The 3rd UN World Conference on Disaster Risk Reduction
Iwate University Public Forum

"Resilience of Local Community and Capacity Building by Iwate University"

Date & Time: 18 March 2015 (Wed) 9:20-11:40 (Open 9am)
Venue: 601 Room, Tokyo Electron Hall Miyagi, Sendai City

Organizer: Iwate University
Co-sponsors: • Iwate Prefecture • Morioka City
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“Resilience of Local Community and Capacity Building by Iwate University”

Date & Time : 18 March 2015 (Wed) 9:20-11:40 (Open 9am)
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Preface

Approximately four years have passed since the Great East Japan Earthquake. Iwate University established the “Organization of Revitalization for Sanriku-region” based on the slogan "Dedicating all of Iwate University’s power to the recovery and reconstruction of Iwate prefecture”. We carried out earthquake disaster reconstruction activities with residents playing major roles while we maintained a deep connection with the Sanriku region.

For example, we have engaged in the development of many programs including emergency response just after the earthquake, grass-roots community development, disaster preparedness and education for children, industry reconstruction of the fisheries, and leadership development for disaster and crisis management.

Today’s forum is split into two parts. In part 1, we will show examples of the reconstruction support activities that Iwate University has engaged in thus far. We will introduce the steps taken in these collaborative efforts between the university and the disaster affected areas toward reconstruction after the Great East Japan Earthquake.

In part 2, we will meet Mr. Tetsuo Kondo (Director, UNDP Representation Office in Tokyo), Prof. Akihiko Hokugo (Director, Research Center for Urban Safety and Security, Kobe University), Prof. Makoto Okumura (Deputy Director, International Research Institute of Disaster Science, Tohoku University) and discuss the importance of making a resilient local community.

In this forum, we would like to share case examples of practical activities in the reconstruction from this unprecedented disaster. In addition, we will examine the role of the university in the disaster affected areas in the post 2015 framework.

March 18, 2015

Akira Iwabuchi
President of Iwate University
Forum Program

〈MC〉 Assoc. Prof. Natsumi Onaka (International Liaison Center)

9:20 Opening Remarks
President of Iwate University
Akira Iwabuchi

9:30 Presentation on Roles of University

1) Introduction
   Prof. Masaaki Minami (Director of RCRDM*)

2) Local Community Development
   Prof. Junichi Hirotai
   Assoc. Prof. Masako Okuno and Assoc. Prof. Makoto Sasaki

3) Disaster Preparedness and Education
   Assoc. Prof. Akihiro Tsuchiya

4) Industry Reconstruction
   Prof. Syuiti Abe (Deputy Director of Sanriku Fisheries Research Center)

5) Leadership Development for Disaster and Crisis Management
   Assoc. Prof. Shin Koshiya (Deputy Director of RCRDM*)

10:30 Break

10:40 Panel Discussion

〈Moderator〉 Prof. Katsumi Matsuoka
   Prof. Masaaki Minami (Director of RCRDM*)
   Mr. Tetsuo Kondo (United Nations Development Programme)
   Prof. Akihiko Hokugo (Kobe University)
   Prof. Makoto Okumura (Tohoku University)

11:40 Closing

* Research Center for Regional Disaster Management
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* Research Center for Regional Disaster Management
Introduction

Masaaki Minami (Iwate University)
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Key words: Regional Disaster Management, Earthquake Disaster Reconstruction, Natural Disaster Analysis, Community Development and Disaster Management, Disaster Culture

1. Towards the Recovery from the Great East Japan Earthquake (Outline of the RCRDM)

From April 2012, a year after the Great East Japan Earthquake and Tsunami, the Research Center for Regional Disaster Management became a university-wide institution from an affiliated entity of the Faculty of Engineering. Full-time and part-time faculty members, research assistants, and visiting professors from inside and outside the university are all advancing research and education that contribute to regional disaster management as well as to the recovery and reconstruction after the disaster.

One of the main features of the Center is its focus on regional disaster management, as its name also suggests. Tsunami, volcanic eruption, flooding and other forms of natural disasters tend to be region specific in terms of their occurrence as well as regarding the process of recovery and reconstruction that follows. Thus, the Center is engaged in disaster management research and education that is built on regional characteristics specific to Iwate and the Tohoku area. Many of our faculty members value a long-term engagement with familiar fields, identifying challenges that regional disaster management faces, and seeking solutions to improve the situation.

The Center consists of three divisions including Natural Disaster Analysis Division, Community Development and Disaster Management Division, and Disaster Culture Division. Since the occurrence of the Great East Japan Earthquake and Tsunami, our faculty members in the three divisions have been working together with local residents in the form of field studies assessing the degree of devastation in affected areas, and also through analyzing earthquakes and tsunami, supporting community development and reconstruction, giving educational support and support for keeping oral and written records. Hence, our mission is to become the research hub for Iwate’s regional disaster management as well as the platform for reconstruction in the Sanriku coastal area and other affected areas in Iwate.

Our goals in the immediate future include advancing research and education together with local communities in order to accelerate post-disaster reconstruction works. We also consider it important to strengthen partnerships with other universities inside and outside Japan, such as those which went through the Great Hanshin and Awaji, Niigata Chuetsu or other earthquakes and reconstruction processes, and also with regional

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universities that are concerned with possible Nankai Trough and other earthquakes. We seek to develop these partnerships to create a common learning ground that is coherent through the past, present and future.

2. Activities of Each Division (Recovery support to the stricken areas)
(1) Natural Disaster Analysis Division
The division focuses on the earthquake and tsunami of the Great East Japan Earthquake, and analyzes the distribution of seismic intensity and tsunami propagation on each coast to draft disaster response measures. It also promotes research on possible disasters in Iwate including flooding, landslides, and volcanic eruptions as well as research work to improve disaster management by local communities.

(2) Community Development and Disaster Management Division
The division seeks research work to create disaster resilient cities based on the lessons learned from the 2011 disaster, and pursues community development and reconstruction from tangible and intangible aspects in the following three fields: Regional Planning Field, Civil Engineering Field, and Disaster Information System Field.

