering, Faculty of Engineering, Research Center for Regional Disaster Management, presented data regarding tsunami impacts including: tsunami run-up heights of as much as 40 meters, 45,000+ housing units damaged. Run-ups were higher in northern area than in southern areas. However, damage to housing was higher in southern area.

D. Presentation: “The Nurturing and Succession of Disaster Culture – Regional Schools as a Core of Disaster Management, Focusing on Two Essay Guidance for Collections of Students’ Tsunami Experience Essays at Taro, Iwate,” Tomoko Yamazaki (Professor, Department of English Education, Faculty of Education, Research Center for Regional Disaster Management, outlined the importance of the historical disaster culture in relation to damage and survival. In the case of schools, many were damaged but tsunami drills helped save many lives. Disaster culture = awareness of risk + skills to face a crisis. Disasters reveal conflicts and challenges which disaster management should attempt to resolve through promotion of risk awareness. An example was a 91 yr. old lady who had experienced major tsunamis twice, reflective of resilient attitudes at the core of community survival.
Part II: Input from the Taiwan Experiences – Two presentations on recovery experience from catastrophic disasters in Taiwan were moderated by Liang-Chun Chen, Director, National Science and Technology Center for Disaster Reduction.

A. Presentation: “Disaster Recovery and Collective Relocation of Typhoon Morakot.” Haili Chen, Assistant Professor, National Taipei University, discussed the challenges and difficulties associated with post-disaster relocation of large numbers of people.

B. Presentation: “Chi-Chi Earthquake (1999).” Pei-Chun Shao, Associate Professor, Chang Jung Christian University provided an overview of damages and rebuilding from the Mw 7.6-7.7 Chi-Chi Earthquake of September 21, 1999, touching on impacts on rural areas near the epicenter located in central Taiwan.

Part III: Input from the Japan Experiences – A series of three presentations were moderated by Keiko Tamura, Professor, Risk Management Office, Niigata University.

A. Presentation: “Holistic Approach for the Process of Life Recovery Based on the System of Disaster Victims’ Master Database.” Keiko Tamura provided an overview of progress made in designing and constructing a victims’ database for the tsunami-impacted area.

B. Presentation: “Micro Media Service for Building Up the Personal Resilience.” Munenari Inoguchi, Assistant Professor, Research Institute for Natural Hazards & Disaster Recovery, Niigata University, described challenges associated with real-time GIS application of victims’ databases, with examples from various earthquakes.

C. Presentation: “Two Styles of Long-term Recovery -Kobe and Tohoku.” Haruo Hayashi, Professor, Center for Research in Disaster Systems Reduction (DRS), Disaster Prevention Research Institute (DPRI), Kyoto University, briefly referred to life recovery thinking emerging after the Mw 6.8 Hanshin-Awaji Earthquake of January 17, 1995, and then described a new view emerging after Tohoku Earthquake and Tsunami of March 11, 2011, which recognizes three levels of recovery. The top level is Renewal, the most comprehensive; the second level is Reconstruction; the bottom level is Rehabilitation or simple restoration. He argued for a national multi-tiered initiative deploying this conceptual framework to meet specific local needs following future disasters.

Part IV: Input from U.S Experiences – A series of six presentations were introduced and moderated by Ken Topping, Lecturer/Researcher, Department of City and Regional Planning, California Polytechnic State University-San Luis Obispo.

A. Presentation: “Viewing the Tohoku Disaster from across the Pacific Ocean,” Ken Topping, Cal Poly. Mr. Topping introduced each of the following presenters, stating that disasters
are a universal phenomenon taking many forms and expressions in different places, from which we can learn ways to reduce impacts and adapt to challenges and opportunities.

B. **Presentation:** “EERI: The Role of a Professional Association in Facilitating Disaster Recovery Learning and Collaboration.” Marjorie Greene, Special Projects Manager, Earthquake Engineering Research Institute, discussed the importance of learning about earthquakes and disasters through collaboration of professional associations, emphasizing the interconnections of knowledge built around four phases of emergency management, including mitigation, preparedness, response, and recovery.

C. **Presentation:** “U.S. Tsunami Preparedness and Mitigation Program: Applying Lessons Learned from Tohoku-oki Tsunami.” Rick Wilson, Engineering Geologist, California Geological Survey, characterized tsunamis as an especially difficult kind of disaster because of the totality of life and property losses, coupled with infrequency, and showed how the Tohoku Tsunami has influenced tsunami planning in the U.S.

D. **Presentation:** “Building Response Capacity for Large Disasters.” Richard Eisner, Fellow of the American Institute of Architects, discussed emergency response as the foundation for disaster management; he identified important elements of response and the need for coordinating actions between all groups in the community.

