

Japan's Response to 3/11: Eight Lessons for Disaster Risk Management

日本における3・11の災害対応: DRMへの8つの教訓

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Washington, DC

リオ ボズナー

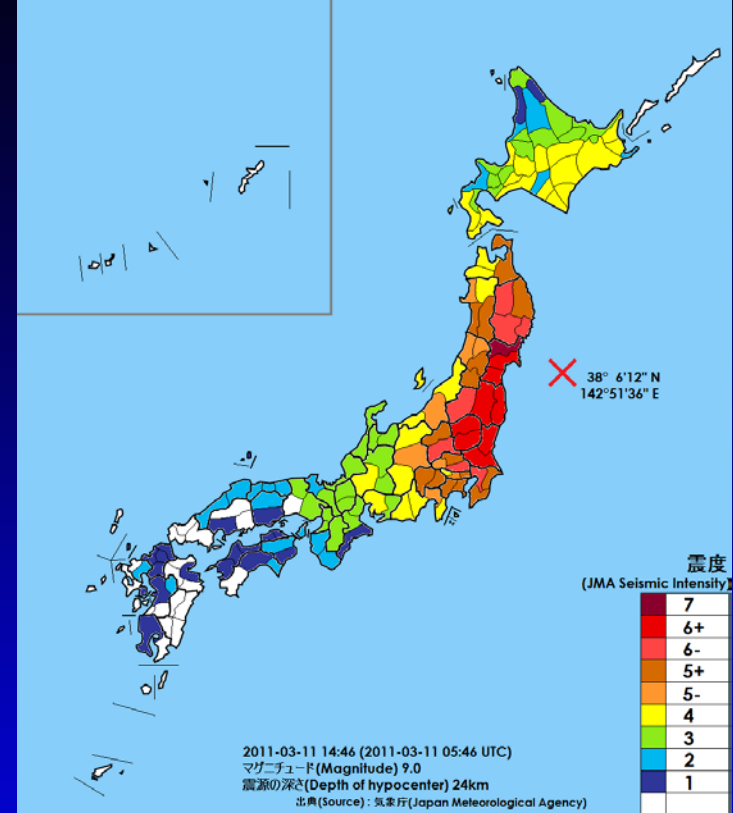
グローバルレジリエンス研究所 研究員

2013年5月10日、ブルッキングス研究所

ワシントン DC



Map of Japan from worldatlas.com



Seismic intensity on 3/11 - Japan Meteorological Agency

The epicenter was about 300 km (200 mi) from Tokyo, but the shaking could still be felt in Tokyo.
 地震の震源地は東京から300kmぐらい。東京でも地震を感じる事ができました。







Interior of damaged hospital, Iwate Pref, Jan. 2012,
Photo by Leo Bosner

In 2012 returned to Japan for 6 weeks

2012年来日、6週間滞在

Japan Society for Promotion of Science
(JSPS) Fellowship

日本学術振興会のフェローシップ

Sponsor was Kanagawa University

スポンサーは神奈川大学

Purpose: Study the 3/11 disaster response

目的は3・11災害対応の研究

Visited...訪問先

横浜・Yokohama

東京・Tokyo

盛岡・Morioka (Iwate Prefecture)

大船渡・Ofunato City (Iwate Prefecture)

釜石・Kamaishi (Iwate Prefecture)

仙台・Sendai (Miyagi Prefecture)

石巻・Ishinomaki (Miyagi Prefecture)

静岡・Shizuoka

松本・Matsumoto

神戸・Kobe

久留米・Kurume

金沢・Kanazawa

Met with...インタビュー

日本政府の職員・Japan Government staff
県の職員・Prefectural Government staff
市の職員・Municipal Government staff
自衛隊・Japan Self Defense Force (JSDF)
非営利団体・Non-Profit Organizations (NPOs)
医療・Medical personnel
消防・Fire Service personnel
大学の教授・University professors
会社・Private sector company members
ボランティア・Individual disaster volunteers



Damaged hospital, Iwate Prefecture, January, 2012. Photo by Leo Bosner

For More Information:

もっと詳しい情報はこちらをご参照ください



In English:

<http://www.japanfocus.org/-Leo-Bosner/3754>

The Asia-Pacific Journal: Japan Focus



日本語:

<http://risktaisaku.com/sys/magazine/?p=000008>

リスク対策

For More Information:

もっと詳しい情報はこちらをご参照ください



“Great Eastern Japan Earthquake, March 11, 2011”
May 2011

David Rubens Associates, London, England
<http://www.davidrubens-associates.com/>

Eight Lessons for DRM

DRMへの8の教訓

1. In time of disaster, be truthful and accurate in communicating with the public – “Risk Communication.”



1. 災害発生時、誠実かつ正確に国民とコミュニケーションをするー“リスク・コミュニケーション。”