(3) Disaster Culture Division
The Disaster Culture Division looks to enhance and reinforce disaster management education in schools and society based on the lessons learned after the 2011 disaster in order to develop human resources who will lead regional disaster management. And the division performs the activities for creating and passing down disaster culture.
Since in the devastating disaster due to the 2011 Tohoku-off-shore earthquake, Iwate University, located in the capital city of the seriously damaged coastal areas of Iwate, launched the Research Center for Regional Disaster Management (RCRDM) and has risen to the challenges of reconstruction and restoring these areas. The center is comprised of three divisions, which carry out research on natural disaster analysis, in community development and disaster management, and in disaster culture, respectively, to construct grassroots disaster management systems and to develop infrastructures and social and educational systems to reduce the impact of disasters. Through this creation, educational programs on disaster management in local communities have been implemented such as leadership training courses.
Purpose

1. Safe and secure regional development in the Sanriku area
2. Creation, practice, and succession of disaster culture
3. Information on disaster prevention practice in the Sanriku area

Affair

1. The aim is to expand practical disaster management activities of local communities which have been implemented by the faculty members of Iwate University. These activities concern support for the construction of disaster management systems, the education of disaster prevention and mitigation, and contribution to the development of facilities, communities and human resources for recovery and reconstruction in the devastated areas struck by the Great East Japan Earthquake and Tsunami in 2011.
2. Constructing community-based and bottom-up disaster management system for residents living in areas frequently struck by tsunami, based on their traditional disaster culture.
3. Transmitting information on disaster prevention practices accumulated in the Sanriku area to communities which will be possibly struck by huge earthquakes in the near future.
4. Functioning as “the International Center for Disaster Prevention Research” planned by the Iwate Prefectural Government.
5. And creating fruitful results by collaborating with other universities and research groups.
Organization

Efficient collaboration of the three divisions
Natural Disaster Analysis Division

The division focuses on the earthquake and tsunami of the Great East Japan Earthquake, and analyzes the distribution of seismic intensity and tsunami propagation on each coast to draft disaster response measures. It also promotes research on possible disasters in Iwate including flooding, landslides, and volcanic eruptions as well as research work to improve disaster management by local communities.

1. Appropriate location of important public and social infrastructure facilities
2. Appropriate locations of coastal protection facilities (including the seawall)
3. (3) Improvement of disaster management in local communities including evacuation

Community Development and Disaster Management Division

The division seeks research work to create disaster resilient cities based on the lessons learned from the 2011 disaster, and pursues community development and reconstruction from tangible and intangible aspects in the following three fields:

1. Regional planning field
2. Civil engineering field
3. Disaster information system field
Disaster Culture Division

The Disaster Culture Division looks to enhance and reinforce disaster management education in schools and society based on the lessons learned after the 2011 disaster in order to develop human resources who will lead regional disaster management. The division performs the following activities for creating and passing down disaster culture:

1. Human development by enhancing and reinforcing disaster management education at schools and in society
2. Creating and passing down disaster culture

Regional Disaster Management Forum

1. Special Lecture in Commemoration of the Establishment of the RCRDM
2. The Great East Japan Earthquake As Seen from Abroad
   — Comparison with the 2004 Indian Ocean Earthquake and Tsunami
3. Open Seminar on Disaster Recovery at Iwate University 2012
   Rikuzentakata International Disaster Recovery Forum 2012
4. Crisis Management and Community Development for Disaster Management
5. RCRDM Activity Report of 2012
6. Let’s construct the Future
   Learning Together with Children from the Tsunami-Affected Areas:
   Creation, Succession, and Expansion of Disaster Culture
7. Nature and Human Symbiosis
   Various Concepts of Nature and Disaster Culture
8. RCRDM Activity Report of 2013, and Lecture Presentation
9. Community Development and Reconstruction for the Future
   — Joint Forum of Iwate University and Kobe University
   — Iwate from the Time of Devastation to Present
A forum was conducted to report on the annual results of the RCRDM activities. Furthermore, other RCRDM research forums were conducted by experts to report on the research findings and to exchange the insights of the participants regarding the results.

**Disaster Management Education Material**

These teaching materials, prepared in cooperation with the Iwate prefectural government, comprise documents regarding several types of disasters, namely earthquakes, tsunamis, volcanic eruptions and landslides, to teach the residents disaster management in order to make them more aware of possible risks.
International Exchanges Program

Faculty members and students of Iwate University and its partner institution, Earlham College and other universities visit each other for international exchange.

Publication of the RCRDM

RCRDM Brochure

RCRDM Annual Report

Lecture Text of the RCRDM Forum

Tsunami Experience Essay “INOCHI”
Local Community Development

Reconstruction Support of the Regional Community

Junichi Hirota (Iwate University)
E-mail: hirotaj@iwate-u.ac.jp

1. Introduction

The Regional Community Reconstruction Support Group of the Community Life Support Division of the Organization of Revitalization for Sanriku-region carried out a multifaceted reconstruction aid for the revitalization of the local community. This included support of local community activities, framing support of the reconstruction plan, fact-finding survey of the community, the building of an extended community aiming at a sustained interchange with the outside world, and policy proposals to take root in the region. The concepts of the support are as follows: 1) providing required support for each area, 2) support aimed toward local independence, 3) Growth of the recipients and providers. This report introduces the concrete activities of the revitalization support for those local communities.

2. Support activities

For each area, the local communities carried out the resurgence of events that took place before the earthquake disaster and activities to support new action after the earthquake disaster, such areas include Miyako city, Yamada town, Kamaishi city, Ofunato city, Rikuzentakata city. As an example, in one case we gave assistance for the resurgence of the event called the “JINYA ASOBI” which was held on Children's Day May 5 in Ozaki and Higashimae districts, in Kamaishi city. We encouraged residents to take part and to support this, which included preparations of the necessary items. Also, a group of us helped hold the "Star Festival Event to Move" twice, after the earthquake disaster in Morinomae district, Rikuzentakata city. Today, various kinds of current support include community building between residents, and community building with residents and neighboring local inhabitants in their shift from temporary housing to disaster public housing in such following areas, Ofunato city, Rikuzentakata city, Kamaishi city, Miyako city.

3. Support planning

We planned and managed the workshop for the framing of a reconstruction plan and the reconstruction contract plan of each district in areas such as Ofunato city, Noda village, and Yamada town. We acted as a coordinator in the making of the voluntary disaster prevention plan and the earthquake disaster prayer park plan with the resident’s participation in the following areas, Otsuchi town, Kamaishi city, and
Rikuzentakata city.

4. Survey
This group investigates the current situation of temporary housing and the tsunami refuge action. It assists the life support and the rearranging of lessons learned by the earthquake disaster, and implementing to voluntary disaster prevention plan in the following areas, Otsuti town, Kamaishi city.