E. **Presentation:** “Katrina as the Focusing Event for U.S. Disaster Policy.” Laurie Johnson, Principal, Laurie Johnson Consulting & Research, described Hurricane Katrina as the first truly catastrophic disaster in the U.S. for nearly a century, and explained many ways in which Katrina represented a turning point in U.S. disaster management.

F. **Presentation:** “Learning about Recovery around the World.” Rob Olshansky, Professor, University of Illinois, discussed the importance of using a global approach to building disaster recovery knowledge, and outlined the need to show how disaster lessons from one country can be helpful to people in other countries.

4:40-5:00 p.m. **Discussion** – Participants held a brief discussion of key points from the presentations.

6:00-8:00 p.m. **Social Gathering after the Forum** – Participants from the Open Forum enjoyed a social hour and light dinner together.

**Note:** Copies of available English language PowerPoint presentations from this session will be posted on the 3ICUDR website.
DAY 3 - Friday, March 15

9:30 a.m.–12:00 p.m. – Meeting of Japan Field Study Workshop Participants, Hotel Metropolitan Morioka

**Summary:** Field study workshop participants were asked to share initial individual impressions from the previous two days, and to discuss plans for moving forward with the next two field study workshops and the 3ICUDR event. A wide-ranging series of comments and viewpoints were expressed. Participants emphasized how information sharing was helpful. There was discussion about the case study approach, noting that there are many different affected communities along the northeast coast of Japan presenting many potential case studies, though the situation varies significantly, especially between the three prefectures. How can such experiences be described sufficiently, and be put in context meaningful to those in other countries? It was suggested that issues in the Tohoku context are larger than emergency management, communications, or recovery, because of its enormous scale. This led to discussion that, while the core could focus for the 3ICUDR event in 2014 should be on recovery and related case studies, broader issues could be presented; for example, resilience is a concept that is ongoing, not just present after disasters.

There was additional discussion about what to cover in the Boulder Field Study workshop in July, 2013. While the focus of this field study workshop needs to be setting of the themes for the 3ICUDR, suggestions for specific presentations included such topics as the U.S. National Disaster Recovery Framework (NDRF), Superstorm Sandy, and changes in U.S disaster management since 9/11. The event should also provide opportunities for comparative discussions about relocation and pre-event planning for post-disaster recovery.

Professor Chen presented a draft agenda for the October 2013 Taiwan field study workshop. There were suggestions that the workshop be shortened by one day, and that emphasis be added regarding urban recovery issues following the Chi Chi disaster. It is important to also examine the Morokot event. It was suggested that perhaps some field trips could be made optional, more formal events added, or time on the bus used for meetings.

**Note:** A more complete description of the morning discussion is provided in Appendix D.

1:00-4:30 p.m. Closed Forum – Special Briefings on Iwate Prefecture Response and Recovery Experiences, Iwate Prefectural Government Offices

A. **Presentation:** Mr. Shuzo Koshino, Director, Disaster Management Department, Iwate Prefecture, conducted an extensive briefing regarding multiple aspects of response to the Tohoku event, with special focus on tsunami impacts along the coast. He described severe, extensive difficulties encountered in attempting to respond timely to an event of...
this magnitude and complexity, emphasizing that many lessons should be learned from this experience for the benefit of other places. Mr. Koshino described extreme circumstance encountered in the response to this event. Overall, more than 6,000 lives were lost. Because of the great extent of damage it was difficult to accurately estimate the full height of the tsunami until much later. Infrastructure damage was much greater than in the 1995 Hanshin-Awaji Earthquake.

The Emergency Operations Center (EOC) was operating within an hour of the event, but there was no information. Telephone lines were shut down, and there was no cell service because of power limitations. Staff members were sent out by helicopter for field observations, but rescue operations did not begin until the next morning. The administrative bureaucracy had difficulty quickly identifying necessary decisions and actions. Although using the style of Incident Command Systems (ICS), there was no corresponding immediate change to administrative operations, and it took 10 days to fully implement ICS. The initial goal was maximum lifesaving. There was no Geographic Information System (GIS) in operation to provide data, so Iwate Prefectural Government staff tried to imagine the scale of damage. The greatest resource supporting the effort at this point was preparedness.

Circumstances were extremely difficult: roads were useless, and there were 194 isolated damaged areas reported. Iwate Prefecture is 180 kilometers across, with 700 kilometers of coastline. Of the 460 planned evacuation shelters, 80 suffered damage of varying extents. Disabled people and caregivers tending them lost their lives. One recovery principle emerging from this event is that vulnerable people who need attention from caregivers should be encouraged not to live in high risk areas. Otherwise they put both groups at risk.

