



Munenari INOBUCHI, Ph.D.

Assistant Professor

Program: Environmental Science and Technology

Area: Natural Disaster and Environmental Science

Research Institute for Natural Hazards and Disaster Recovery

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Professional Expertise

1) Design and Development of Information Management System Using GIS

My major is designing and developing information management system for effective disaster response, and I focus on the preparedness for disaster management, not the mitigation. Especially, I always utilize GIS (Geographic Information System) for information management. Followed by the changes of information communication technology toward “Cloud Service”, I also try to design and develop “Cloud-based GIS Services” as the way of information integration and provision.

2) Modeling Workflow of Effective Disaster Management under Constraints of Resources

I developed “Business Flow Diagram” which can analyze the workflow of disaster response from the view point of constraints of information, activity space, human-resource and physical-resource in order to design the effective information management system. Many kinds of agencies, such as city/prefecture offices and public work companies, used this analysis method for reviewing their business continuity management. Recently I developed the web-based application which enables any user to his analysis method on web-browsers. Any agencies analyze their business continuity management without any software installation.

Research Fields of Interest

Since I am interested in the actual disaster management, I always proceed my research in the way of “Action Research”. Action Research was proposed by Kurt Levin, who was a German-American psychologist, known as one of the modern pioneers of social, organizational, and applied psychology. Whenever some kinds of disaster occur, I visit the impacted area, analyze their work flow and design the information management system fitting in best with the actual situation of local response. Recent my activities are described below.

- Apr. 2011 – up to now: Developing the standardized Victims Master Database integrating any kinds of information held by affected local governments in Iwate Prefecture on the web at the 2011 off the Pacific coast of Tohoku Earthquake.
- Mar. 2011 – Apr. 2011: Responsible as an on-the-spot team leader of Emergency Mapping Team in Cabinet Office of Japan at the 2011 off the Pacific coast of Tohoku Earthquake.
- Jul. 2007 – Mar. 2011: Responsible as a manager of system designing and developing team for Victims Master Database for effective and rational disaster response to the Niigata-ken Chuetsu-oki Earthquake in 2007.
- Jul. 2007 – Aug. 2007: Responsible as a team leader of Emergency Mapping Center in Niigata Prefecture to develop Common Operational Pictures for effective disaster response to the Niigata-ken Chuetsu-oki Earthquake in 2007.
- Mar. 2007 – Jul. 2007: Responsible as a manager of supporting team for victims’ life reconstruction process using GIS at Noto Hanto Earthquake in 2007.
- Jan. 2005: Providing and developing the maps of damage situation using GIS in web-based

platform at Indian Ocean Earthquake and Tsunami in 2004.

Education

2008: Ph.D. in Informatics, Graduate School of Informatics, Kyoto University, Japan

2005: M.S. in Informatics, Graduate School of Informatics, Kyoto University, Japan

2003: B.S. in Engineering, Undergraduate School of Global Engineering, Kyoto University, Japan

Professional Societies and Activities

1. The Institute of Electronics, Information and Communication Engineers
2. Institute of Social Safety Science
3. Japan Society of Civil Engineering
4. Japan Society for Natural Hazard Disaster Science
5. Japan Society for Disaster Information Studies
6. Japan Emergency Management Association
7. Japan Association for Earthquake Engineering

Awards

1. Jun. 2009: Obtained Encouragement Prize Paper Award from Institute of Social Safety Science

Major Publications

Papers

[1] "Implementation of Web-based Victims Master Database Management System for Effective Life Reconstruction at Wide-spread Disaster - Challenge of Iwate Prefecture at the 2011 Great East Japan Earthquake -", Journal of Institute of Social Safety Science, No.18, pp.351-361, 2012.

[2] "Structure of Web-Based Victims Master Database of the Life Rebuilding Process -A Study of the Great East Japan Earthquake of 2011-", 15th World Conference on Earthquake Engineering Proceedings, CD-ROM(8pp.), 2012.

[3] "Visualization Methods and Associated Challenges of Disaster Data for Common Operational Picture - A Case Study of the 2011 Great East Japan Earthquake based on the Activities of Emergency Mapping Team of the Cabinet Office -", Journal of i-society 2012, CD-ROM (5pp.), 2012.

[3] "How to Construct the Common Operational Pictures with Dynamic Maps Using the Mashup Technology - EMT at National and Municipal Level in 2011 Great East Japan Earthquake", Proceedings of TIEMS (The International Emergency Management Society) Japan Chapter, pp.8, 2012.

[4] "VISUALIZATION OF VICTIMS STATUS IN LIFE RECOVERY PROCESS USING GIS", Proceedings of the International Emergency Management Society (TIEMS) 17th Annual Conference, pp.327-338, 2010.

[5] "Development of Practical Disaster Response Manual based on the Framework of Project Management - A Case Study of Emergency Shelter Management Plan of Shibata City, Niigata -", Journal of Japan Society of Civil Engineering (Committee of Safety Problems), Vol.5, pp.229-234, 2010.

[6] "Administrative Workload Analysis of Supporting Victims Life Recovery based on Victim Master Database - A Case Study of Kashiwazaki City at 2007 Niigataken Chuetsu-oki Earthquake -", Journal of Institute of Social Safety Science,

No.13, pp.453-462, 2010.

[7] "Realization of Effective Disaster Victim Support by Development of Victims Master Database with geo-reference -A case study of 2007 Niigataken Chuetsu-oki Earthquake -", Journal of Disaster Research, Vol.5, No.1., pp.12-21, 2010.

[8] "How should local government integrate the information of affected people to support their life recovery continuously and effectively? - A case study at Kashiwazaki City, Niigata, Japan -", 14th World Conference on Earthquake Engineering Proceedings, CD-ROM (8pp.), 2008.

[9] "Development of Logistic Estimation System based on HAZUS Damage Estimations for Rational and Effective Decision Making in Disaster Response", 2nd International Conference on Urban Disaster Reduction Proceedings, CD-ROM (6pp.), 2007.

[10] "Development of Business Flow Definition Procedure by Means of the Collaboration between Client and System Engineers for Design Requirements of Disaster Response Support System - A Case Study at Nara Prefecture Government -", Journal of Institute of Social Safety Science, No.8, pp.173-182, 2006.

Book Chapters

[1] Inoguchi, M. 2008. "Introduction of Organizational Risk Management", Maruzen Publishing Co., Ltd., pp.30-42, pp.43-56, pp.143-153.

[2] Inoguchi, M. 2012. "Dictionary of Japan Historical Disaster", Yoshikawa Kobunkan, pp.738-741.