5. Building extended communities
In the stricken areas, the population continues to decline after the earthquake disaster and will decrease further in the future. Constant interaction is important with the homeowners or the local community supporters. We call communities made with those people, extended communities and they provide support by dispatching information to the outlying stricken areas, and assist in community formation in the concrete district in such following areas, Kamaishi city, Ofunato city, Rikuzentakata city, and Kamaishi city.

6. Propose policies
The members of this group are concerned with the planning of the recovery design and reconstruction plan of the country, prefectures, cities, towns and villages (government, Iwate prefecture, Tanohata village, Noda village, Miyako city, Yamada town, Yamamoto town). In addition, we send policy proposals in line with the present conditions from the stricken areas to the university upon request.
SUPPORT FOR RECONSTRUCTION OF LOCAL COMMUNITIES

18\textsuperscript{th} March, 2015
Sendai Electron Hall

Junichi HIROTA
Iwate University, JAPAN

Concept of supporting reconstruction of local communities

- be with people
- support independence
- growing up together
1. SUPPORT ACTIVITIES

Revival of Festival and Traditional Events

“Jin-ya Asobi” (Children’s event raising fisherman’s flags in Osaki community in Kamaishi)

Moving Tanabata Festival in Rikuzen-Takata
Community Flower Garden in Morinomae community

- Make beautiful landscape in Tsunami affected areas.
- Enhance communication in local community and with outside people and students.

Project of Kesen-maru for children

- Kesen-maru, a traditional sailing ship for transporting rice and food in Edo period, reconstructed about 20 years ago.

Children interview and record process to realizing sailing in the sea.
Market day in Yamada

Enhancing communication within local people, and with outside people.

COMMUNITY BUILDING IN disaster PUBLIC HOUSING

• When moving from temporary house to disaster public house, most people are not familiar to each other.
• Efforts should be done to build a new community.

A get-together in a disaster public housing in Rikuzen-Takata city on 9th November, 2014..
Support children by students

Study, cooking, sports, etc

Support people in temporary housing by students

Foot bath with communication

Tea party

Handicrafts
2. SUPPORT PLANNING

Support making reconstruction plan

Planning for
• development of residential land
• Land use of tsunami affected areas
• Memorial Park
Disaster prevention planning by people themselves

Kiri-Kiri community in Otsuchi town

Iwate Nippo / local newspaper
On 24th July, 2014

3. SURVEY
Visit for hearing in temporary housing

Yomiuri Online, 23th June, 2014

Hearing for recording evidence of dead people

河北新報 2014年06月08日
4. BUILDING EXTENDED COMMUNITY

Population Decrease in Affected Areas

1.00 in January, 2010

- 3 Prefectures in affected areas
- Other areas in Japan
- Cities and towns in affected areas
Expanded Community

Inhabitant Community

Support Community
Native
Exchng
Interest

Sustainable and multilateral Support and exchange

Manpower
Money
information

Symposium for Reconstruction of Tohoku
“Connect to Iwate”
Expanded Community in Tokyo

7th December, 2013
In Itabashi-ward, Tokyo

Programm 13:30 ~ 16:30
Introduction of the activities of Iwate University
Lecture: What the Expanded Community is,
Relay Talking
- A supporting party to Kamaitachi
-ARAGAMI Heart-
Youth for Ofunato
Hold out IWATE Project
Summary - What we can do!

(above: Symposium, below: Exchange meeting)
Symposium for Reconstruction of Tohoku
“Connect to Iwate” part.2
Expanded Community in Tokyo

Spring has come.
Let’s go to Sanriku!

Program 18:30〜20:45
Lecture: Nature and Culture of Sanriku
Relay Talking on Food and Tourism
- Restaurant bar “Okirai-Ya”
- Sea kayaking in Yamada
- Sanriku tour by Ken-poku Bus company
- Guided tour in Rikuzen-Takata
- Special train by Sanriku Railway Company

E_code Project
Publication & Delivery of Map on Attractive TAKATA
- Free magazine supporting to Rikuzen-Takata –
5. PROPOSE POLICIES
Participation in planning

- Working group of the Reconstruction Design Council. (Central Gov.)
- Expert Committee on the strategy of reconstruction from great Tsunami damage in Iwate prefecture
- Committee on the reconstruction plan of earthquakes in Tanohata village, Miyako city, Yamada town, Yamamoto town, etc.

Proposal for measures to population decrease

To municipalities suffered from Tsunami disaster.
CONCLUSION

Community support of Iwate University in future

1. Be with people
   - Face to face support
   - Support independence
2. Support with students
   - High - spirited, cheerful, working hard
3. Promote to expanded community
   - Send Information to the metropolitan area etc.
   - Coordinate with affected communities and other communities
4. Issues oriented approach
   - Build new communities in housing complex by group moving, and disaster public housing
   - Recovery of the past prosperity of towns
   - Records and succession of experience of Tsunami disaster
A Report about Psychological Care by the team

○ Masako Okuno, Makoto Sasaki (Iwate University)
E-mail: mokuno10@iwate-u.ac.jp, E-mail: sasakima@iwate-u.ac.jp

The purpose of this presentation is to report the psychological care delivered by the team. Institution for reconstruction of Sanriku by Iwate University consists six branches, one of that is in charge of livelihood support. In order to support their livelihood, psychological care is required. Therefore the team members, who are clinical psychologists, professors, researchers, devote their professional attention to support people in the affected areas, Sanriku region.

The activities for psychological care have eight viewpoints.

First, we make plans for psychological care with collecting information by attending various conferences and move from the plans to action adjusting the support for the people in Sunriku.

Second, we operate the counseling room at Kamaishi and do counseling with the people who were visited by the earthquake for free. The specialists are also available for consultation with supporters. Program of mental healthcare toward supporters

Third, we help the supporters to support the people in Sanriku. Various types of trainings and programs about are provided with the supporters. We monitor their stress and give them feedback.

Fourth, we also contribute psychological education programs toward the residents regularly at Kamaishi, miyako, Ofunato and Rikuzentakada. The lecturers, clinical psychologists are available for them.

Fifth, we visit at the residents of temporary housing and give relaxation exercises. Graduate students enrolled in clinical psychology course at Iwate University graduate course assist us as volunteers.

Sixth, we send school psychologists to High School in Sanriku to do counseling with students and teachers collaborating with the board of education in Iwate Prefecture.

Seventh, interventions for traumatic experience are being introduced. We have tapping touch programs and consider EMDR participating in the training programs to help people with PTSD.