Elevations of the expected tsunami in hazard maps were too low. People outside of expected tsunami run-up areas were misled. Additionally, only 60% of people thought there would be a tsunami; 40% didn’t evacuate even though they felt the earthquake. However, tsunami education helped save the lives of school students – children’s decisions to evacuate were better than those of adults. No lives were lost among the children under the influence of the preparedness system in Iwate Prefecture.

In organizing the response, the prefecture staff found no outside logistics support initially due to a fuel shortage and the absence of any national logistics system for emergencies. Another major issue was dealing with bodies. Cremation facilities were overwhelmed and it was hard to distribute to bodies for proper handling.

**Conclusions:** Important disaster preparedness and response lessons which should be
learned from this experience for the benefit of other places include: 1) the need for a common operational picture, 2) the need to imagine in advance the scale of potential catastrophic events, and 3) the need for pre-event planning, systems, and training.

B. Presentation: Mr. Hiroyuki Suzuki, Department Special Chief, Disaster Recovery Authority, Iwate Prefecture, conducted a detailed briefing regarding varied aspects of post-Tohoku disaster recovery in Iwate Prefecture, describing the varied nature of the damage and impacts between numerous coastal communities, identifying complex recovery issues and tasks faced during reconstruction, and revealing multiple factors related to the slowness with which reconstruction was taking place in some areas. He was assisted by Mr. Okimu Fujisawa, Department Chief, Disaster Recovery Authority, and Mr. Shinji Kikuchi, Administrator, Disaster Recovery Authority, Iwate Prefecture. During this briefing, a courtesy call was made by Mr. Yoshiyuki Takamaeda, Deputy Director, Disaster Recovery Authority, Iwate Prefecture.

Mr. Suzuki stated that 34% of the land area of Iwate Prefecture coastal towns had been inundated by the tsunami. The first recovery plans emerged in August 2011. Citizens had been invited to be involved in recovery planning. There were 123 machizukuri groups (town building councils). Recovery plans focused on health, schools and the marine industry. Recovery issues included employment, replacement housing, services, financing, economic decline, and shortage of technical support for reconstruction. Almost one-half the people are still displaced.

A major issue was land tenure – there have been serious challenges in finding missing land owners. Under land readjustment rules, all owners in the land inheritance must agree to reconstruction plans. This has been a major source of delay in reconstruction. A more flexible reconstruction system is needed. Additional sources of delay include the slowness of the central government to provide funding due to various factors, including rigidity of financing criteria, concerns about potential criticism from taxpayers in unaffected areas, and poor coordination between ministries. Iwate Prefecture has made active efforts to encourage central government ministries to coordinate. The situation here is different than in Miyagi Prefecture. Sendai is a big city and can command attention.

Other sources of disruption in the recovery process include displacement and new economic conditions. A majority of displaced people cannot return to their original housing. Movement to temporary housing is an unsettling step adding to uncertainty regarding where households will end up. The prefectural government is emphasizing three and four-story cooperative projects as replacement housing. In addressing economic development, there is the need to need to base small business grants on the
new economic realities.

**Conclusions:** Planning during rebuilding must have vision, be rapid, and include stakeholders. It is important to educate people. Also, this was a 1,000 year event but the legal framework encompasses only more frequent, smaller scale events, therefore providing insufficient funding for catastrophic events. Additionally, although a victim database had been developed after the event, it should be ready before the next disaster.

**4:30-5:30 p.m. Meeting of Japan Field Study Workshop Participants, Iwate Prefectural Government Offices**

**Summary:** Participants discussed the question of how best to capture information and ideas from the Wednesday and Friday afternoon presentations for the 3ICUDR event, particularly those offered by Iwate Prefectural Government representatives. In going forward, it is important to shape a 3ICUDR vision-mission statement before the July 12, 2013, U.S. Field Study Workshop meeting. A working group has been formed to draft an initial statement in preparation for the July 2013 workshop. The vision-mission statement for 3ICUDR will be one important outcome. The 3ICUDR vision-mission statement should serve as a fulcrum for how the 2014 event evolves. Ideally, selection of potential speakers for the July 2013 Boulder Field Study Workshop should take into account individuals with knowledge of working themes emerging from the vision-mission statement, helping to define 3ICUDR event program tracks.