Eighth, we develop basic psychological researches for more effective care. Recently we examine physiological markers by receiving relaxation exercises.

As we described above, our psychological care is conducted by using utilizing multifaceted approaches and collaborating with other specialists.
A Report about Psychological Care by the team
― Local Community Development ―

○ Masako Okuno (Iwate University)
Makoto Sasaki (Iwate University)

Institution for reconstruction of Sanriku by Iwate University

Education support livelihood support fishery Technology agriculture forestry disaster prevention

volunteer Psychological care Affected animal cultural property community
The team for Psychological care

1. Plan for Psychological care
2. Operation of counseling at Kamaishi
3. Program of mental healthcare toward supporters
4. Education Programs
5. Visit at residents of temporary housing
6. Counseling at High school in Sanriku
7. Intervention for traumatic experience
8. Basic researches for Psychological care

Start for Psychological care  【need recognition】

*collecting information by attending conferences
*adjusting the support for the people in Sunriku
【Operation of counseling at Kmaishi】

- Counseling with the people who were visited by the earthquake
- Consultation for supporters

Visit at the residents of temporary housing

- Giving relaxation exercises
- Assistance by graduate students enrolled clinical psychology course
【Support for supporters】

Training for attentive listening

Programs for mental health

- various types of trainings and programs for supporters
- Monitoring their stress and giving them feedback

【Education programs for the residents】

Tapping・Touch

About Humor and laughing

- Education programs were held regularly, at Kamaishi, Miyako, Ofunato, Rikuzentakada.
- Lecturers, clinical psychologists, are available.
【Kamaishi as hub institution for support】

- “Ambiguous loss” was discussed through Skype.
- Salon for orphans of earthquake.

【support for the field of education】

Collaboration with support for students by the board of education and High Schools
【Basic researches for Psychological care】

Researches using biofeedback device
Disaster Preparedness and Education

Teacher Training Program for Disaster Risk Reduction and Reconstruction - Outcome and Challenges of “Iwate Reconstruction Education” Program

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E-mail: aktsuchi@iwate-u.ac.jp

Key Words: Reconstruction Education, Teacher Training, Community, Safety Management, Disaster Risk Deduction Education

Great East-Japan Disaster that caused tremendous casualties and changed lives of many has posed a question on safety management system and education itself in schools. Since children spend time together and develop themselves mentally and physically in schools, teachers are expected to have a high level of awareness to be able to “protection of children’s lives” and to equip students with knowledge and skills to “protect oneself.”

Great East-Japan Disaster also caused devastating damage to local community. Tsunami following earthquakes not only took lives and buildings but also traditions and ties that people had fostered, which put continuation of local communities at risk. That is why school that is one of the symbolic institutions of local community has been expected to play a key role in rebuilding and revitalization of local community, in another word, “reconstruction.”

Faculty of Education, Iwate University has started an intensive course “Iwate Reconstruction Education” in 2013 following the development of the program, by the Iwate Prefectural Board of Education, which aims to inherit memories of the disaster and to contribute to create future-oriented society. The course intends to train students who hope to be teachers to be future leaders of education on reconstruction and disaster risk reduction. This report aims to share concrete contents, outcomes and challenges of the course.
1. Post-Disaster Educational Challenges

(1) School-related Damages in Iwate

1. Loss of and Damages to Human Lives

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2. Physical Damages

- prefectural schools: 73
- municipal schools: 374

reference: Iwate Prefectural Board of Education
1. Post-Disaster Educational Challenges

(2) Expectation towards Schools and Teachers

① Protecting Children’s “Lives”
- Raise awareness of and train teachers on DRR
- Raise awareness of children on safety

② Contributing to Community Support
- Revitalize local community from schools
- Interest children into local community

(3) What Iwate Prefectural Board of Education Has Been Doing “Iwate Reconstruction Education” Program

Objective: Educate future generation who would lead local community’s reconstruction and development

Valued educational element
① about life and mind
② about humans and local community
③ about DRR and safety
2. Intensive Course
“Iwate’s Reconstruction Education”

(1) Course Objectives
① To be able to educate students on DRR and reconstruction as a teacher

② To be able to raise one’s awareness on DRR education and willingness to contribute to reconstruction of disaster-affected community

(2) Course Contents
① Lectures
DRR education
Structure of Iwate Prefectural Board of Education
Natural disaster mechanism
Psychological care etc.

② On-site
Visiting disaster-affected community
Visiting educational Facilities (include schools)

2. Intensive Course
“Iwate’s Reconstruction Education”

On-site in 2014
2014
Miyako-shi
Tide wall (tour of Taro)
School for special needs education
Junior high school

Yamada-machi
Temporary shopping district
Elementary school
Social educational facility

Morioka-shi
Iwate Univ.

Miyako-shi
Yamada-machi
3. Outcomes and Challenges

(1) Participants
19 students (capacity: approx. 20) in 2013
23 students (capacity: approx. 40) in 2014

(2) Outcomes
① Understanding DRR and Reconstruction education
   Significance of DRR education
   Understanding DRR education

② Understanding Natural Disaster Mechanism
   Significance of teachers’ understanding
   Importance of having children understand

③ Understanding the Situation of Disaster-affected Area and Role of Schools
   Role of schools in local community
   Practices
3. Outcomes and Challenges

(3) Challenges

① Time
Pros and cons of extensive course

② Students’ interest
Need to widely attract students’ interest
Industry Reconstruction

Post-Catastrophe Rehabilitation of Fisheries in Iwate

Syuiti Abe (Iwate University)
E-mail : sabe47@iwate-u.ac.jp

Key Words : Tsunami Disaster, Fisheries Promoter, Salmon Research and Education

A massive earthquake and devastating tsunami destroyed many fishing villages and towns on March 11, 2011. Soon after the catastrophe, Iwate University instituted the university-wide Organization for Revitalization of the Sanriku-Region and decided to establish a new Graduate School of Fisheries Science in spring 2017 to promote rehabilitation of the fisheries industry in Sanriku. In April 2013 Iwate University established the Sanriku Fisheries Research Center (SFRC) in Kamaishi, one of five cities on the coast, as a center of fishery education and research in the Sanriku region. The Center (1,900 m²) is two-story building with wet laboratories for fish rearing and processing on the first floor and dry laboratories for molecular biosciences and food sciences on the second floor. The SFRC will become a center for education and research of fisheries science in our new graduate school and undergraduate course. As chum salmon is the main fishery species of the Iwate coast, all the coastal fishery cooperatives rely on salmon catches, which is more than half of the annual revenue in each cooperative. Therefore, it is clear that rehabilitation of the fisheries industry in Iwate depends heavily on recovery of the chum salmon fishery. The SFRC aims to help sustain the chum salmon fishery by conducting genetic identification of major stocks, if any, which chiefly contribute to salmon returns. If such stocks are found, then we can propose an effective resource management plan for those stocks, which will help improve current hatchery operation and optimize the salmon enhancement strategy in Iwate and other prefectures in Sanriku. Besides these investigations, we plan to nurture students to work in fisheries industries and related sectors as a "fisheries promoter", who is capable of overlooking the whole system of aquatic food supply with an expertise of one or more fields, such as fishing, aquaculture, processing, economics, or marketing. A fisheries promoter is expected to help stimulate fisheries innovation, such as direct marketing by fishermen themselves. With help of a promoter, for example, salmon and its processed products will have more commercial value than before, and hence this will accelerate rehabilitation of salmon fisheries and local societies hit by the tsunami. Thus, we will set salmon as one of the major targets of research and education in the new graduate school and undergraduate course at Iwate University.
Industry Reconstruction: Post-Catastrophe Rehabilitation of Fisheries in Iwate

Syuiti Abe

Sanriku Fisheries Research Center
Iwate University

at the 3rd UN World Conference on Disaster Risk Reduction
601 Room, Tokyo Electron Hall Miyagi, Sendai
March 18, 2015

Sanriku-Iwate region

Rias coast ~100km

Goishi coast

Kitayama cape

Oyashio cold current

Kuroshio warm current

One of the world’s 3 largest fishing grounds

Unosu clif

Jodogahama beach
Fisheries resources in Iwate: many species but low abundance

Decreasing catches of most species: 40% of catches in 1980s

Where have the abalones gone?

Production ranking of major fisheries resources in Japan
(2010 statistics report, Ministry of Agriculture, Forestry and Fisheries)

Iwate is one of Japan’s leading fisheries Prefectures
Fisheries damages after the 3.11 tsunami

Total amount of damage: 1,263.7 billion ¥ (7 Prefectures; 1,254.4 billion ¥)

<table>
<thead>
<tr>
<th>Damage</th>
<th>All over Japan</th>
<th>7 Prefectures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Amount (billion ¥)</td>
</tr>
<tr>
<td>Port facilities</td>
<td>319</td>
<td>823</td>
</tr>
<tr>
<td>Fishing boats</td>
<td>28,612</td>
<td>182.2</td>
</tr>
<tr>
<td>Mariculture (facilities)</td>
<td>1,725</td>
<td>133.5 (73.8)</td>
</tr>
<tr>
<td>(fishes)</td>
<td></td>
<td>(59.7)</td>
</tr>
<tr>
<td>Common facilities</td>
<td></td>
<td>124.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,263.7</td>
<td>1,254.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prefecture</th>
<th>No. of damaged ports</th>
<th>Amount (million ¥)</th>
<th>No. of ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hokkaido</td>
<td>12</td>
<td>1,259</td>
<td>282</td>
</tr>
<tr>
<td>Aomori</td>
<td>18</td>
<td>4,617</td>
<td>92</td>
</tr>
<tr>
<td>Iwate</td>
<td>108</td>
<td>285,963</td>
<td>111</td>
</tr>
<tr>
<td>Miyagi</td>
<td>142</td>
<td>424,286</td>
<td>142</td>
</tr>
<tr>
<td>Fukushima</td>
<td>10</td>
<td>61,503</td>
<td>10</td>
</tr>
<tr>
<td>Ibaragi</td>
<td>16</td>
<td>43,118</td>
<td>24</td>
</tr>
<tr>
<td>Chiba</td>
<td>13</td>
<td>2,204</td>
<td>69</td>
</tr>
<tr>
<td>Total</td>
<td>319</td>
<td>823,040</td>
<td>730</td>
</tr>
</tbody>
</table>
### Mariculture damage in Japan after the 3.11 tsunami (Fishery Agency)

<table>
<thead>
<tr>
<th>Pref.</th>
<th>Damaged mariculture items</th>
<th>Dam. facil. (million ¥)</th>
<th>Dam. items (million ¥)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hokkaido</td>
<td>scallop, oyster, sea urchin, konbu, wakame.....</td>
<td>9,356</td>
<td>6,774</td>
</tr>
<tr>
<td>Aomori</td>
<td>konbu, scallop....</td>
<td>43</td>
<td>19</td>
</tr>
<tr>
<td>Iwate</td>
<td>scallop, oyster, konbu, wakame.....</td>
<td>13,017</td>
<td>1,174</td>
</tr>
<tr>
<td>Miyagi</td>
<td>coho salmon, scallop, oyster, squirt, konbu, wakame, nori....</td>
<td>46,700</td>
<td>33,169</td>
</tr>
<tr>
<td>Fukushima</td>
<td>nori.....</td>
<td>227</td>
<td>536</td>
</tr>
<tr>
<td>Ibaragi</td>
<td>carp, pearl.....</td>
<td>27</td>
<td>—</td>
</tr>
<tr>
<td>Chiba</td>
<td>nori.....</td>
<td>428</td>
<td>737</td>
</tr>
<tr>
<td>Kanagawa</td>
<td>wakame.....</td>
<td>433</td>
<td>322</td>
</tr>
<tr>
<td>Niigata</td>
<td>nishiki (ornamental) carp.....</td>
<td>4</td>
<td>—</td>
</tr>
<tr>
<td>Mie</td>
<td>red sea bream, bluefin, oyster, nori, pearl.....</td>
<td>1,274</td>
<td>2,955</td>
</tr>
<tr>
<td>Aichi</td>
<td>nori.....</td>
<td>2</td>
<td>—</td>
</tr>
<tr>
<td>Wakayama</td>
<td>red sea bream, bluefin,...</td>
<td>141</td>
<td>834</td>
</tr>
<tr>
<td>Tottori</td>
<td>Yellowtail, hamachi, yellow jack, wakame.....</td>
<td>65</td>
<td>608</td>
</tr>
<tr>
<td>Kochi</td>
<td>Yellowtail, red sea bream, nori.....</td>
<td>225</td>
<td>2,877</td>
</tr>
<tr>
<td>Oita</td>
<td>Yellowtail, hamachi, yellow jack, hirame.....</td>
<td>85</td>
<td>175</td>
</tr>
<tr>
<td>Miyazaki</td>
<td>hamachi, horse mackerel, croaker....</td>
<td>6</td>
<td>—</td>
</tr>
<tr>
<td>Okinawa</td>
<td>mozuku, sugi.....</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>73,775</strong></td>
<td><strong>59,745</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Damaged fish processing facilities in 7 Prefectures