**Note:** A more complete description of the afternoon discussion is provided in Appendix G.

**6:00-8:00 p.m. Closing Party for Field Study Workshop, Prefectural Government Restaurant**

**9:00-10:00 p.m. Meeting of Small Group of Field Study Workshop Participants on Next Steps for U.S. Field Study Workshop, July 2013, Metropolitan Morioka Hotel**

**Summary:** Persons present included Haruo Hayashi, Keiko Tamura and Munenari Inoguchi from Japan; Li-Chung Chen and Jie-Ying (Paul) Wu from Taiwan; and Ken Topping, Rick Wilson and Marjorie Greene from the U.S. A series of possible themes for the 3ICUDR vision-mission statement were considered for integration into materials used in the advertising for the 3ICUDR event, and for recruitment of participants on the steering committee. A major emphasis is on breaking down barriers between single-focus research and action, while placing greater emphasis on integration of disaster reduction science and practice. A variety of topics were considered. Emphasis should be placed on the importance of including long-term recovery in disaster management, with attention to resilience and
adaptation. It was suggested that key research themes emerging from the vision-mission statement might possibly acknowledge these basic elements: hazards, exposure, vulnerability (includes both structures and social vulnerability), human activity, and time need to combine the interrelatedness of all this. It was agreed that EERI would circulate a draft vision-mission statement to be discussed by the group during April. A tentative July 2013 Field Study Program announcement would then be circulated for approval by the larger 3ICUDR planning group by mid-May.

Note: A more complete description of the evening discussion is provided in Appendix H.
Appendix A:

Japan Field Study Workshop Participants
[Note: please check & correct all names and titles]

Japan Field Study Workshop Participants
1. Haruo Hayashi, Professor, Center for Research in Disaster Systems Reduction (DRS), Disaster Prevention Research Institute (DPRI), Kyoto University
2. Norio Maki, Assistant Professor, Center for Research in Disaster Systems Reduction (DRS), Disaster Prevention Research Institute (DPRI), Kyoto University
3. Shigeo Tatsuki, Professor, Faculty of Social Studies, Doshisha University
4. Keiko Tamura, Professor, Risk Management Office, Niigata University
5. Munenari Inoguchi, Assistant Professor, Research Institute for Natural Hazards & Disaster Recovery, Niigata University

U.S. Field Study Workshop Participants
1. Ken Topping, FAICP, Lecturer/Researcher, California Polytechnic State University, Department of City and Regional Planning-San Luis Obispo
2. Laurie Johnson, AICP, Principal, Laurie Johnson Consulting & Research
3. Rick Wilson, Engineering Geologist, California Geological Survey
4. Marjorie Greene, Special Projects Manager, Earthquake Engineering Research Institute
5. Rob Olshansky, FAICP, Professor, University of Illinois at Urbana/Champaign
6. Richard Eisner, Fellow of the American Institute of Architects

Taiwan Field Study Workshop Participants
1. Liang-Chun Chen, Director, National Science and Technology Center for Disaster Reduction
2. Jie-Ying Wu, Associate Professor, Ming-Chuan University
3. Pei-Chun Shao, Associate Professor, Chang Jung Christian University
4. Jing-Chein Lu, Assistant Professor, Central Policy University
5. Haili Chen, Assistant Professor, National Taipei University
6. Hui-Hsuan Yang, Senior Assistant Research Fellow, National Science and Technology Center for Disaster Reduction
7. Chuan-Chung Deng, National Science and Technology Center for Disaster Reduction

Iwate University Participants
1. Dr. Shigeki Sakai, Director, Research Center for Regional Disaster Management, and Professor, Department of Civil and Environmental Engineering, Iwate University, Iwate University
2. Prof. Hiroshi Onishi, associate professor, Dept. of Civil and Environmental Engineering, Faculty of Engineering, Research Center for Regional Disaster Management
3. Prof. Yuriko Matsubayashi, Assistant Professor, Dept. of Civil and Environmental Engineering, Faculty of Engineering, Research Center for Regional Disaster Management
4. Prof. Ryoichi Yanagawa, Assistant Professor, Dept. of Civil and Environmental Engineering, Faculty of Engineering, Research Center for Regional Disaster Management
5. Prof. Tomoko Yamazaki, Professor, Department of English Education, Faculty of Education, Research Center for Regional Disaster Management
6. Mr. Kazunori Aikawa, Staff, Public Relations and University Regulations
7. Mr. Yoshiharu Yaegashi, Chief, General Supervisor for Research Cooperation
8. Prof. Shin Koshiya, Associate Professor, Dept. of Civil and Environmental Engineering, Faculty of Engineering, Research Center for Regional Disaster Management
9. Prof. Naoto Kamoshida, Assistant professor, Dept. of Civil and Environmental Engineering, Faculty of Engineering, Research Center for Regional Disaster Management

Iwate Prefecture Participants
1. Mr. Shuzo Koshino, Director, Disaster Management Department, Iwate Prefecture
2. Mr. Hiroyuki Suzuki, Department Special Chief, Disaster Recovery Authority, Iwate Prefecture
3. Mr. Okimu Fujisawa, Department Chief, Disaster Recovery Authority, Iwate Prefecture
4. Mr. Shinji Kikuchi, Administrator, Disaster Recovery Authority, Iwate Prefecture
5. Mr. Yoshiyuki Takamaeda, Deputy Director, Disaster Recovery Authority