<table>
<thead>
<tr>
<th>Pref.</th>
<th>Damage</th>
<th>Amount (million ¥)</th>
<th>No. facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hokkaido</td>
<td>Half collapsed 4, flooded 27</td>
<td>100</td>
<td>570</td>
</tr>
<tr>
<td>Aomori</td>
<td>Coll. 4, half coll. 14, flooded 39</td>
<td>3,564</td>
<td>119</td>
</tr>
<tr>
<td><strong>Iwate</strong></td>
<td>Collapsed 128, half collapsed 16</td>
<td>39,195</td>
<td>178</td>
</tr>
<tr>
<td>Miyagi</td>
<td>Coll. 323, half coll. 17, flooded 38</td>
<td>108,137</td>
<td>439</td>
</tr>
<tr>
<td>Fukushima</td>
<td>Coll. 77, half coll. 16, flooded 12</td>
<td>6,819</td>
<td>135</td>
</tr>
<tr>
<td>Ibaragi</td>
<td>Coll. 32, half coll. 33, flooded 12</td>
<td>3,109</td>
<td>247</td>
</tr>
<tr>
<td>Chiba</td>
<td>Coll. 6, half coll. 13, flooded 12</td>
<td>2,931</td>
<td>420</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Coll. 570, half coll. 113, flooded 140</strong></td>
<td><strong>163,855</strong></td>
<td><strong>2,108</strong></td>
</tr>
</tbody>
</table>

- Decrease in production
- Raising market prices
- Increase of imported fishes
- ...... price down of domestic fishes
Rehabilitation of fisheries in Iwate

Table 1. Rehabilitation of fisheries in Iwate (by March 2014; Fishery Agency)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Outline of rehabilitation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fishing Catches</td>
<td>97.6 x10^9 tons (70% of 2010)</td>
<td>Kuji, Miyako, Kamaishi, Ofunato</td>
</tr>
<tr>
<td>Amounts</td>
<td>164.5 billion (85% of 2010)</td>
<td></td>
</tr>
<tr>
<td>Ports</td>
<td>67 among 108 ports damaged (62%)</td>
<td>Port function totally recovered</td>
</tr>
<tr>
<td>Fishing boats</td>
<td>8,475 among 13,271 boats lost (64%)</td>
<td>with and without engine-boats</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>Wakame 16,062 tons (85% of 2010)</td>
<td>Oyster culture production remains low</td>
</tr>
<tr>
<td></td>
<td>Konbu 6,341 tons (49% of 2010)</td>
<td></td>
</tr>
<tr>
<td>Market and processing</td>
<td>13 fish auction markets (100%),</td>
<td>Safety rebuilding banned partly due to ground subsidence</td>
</tr>
<tr>
<td>facilities</td>
<td>166 among 178 facilities damaged (93%)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. No. of set nets operated in Iwate (by February 2014; Iwate Pref.)

<table>
<thead>
<tr>
<th>Set nets type</th>
<th>Kuji</th>
<th>Kamaishi</th>
<th>Ofunato</th>
<th>Total</th>
<th>Licensed</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>18</td>
<td>26</td>
<td>13</td>
<td>74</td>
<td>78</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 unoperated</td>
</tr>
<tr>
<td>Small</td>
<td>16</td>
<td>10</td>
<td>3</td>
<td>35</td>
<td>37</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 unoperated</td>
</tr>
<tr>
<td>Licensed</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 unoperated</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>36</td>
<td>16</td>
<td>109</td>
<td>109</td>
<td>135</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10 unoperated</td>
</tr>
</tbody>
</table>

Constitutional Problems of Fisheries in Iwate

1. Decrease and aging of fishery workers
   (>60 of age: 60%)
2. Small fishery business
   (privately run: 90%)
3. Decrease and low price of coastal fishes
   (catch decrease: 40% of 1980s)
4. Safety of fishery products
   (marine pollution, nuclear plant accident)
5. Fewer types of higher processed items
6. Weak sales and naïve marketing strategy
7. Fewer leaders in fishery business

(Iwate Prefecture)

... Catastrophe further accelerated these trends
An action plan of Organization of Revitalization for Sanriku-Region

(An university-wide organization instituted in April 2012)

II

to support the smooth recovery and reconstruction of Iwate Prefecture

(1) Education support
(2) Community life support,
(3) Promotion of fisheries industry reconstruction
(4) Promotion of manufacturing industry reconstruction
(5) Promotion of agriculture, forestry and livestock industries reconstruction
(6) Education and research on regional disaster prevention

A new graduate school of fisheries sciences at Iwate University beginning in spring 2017

Also, undergraduate fisheries education course in Faculty of Agriculture

for promotion of sustainable fishery and reconstruction of fisheries industries on the Sanriku coast

Fisheries Promoter

capable of overlooking the whole system of aquatic food supply with an expertise of one or more fields

Sustainable fishery = effective resource management

TAC : from Olympic game system to IQ or IVQ system

Reconstruction of fisheries industries = new products, new sales strategy, direct marketing by fishermen
Sanriku Fisheries Research Center, Iwate University
A center for education and research of fisheries science

Heita, Kamaishi, Iwate Pref., established April, 2013.
Main facilities including aquaculture equipments, fish processing machineries, and biological research equipment. 1,900m², wet and dry labs on each floor

Research outline at SFRC, Iwate University

- Improvement of fishing environment and fishery Information platform
- Development of aquaculture technology
- Sustainable fisheries In Sanriku-Iwate
- Enhancement and aquaculture of salmon resources
- Molecular mechanisms of salmon thermal tolerance
- Analysis of genetic characteristics
- Biomass & resource estimation
- Practical application of aquaculture technology
- Estimation of genetic diversity
- Development of seed production technology
- Validation of stocking effect
- Closed circulation land farming system
Change in the number of chum salmon caught in Iwate (river+coast)

Fish catch amount in Iwate (2013)

No. of fish caught (x10^3) vs. Year

(Iwate Pref.)

Salmon genetic (DNA) analysis at SFRC

Salmon fin collection at hatchery

Salmon fin collection at fish auction market

DNA extraction from fins

DNA sequence reading
Collection sites and run timing (2012)

3,500 fish of 40 populations from 24 locales (hatcheries)

Genetic population structure of chum salmon in Iwate

Three subgroups of early-run, late-run and Kitakami River homing chum in Iwate
Summary of salmon genetic analysis

Genetic features of chum salmon in Iwate

1. Differentiation from chum salmon in Hokkaido and other regions, with comparable genetic diversity
2. Three subgroups of early-run, late-run and Kitakami River
3. Differentiation among early-run populations but not among late-run populations
4. Differentiation among Kitakami River tributaries

Problems in current hatchery operation of Iwate

1. Hatchery location (within 5km from river mouth)
2. 4 billion fry release every year without scientific data
3. Seed (fertilized egg) exchange between hatcheries
4. Egg collection from coastal catches of unknown origin

Salmon genetic analysis for resource enhancement

Proposal of effective management plan for salmon conservation, sustainable fishery and novel salmon enhancement technology
Matsuri as a heritage of fishery village culture in Sanriku

Revitalize regional communities by Innovation of fisheries industries
Leadership Development for Disaster and Crisis Management

Shin Koshiya (Iwate University)
E-mail: koshiya@iwate-u.ac.jp

Key Words: enlightenment activity for disaster management, disaster management leader, teaching materials for disaster prevention, disaster crisis management

We have implemented the “Disaster Management Leader” training program to support local communities, the development of teaching materials for disaster prevention to support preliminary and junior high school teachers, and practical and training courses for disaster crisis management to support local governmental staffs. These activities by the Research Center for Regional Disaster Management, Iwate University, will be reported.

1. “Disaster Management Leader” training program
This program has been conducted for ordinary people in local communities on alternate Saturdays, from May to December since 2007. The subjects of lectures in the program include fundamentals of physics and geology to understand natural disasters, mechanism and characteristics of disaster due to earthquake, tsunami, flood, volcanic eruption and slope collapse, disaster-resilient community development, and disaster crisis management. Students are able to study the damage in the devastated area by the Great Tohoku Earthquake and Tsunami in 2011. They have to make presentations about subjects that are chosen for their own disaster management activities, and will be qualified as “Disaster Management Leader” through the presentations.

2. Development of teaching materials for disaster prevention
We have been developed teaching materials about disaster prevention for preliminary and junior high school students and teachers since 2006. The new digital teaching materials, stored in two DVDs, have been accomplished in 2014, which include photographs, animations, hazard maps, computer graphics, tables and figures to study natural disasters, their mechanisms, and countermeasures to them.

Although many teaching materials for disaster prevention have already made by various institutes, most of them have not been used for education. To improve this situation, we have done enlightenment activities such as lectures and training courses on disaster management for teachers with these DVDs.

3. Practical and training courses for experts in disaster and crisis management
Kinds of trainings are necessary for disaster crisis management. Methodology and know-how for doing such trainings, however, have not been sufficiently known in many
organizations such as local governments and companies. We have implemented practical and training courses for experts in disaster and crisis management to support staffs in the organizations.

These courses include lectures about natural disaster and crisis management, and practical training such as disaster image training, disaster imagination game and role-playing training in a disaster countermeasure office.
Leadership Development for Disaster and Crisis Management

Shin Koshiya
Research Center for Regional Disaster Management
Iwate University

Contents

- Program for Leadership Development in Local Communities
- Teaching Materials for Preliminary and Junior High School Students
- Program for Practical Expertise Development
### Why is leadership development for disaster management important?

**Workshop in a local community for tsunami disaster management (2005-2006)**

<table>
<thead>
<tr>
<th>Many residential houses in a narrow area surrounded by sea and steep slopes</th>
<th>No seawall in the area</th>
</tr>
</thead>
</table>

**One of the most dangerous areas for tsunami**

---

**Flow of WS**

1. **1st WS**
   - Understanding the degree of the danger by tsunami and the evacuation system

2. **2nd WS**
   - Discussion on tsunami disaster countermeasures

3. **3rd WS**
   - Action Plan

[Computer simulation showing inundation due to 1896 tsunami]

---
After WS
People living in the community have maintained evacuation roads by themselves.
“Disaster Management Leader” Training Program to Support a Local Community for the Public (2007-)

<table>
<thead>
<tr>
<th>Curriculum:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Lecture:</td>
</tr>
<tr>
<td>Physics and Geology</td>
</tr>
<tr>
<td>Thematic Lecture:</td>
</tr>
<tr>
<td>Earthquake</td>
</tr>
<tr>
<td>Tsunami</td>
</tr>
<tr>
<td>Flood</td>
</tr>
<tr>
<td>Volcanic Eruption</td>
</tr>
<tr>
<td>Slope Disaster</td>
</tr>
<tr>
<td>Disaster-resilient Community Development</td>
</tr>
<tr>
<td>Disaster Crisis Management</td>
</tr>
<tr>
<td>Exercise</td>
</tr>
<tr>
<td>Excursion to disaster-affected areas</td>
</tr>
<tr>
<td>Collection information</td>
</tr>
<tr>
<td>Presentation</td>
</tr>
</tbody>
</table>

Course fee: Free
On alternate Saturdays, from May to December
Excursion to disaster-affected areas by the Great Tohoku Tsunami in 2011
2011.10.15

Presentation = Certificate Examination
The Development of Teaching Materials for Disaster Prevention and Mitigation

New Version in 2014

Teaching Materials for Disaster Prevention
published by
Iwate Prefectural Government
RCRDM, Iwate University
with the cooperation of
Iwate Prefecture Board of Education

DISK 1
  Part 1: Earthquake
  Part 2: Tsunami
DISK 2
  Part 3: Volcanic Eruption
  Part 4: Landslide
  Part 5: Practical Examples
Part 1: Earthquake

- History
- Seismic Damage
- Mechanism
- Seismic Movement
- Earthquake Early Warning
- What to do during an earthquake
- Countermeasure before an Earthquake
- Information Collection
- Card Game for Disaster Prevention
- List of WEB sites
Reader (Right card): “Make sure of your evacuation route by foot.”
Players: To find the suitable card (left card) and get it.

---

Part II: Tsunami

- Mechanism
- Characteristics
- History of Tsunami Disaster
- Videos and Photographs
- CG
- Tsunami and Fire
- Inundation Prediction Map
- Disaster Management
- Picture-story Show
- Disaster and Rescue
- Record of the Great Tohoku Earthquake and Tsunami in 2011
Many teaching materials have been made by many institutes, but to use them practically in schools is important.