Special Presentations: Opening Dinner, Morioka Kindergarten, Miyazawa Kenji Monument
1. Dr. Shinji Akitomi, Department of Critical Care Medicine, Iwate Medical University
2. Mr. Hiroshi Sakamoto, Director, Morioka Kindergarten
3. Mr. Ryuichi Sato, Executive Director, Center of Poet Kenji Miyazawa, Iwate University

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Appendix B:
DAY 1 – Wednesday, April 13, 9:00-10:30 a.m.
Meeting Re Desired Outcomes from Japan Field Study Workshop and 3ICUDR Event

Individual statements regarding desired outcomes from these events are listed here:

• Identify the possible date for the 3ICUDR (early October 2014 in Boulder)
• Collect photos and documentation from the field
• Encourage, cultivate and facilitate participation from young incoming researchers, the next generation
• Build a multinational, interdisciplinary platform for collaborative research
• Focus on resilience as one theme; include issues of social vulnerability, develop consensus on how to study, measure resilience
• Emphasize risk communication, particularly lessons from Taiwan and Japan
• Focus on recovery as one theme—how government deals with recovery issues and policies, role of community, share ideas and experiences
• Consider adaptation strategy for climate change/extreme weather, and relationship to resilience studies
• Develop an integrated research approach for disaster reduction, perhaps using the forensic investigation framework.
• Focus on individual preparedness
• Review what has been accomplished in the last 10 years of the Hyogo Framework and prepare for the next 10 years
• Understand how Japan is adapting to probabilistic estimates of loss
• Understand issues with long recurrence intervals between events
• Investigate the role of the NGO sector
• Consider a focused case study on Fukushima—can theories of recovery be adapted for Fukushima.
• Investigate issues with community-based recovery; how to build consensus.
• Investigate how to build up a resilient community in the recovery process, how to revitalize the impacted area
• Understand how to use the large amount of available data for resilience.
• Explore the role of visualization and mapping in disaster management
• Understand the role of social media and the use of IT in recovery
• Use someone from the “old world” and the “new world” to jointly chair each session at the 3ICUDR.
• Include human-induced issues in topics for 3ICUDR, including oil spill, Fukushima, induced seismicity.
• Build on the professionalization and bureaucratization of recovery planning—look for opportunities to understand common frameworks

• Investigate lessons with the Tohoku recovery—what are best practices (national leadership, science-based planning), what happened with second year of recovery (not much progress), plans don’t reflect social situation or economic realities in these communities.

• Construct forums, venues, events to keep the conversation going about how to increase knowledge and create communities that can recover better. 3ICUDR will be an important event for this.

• Record peoples’ experiences after disasters

• Understand the interaction between different levels of government—what are the benefits of having a stronger national program vs. a stronger state or local program? How does responsibility move from national to local levels?

• Investigate what we can do now to adjust to changes in the environment in the future.
Appendix C:
DAY 1 – Wednesday, April 13 – 10:45 a.m.-10:45 p.m.
Field Trip Itinerary

10:45-10:50 a.m. – Board bus
10:50 a.m. – 1:00 p.m. – Drive to Rikuzen-takata City
• Professor Hayashi provides lecture about overall situation of Tohoku EQ and tsunami
• Exchange questions and ideas after listening to Hayashi presentation
Rikuzen-takata city (1:05-2:00 p.m.)
Site visit guided by local volunteer
• Visit roadside station ruined by tsunami Impact
• Observe remaining debris
• See the Coastline and *Kiseki no Ippon Matsu*, Miracle Pine Tree
• Hear story about successful evacuation of Kesen Junior high school
• See ruined railroad station named Rikuzen-takata

Ofunato-city (2:10-3:15 p.m.)
• Stop by the Ofunato City Hall to pick up Mr. Hirayama, a city official of Victim’ Support Office
• Mr. Hirayama guides tour of locations where Rich Eisner previously took photos

Otsuchi-town (4:30-4:50 p.m.)
• Stop by new temporary city hall which used to be the elementary school
• Stop by the building with wall painting of rainbow, drawn by international volunteer team
• Visit ruined Otsuchi town hall

Yamada-town (5:10-5:15 p.m.)
• Drive and observe the situation of Yamada-town and see town hall which survived

Taro-district, Miyako-city (6:10-6:30 p.m.)
• Visit Taro branch of Miyako-city hall
• See situation of dike

Greenpia Taro, Miyako-city (6:40-6:50 p.m.)
• Visit Temporary Housing Complex Site

7:00-8:30 p.m. – Dinner at *Greenpia Taro*
8:30-10:45 p.m. – Drive back to Morioka Metropolitan Hotel