- Lecture and exercise for preliminary and junior high school teachers
Practical Course and Training Course for Experts in Disaster Crisis Management

To support Local Government Staffs

Training methods for Disaster Crisis Management

Cost

Difficult

Easy

Training for disaster imagination

Training for disaster countermeasure

Role-playing Training

MM

Map Maneuver

D I G

Disaster Imagination Game

Disaster Image Training

Cross-road Game

Knowledge and Ability for Disaster Management

Beginner

Expert
Exercises

Disaster Image Training

Disaster Visualization Game (DIG)

Cross-road Game

Map Maneuver

Thank you for your attention

Research Center for Regional Disaster Management
Iwate University
Natsumi Onaka

Natsumi Onaka is an Associate Professor at Iwate University International Education Center. Her responsibilities include implementing student exchange programs, managing short-term content-based international programs, counseling students for study abroad, and developing study abroad preparatory programs. She has also organized an English Camp Program as educational support for the junior high school students from the disaster affected areas, which is held each year.

Masaaki Minami

Professor Minami is the Director of Research Center for Regional Disaster Management at Iwate University. He holds a B.S., M.S. and Ph.D from Hokkaido University. He held a variety of reconstruction-related advisory positions in local governments at Iwate region, most recently serving as a chair for committee of Tsunami preparedness affairs in Iwate prefecture. He established a small meeting space nearby temporary houses at Taro disaster area in Mar. 11, 2012.

Junichi Hirota

Dr. Hirota is a Professor of Faculty of Agriculture, Iwate University. He completed the Graduate School of Tokyo University (Ph.D). His major is rural planning and natural resource management. In 2005, he established an NPO, Iwate Support Center for Community Development as the chief director. After the Great East Japan Earthquake, he joined the sectional meeting committee of the Great East Japan Earthquake disaster revival design meeting Committee specialized in a general plan of Iwate prefecture, and etc. His publications include "Rural Planning" (2003), "Conservation of Biodiversity and Environmental Policy" (2005), and "Reconstruction of agriculture, forestry, fishery, and local communities" (edited by Japanese agriculture society, 2013).

Masako Okuno

Masako Okuno Ph.D. is an Associate Professor in the Faculty of Humanities and Social Sciences at Iwate University since April 2013. She received a doctoral degree in Education at Tohoku University Graduate School after working as a pharmacist. She has been devoting professional attention as a clinical psychologist to support people in the field of education and clinical practice. Her specialty is clinical psychology, especially family psychology and communication. Her publications include "A study of clinical psychology about consensual communication by experts".
Makoto Sasaki

Makoto Sasaki is Extraordinary Associate Professor in Iwate University Organization of Revitalization for Sanriku-region since March 2012. He received a master degree in Social Welfare at Iwate Prefectural University after working as a middle school educator. He has been devoting professional attention as a school counselor to support people. In 2011, he joined in a team of the Iwate Board of Education to accommodate for the East Japan Great Earthquake and Tsunami. His specialty is clinical psychology. "School clinical psychology and regional assistance Advanced Course" (Osamu Kuramitsu, 2013 plan, The Society for the Promotion of the Open University of Japan) Chapter 13 of the "emergency assistance," he shared writing.

Akihiro Tsuchiya

Akihiro Tsuchiya is an Associate Professor of Sociology of Law and Education System in the Faculty of Education, Iwate University since 2007. He was awarded his Ph.D. (Laws) from Kyushu University in 2006.

Syuiti Abe

Dr. Abe is the Deputy Director of Sanriku Fisheries Research Center, Iwate University. He holds a D.Sc. in Zoology from Hokkaido University. Prior to the current position, he worked as an Associate Professor at Faculty of Science and Center for Advanced Science and Technology, Hokkaido University, and a Professor at Graduate School of Fisheries Sciences, Hokkaido University. He has nearly 40 years research and educational experiences in cytogenetics, molecular genetics and genomics of vertebrate specializing in fish and mammals.

Shin Koshiya

Dr. Koshiya is an Associate Professor in Department of Civil and Environmental Engineering, Faculty of Engineering, and the Deputy Director of the Research Center for Regional Disaster Management, Iwate University. He holds a Doctor of Science from Tohoku University. He specializes in Geology. His subjects of research are the geological structure of active faults in and around the Ou Back-bone Range, the volcanic history of Mt. Iwate, and the shallow geological structure in the Kitakami Lowland, northeast Honshu, Japan. His publications include "The Geology of Japan 4, Tohoku District" (collective writing, Kyoritsu Shuppan).

Katsumi Matsuoka

Matsuoka is the Professor of Law (2003-) and the adjunct Professor of Research Center for Regional Disaster Management (2012-), Iwate University. He holds PgD from University of Wales and PhD from Soka University at Tokyo. Prior to the current positions, he was the Professor at Fuji University and a visiting fellow at University of Cambridge. Since GEJE, he has been engaged in various activities for reconstruction and served on advisory committees in afflicted areas.
Tetsuo Kondo

Mr. Tetsuo Kondo assumed his current position as Director, UNDP Representation Office in Tokyo, in January 2014. Prior to this, he was serving as Country Director, UNDP Chad (2010–2013), Deputy Resident Representative UNDP Kosovo (2007–2010). He also served as Senior Advisor, UNDP Regional Centre in Bangkok (2005–2006), UNDP New York (2001–2004). Before joining UNDP, he held various positions with the Ministry of Foreign Affairs of Japan (MoFA). Mr. Kondo holds a Masters-equivalent degree from Jones International University, USA and a B.A. in Economics from Tokyo Metropolitan University, Japan. He currently also serves as an Adjunct Professor (Global Health Policy) at the University of Tokyo (2011–).

Akihiko Hokugo

Professor Hokugo is the Director of Research Center for Urban Safety and Security of Kobe University since April 2014. He holds Ph.D in Environmental Science from Kobe University. He has been conducting research activities on Fire Safety and Disaster Management at Institute for Fire Safety and Disaster Preparedness (1985–1990), Building Research Institute of Ministry of Construction (1990–1997) and Kobe University (1997–). He has been serving on the board of Japan Association for Fire Science and Engineering and Japan Society for Disaster Recovery and Revitalization.

Makoto Okumura

The 3rd UN World Conference on Disaster Risk Reduction
Iwate University Public Forum

“Resilience of Local Community and Capacity Building by Iwate University”

Date & Time: 18 March 2015 (Wed) 9:20-11:40 (Open 9am)
Venue: 601 Room, Tokyo Electron Hall Miyagi, Sendai City

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