*Note:* See Field Trip Route Map on next page
Appendix C (cont.):
DAY 1 – Wednesday, April 13 – Field Trip Route Map
Appendix D:
DAY 2 – Thursday, March 14 – 9:30–11:45 a.m.
Optional Visits to Morioka Kindergarten and Poetic Tablet at Morioka Castle Ruins Park

Summary: Participants visited the Morioka Kindergarten, established in the early 1900s by Henry and Genevieve Topping, grandparents of field study workshop participant Ken Topping for a brief program. Following opening remarks by Mr. Sakamoto, Morioka Kindergarten Principal, Mr. Topping talked with the students about the reason field study participants were in Morioka. He emphasized the importance of learning throughout one’s life and making friends with people from other countries in order to make a better world. The students sang a song composed by the Topping founders regarding a “small garden” in which seeds (of knowledge) are planted and grow.

A second part of the optional tour was a visit to a nearby park in which a small tablet placed in stone contains a poem by famous early 20th Century Japanese Poet Kenji Miyazawa, a student of Henry Topping. The poem is set in Morioka in the early 1900s, making references to Topping family members. Mr. Ryuichi Sato, Executive Director from Center of Poet Kenji Miyazawa, Iwate University, briefly explained the historical significance of the poem to people of the region. Members of a historical society sang a song reflecting the themes of the poem.

The intent of the planning committee in including the Morioka Kindergarten and Miyazawa poem tablet visits in the schedule of activities was to 1) celebrate a coincidental historical connection of the Topping family with Morioka and Iwate Prefecture, and 2) underscore the importance of knowledge-sharing between people of different countries for global societal benefit.

Appendix E:
DAY 3 – Friday, March 15 – 9:30 a.m.–12:00 p.m.
Meeting of Field Study Workshop Participants

Participants were asked to share initial impressions from the previous few days, as well as to discuss plans for moving forward with the next two field study workshops and the 3ICUDR. Participants emphasized how trading good information, even just among group presentations, was very useful. There was quite a bit of discussion about the case study approach, which is considered a good focus. Better case studies improve the learning process. There are so many different affected communities along the coast of Japan all going through their own rebuilding, there are an enormous number of cases just along the Japan coast. It would valuable to look at these cases and consider the issue of scale--what
does this mean for each inlet, each community? What is the process? What are the stories that will emerge from this process? Some will be very successful. Some will not be as successful. The situation varies significantly along the long coast. For example, Sendai city has power to attract Japanese government resources, but not the Miyagi Prefecture. People are afraid to talk about Fukushima. How can these issues all be treated sufficiently? How can these be put in context with other cases, including the one presented by Prof. Pei-Chen Shao (Taiwan), Kanako Ouchi’s Ph.D. dissertation (Niigata), or Hurricane Sandy?

It was suggested that the issues are larger than emergency management, communications, or recovery. Particularly in the Japanese context, the scale is so enormous is that recovery is just one slice of a much larger and more complex set of issues. All these dimensions need to be identified. There was discussion that case studies need to be complete, which also goes to question of international standardization. There was some discussion that for the 3ICUDR the core could focus on recovery, and recovery case studies, but there could also be broader issues that are presented. Resilience, for example, is a concept that is ongoing, not just present after disasters.

The Boulder Event

There was discussion about what to cover in the Boulder Field Study workshop. While setting the themes for the 3ICUDR need to be the focus, there were suggestions for some specific presentations that included:

- A presentation on the National Recovery Framework
- Superstorm Sandy, comparisons with Katrina
- Changes that have been made in disaster management since 9/11
- Begin to set up the themes for the 3ICUDR
- What has the U.S. learned in the last decade in emergency management
- Provide opportunity for comparative discussions—relocation issues, for example
- Pre-disaster training: Cascadia and San Francisco

The Boulder meeting will also be an opportunity to discuss where the series of ICUDR conferences is going. Marjorie Greene, EERI, will check with Kathleen Tierney, Natural Hazards Center, about logistical issues. These include having a Saturday morning meeting, and determining where people will stay.

The Taiwan Field Study Workshop

Professor Chen presented a draft agenda and itinerary. There was a suggestion to shorten the workshop by one day. Two suggestions were given for possible field trips/presentations.
• Include urban issues in Chi Chi, such as in construction practices, and lessons learned. Previously, field study workshops participants have heard about rural success stories, and not so much urban. We need to understand more how the central government managed reconstruction practices, organized funding, and worked with local governments. What was the relationship between central and local governments? Perhaps it would be possible to arrange some visits or case studies in urban areas—e.g., condominium reconstruction?

• Another area was the power generation problem following the Chi Chi earthquake. The earthquake shut down a nuclear power plant, but it may not be clear to people from other countries how Tai Power learned to balance power demands. This is related to other critical infrastructure issues which may have been experienced. What were recovery lessons were learned re power and infrastructure issues?

Participants felt that perhaps some of the field trips could be made optional, and/or time on the bus could be used for conference meetings. If possible, there should be more formal meetings, as it is very stimulating to hear lots of different perspectives. However, it is important to be exposed to both the Chi Chi and Morokot events. Also, this will be the last chance to meet as a group before the 3ICUDR event.

**Suggested Milestones for 3ICUDR:**
By end of Boulder meeting, settle on mission statement.
By end of Taiwan meeting, settle complete theme, potential speakers.
Negotiate who can come on own budget, etc.

**Suggestions and Issues for 3ICUDR**

• How large should the meeting be? The US needs to more independent from NSF support. The conference could be self-carrying, more autonomous, as dependence on the NSF grant has blocked the progress with these exchanges. We need to think how we can continue such meetings and to be more self-sustaining.

• There should be focused discussions at ICUDR. Each session should result in a product, so the product is more than proceedings. Papers can be attachments, but there should be a summary product, with an organized structure, and recommendations for future. Within each theme, there could be a question to be answered, and the product would provide the answer.

• Scientists and engineers should be brought in through the steering committee process. They can help in understanding the complexity of the disaster, thinking about it from engineering, seismology, geology. But the definition of the problem will still be driven by social scientists.

• The 3ICUDR should emphasize quality; bigger is not better.
• It will be important to convey the message about the type of conference this will be from the first flyer. The group needs to find the balance for the conference, and convey that we are interested in both people and environment.

A small group is needed to begin crafting the mission statement. A draft of this mission statement will be circulated before the Boulder meeting, so it can be discussed there.

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Appendix G:
DAY 3 – Friday, March 15 – 4:30-5:30 p.m.
Meeting of Japan Field Study Workshop Participants,
Iwate Prefectural Government Offices

Participants discussed the question of how best to capture for the 3ICUDR event information and ideas from the Wednesday and Friday afternoon presentations, particularly those of Iwate Prefectural Government representatives. The presentation by Mr. Koshino underscored issues and required improvisation related to really large natural events. Because he had imagined “the unimaginable” before the event, he was better able to respond. It was noted that the perspectives of field study workshop participants as outsiders helped raise questions that might not otherwise come up.

It would be good to invite someone from government or local officials from Iwate Prefecture coastal areas to the 3ICUDR event. However, who is invited can bias what is discussed and learned. Where there isn’t research being done, perspectives of administrators are useful. Accountability is an overriding issue of getting the perspectives from those who are “down on the ground.”

In going forward, it is important to shape a 3ICUDR vision-mission statement before the July 12, 2013, U.S. Field Study Workshop meeting. A working group has been formed to draft an initial statement in preparation for the July event. The vision-mission statement for 3ICUDR will be one outcome of the July 2013 Boulder workshop.

It is also important to more clearly define the 3ICUDR steering coming. Certain CGP project members have participated so far. For the 3ICUDR steering coming, it is important to identify country chairs who can work with a larger group in each country. Also, formal representation will be needed from the Institute for Social Safety Science (ISSS), currently represented informally by Shig Tatsuki.

It was suggested that the vision-mission statement should reflect a combination of perspectives of those committed to international, multi-hazard, social and physical science
research, as well as engineering and emergency management practice. The proposal for the CGP project is a useful starting point for the vision-mission statement.

The vision-mission statement should initially be developed by a small group of about two or three persons per country, with subsequent assistance of other key people, and perhaps younger generation researchers and practitioners.

Persons who are members of institutions and universities having access to funds external to the CGP budget should be invited to participate on the 3ICUDR steering committee. For example, Kathleen Tierney, director of the Natural Hazards Research Center, can help invite others having access to such external sources of funding to help boost participation in the 3ICUDR event. Also, individuals like Dr. Sakai from Iwate University should be encouraged to participate in the 3ICUDR steering committee as well as secure funding for participation of faculty from his institution.

The 3ICUDR steering committee needs to identify and appoint chairs, including those beyond persons presently working on the CGP project, based on potential 3ICUDR program topics emerging from to key themes within the vision-mission statement. Since CGP is the primary funding source, the structure and direction of the 3ICUDR event program needs to also fit within the basic work statement approved.

Potential 3ICUDR “program chairs” should be invited to the July 2013 U.S. Field Study Workshop in Boulder, while confirming their knowledge, interest, and commitment to serve in such capacities. Identification and selection should be based on some combination of subject matter expertise, institutional support, capacity to secure additional resources, such as travel funding for relevant younger generation presenters for the event. Program chairs should include social science researchers as well as those working in seismology, engineering, and urban planning fields. Emphasis should be on inclusion of those who are strongly oriented toward multi-disciplinary integration.

In addition to the program chairs, it is important to recruit 3ICUDR event co-sponsoring organizations which can also provide or bring in more funding. The number one example is the National Science Foundation (NSF), but other disaster research centers in the U.S. may also be able to help.

The 3ICUDR event should seek to generate future research themes based on ideas emerging at prior ICUDR events and current studies from which to launch ongoing research inquiries. An example of such a pivotal prior session would be the recovery theory session at the 2ndICUDR in November 2007 in Taiwan.
The 3ICUDR vision-mission statement should serve as a fulcrum for how the 2014 event evolves. Ideally, selection of potential speakers for the July 2013 Boulder Field Study Workshop should take into account individuals with knowledge of working themes emerging from the vision-mission statement, helping to define 3ICUDR event program tracks. People invited to guide information development for each track will provide a resource by which to manage themes, review submitted abstracts, and select final program presentations for the 3ICUDR event program committee.

Appendix H:
DAY 3 – Thursday, March 15 – 9:00-10:00 p.m.
Meeting of Small Group re July 2013 U.S. Field Study Workshop

Persons present included Haruo Hayashi, Keiko Tamura and Munenari Inoguchi from Japan; Li-Chung Chen and Jie-Ying (Paul) Wu from Taiwan; and Ken Topping, Rick Wilson and Marjorie Greene from the U.S.

A series of possible themes for the 3ICUDR vision-mission statement were considered by those present to be integrated into materials used in the advertising for the 3ICUDR event, and, more broadly, for recruitment of participants on the steering committee. A major emphasis was on breaking down barriers between single-focus research and action, while placing greater emphasis on integration of disaster reduction science and practice. Topics to be considered within the broader framework of the vision-mission statement would include multi-hazard risk assessment, breaking down barriers between disciplines and disaster cycles (mitigation, preparedness, response, and recovery), connecting past and future, connecting people across disciplines and across international boundaries, and applying lessons learned from other countries.

Emphasis should be placed on the importance of including long-term recovery in disaster management, including aspects such as reducing risk and vulnerabilities, increasing resiliency, shifting from a fragmented mitigation model to a holistic resiliency model, enhancing sustainability through learning and adaptation, as well as linking local, regional, national, international governments, non-governmental, and private sector organizations. Most important is the need to help create a better global, multi-disciplinary understanding of recovery in the long-term sense.

The general 3ICUDR vision-mission statement should perhaps include overarching themes of resilience and adaptation, recognizing future uncertainties, and challenges of how to effectively plan for resilience, using opportunities for transforming communities to new,
more sustainable forms. We should make sure young researchers are part of the shaping of this mission statement.

Professor Hayashi presented a conceptual formulation in which time is a critical variable to be considered along with other, more traditional factors: \( R = f(D, A, T) \), where \( R \) = resilience, \( D \) = damage (hazards, exposure, and vulnerability), \( A \) = human activity, and \( T \) = time. Time is an important factor to consider in adaptation to new circumstances – if efforts are too hurried, adaptation is not possible, or if efforts are too slow, people start complaining. Social science can contribute in two ways—exploring the human activity component, and in maximizing themes.

The idea here is to go beyond old thinking, and describing the concept of resiliency as broader than only disaster reduction. It is important to avoid the current pitfall of excessive arguments about defining resiliency, relying on available broad definitions such as provided in the *Journal of Disaster Research*, Volume 5, Special Issue No. 2 (May 2010) and Special Issue No. 5 (October 2010).

Prof. Hayashi added that he personally prefers the key word adaptation over resilience, because adaptation implied adjustment of elements over time, such as short-term vs. as long-term adaptation, depending on time frames. The conversation then turned to a graphic formulation including three interrelated points of a triangle representing; Human Activity, Time, and Space. The question is how might resilience and adaptation fall within these three points – perhaps within the center?

It was suggested that key research themes emerging from the vision-mission statement might possibly acknowledge these basic elements: hazards, exposure, vulnerability (includes both structures and social vulnerability), human activity, and time need to combine the interrelatedness of all this. The spatial aspect should be added as strong dimension.

The suggestion was made that each of these (and perhaps other factors) could constitute the core around which each initial key research questions can be formulated at the July 2013 Field Study Workshop. The question will then be does this approach make sense in shaping each 3ICUDR research track?

It was agreed that EERI would circulate a draft vision-mission statement to be discussed by the group during April with the idea of having the larger 3ICUDR planning group undertake a teleconference on this topic by the end of April. A tentative July 2013 Field Study Program announcement would then be circulated for approval by the larger 3ICUDR planning group by mid-May.