Eight Lessons for DRM

DRMへの8の教訓

2. Simple warning systems can save lives.

2. シンプルな警告システムが命を救う。



Photo – NOAA.GOV

Eight Lessons for DRM

DRMへの8の教訓

3. Communications and damage assessment are key to the response.

3. コミュニケーションと損害評価が災害対応の鍵。



Photo- Jacqueline Chandler/FEMA

Eight Lessons for DRM

DRMへの8の教訓

4. Work with non-profits and with private sector *before* the disaster.

4. 災害発生前から
(平時から)NPOや
民間部門と協力する。



Photo – Tetsuo Nakahara/U.S. Army

Eight Lessons for DRM

DRMへの8の教訓

5. Be prepared to coordinate with outside groups *after* the disaster

5. 災害発生後は、外部組織との協力体制の準備をする。



Photo by SSG Ali Flisek/U.S. Air Force

Eight Lessons for DRM

DRMへの8の教訓

6. A country's military are probably prepared to do a lot...
Search & Rescue
Transportation and logistics
Feeding disaster survivors



6. 軍隊はおそらく様々なことができるだろう：
捜索・救助
運輸とロジスティックス
生存者への食糧供給。



Photos – Japan Ministry of Defense; U.S. Department of Defense; Leo Bosner

Eight Lessons for DRM

DRMへの8の教訓

...but military probably not prepared to do everything:

Nutritional planning for shelterees?

Shelter management?

Volunteer coordination?

Donations management?

。。。しかし、すべてに備えることは難しいだろう。

避難者の栄養計画は？

避難所経営は？

ボランティアの調整は？

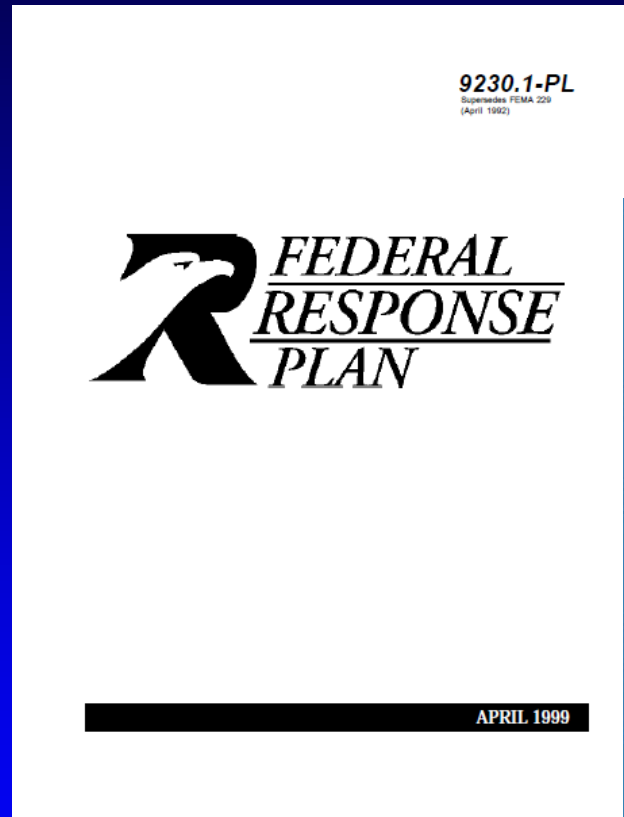
寄付金の管理は？

Eight Lessons for DRM

DRMへの8の教訓

7. Develop a realistic disaster response plan.

7. 現実的な災害対応計画を開発・発展する。



Source – www.FEMA.gov

“Emergency Support Functions” (ESF's)

1. 運輸 - Transportation	9. 搜索・救助 - Search/Rescue
2. 通信 - Communications	10. 危険な物質 - HAZMAT
3. 公共事業 - Public Works	11. 食べ物 - Food
4. 消防 - Fire Fighting	12. エネルギー - Energy
5. 危機管理 - Emergency Management	13. 警察 - Public Safety & Security
6. 大衆管理 - Mass Care (e.g. Mass Feeding & Shelter)	14. 市の長期の復旧 - Long-Term Community Recovery
7. ロジスティクス - Logistics	15. 広報・活動 - Public and
8. 保健・医療 - Health/Medical	External Affairs

Eight Lessons for DRM

DRMへの8の教訓

8. Make use of available emergency management training/education resources.



**Independent Study Program
(ISP)**

8. 危機管理の
トレーニング・教育を利用する。

Source – <http://training.fema.gov/IS/crslist.aspx>



Independent Study Program (ISP) ISP Courses (160 Courses)

Course Code	Course Title
IS-1.a	Emergency Manager: An Orientation to the Position
IS-3	Radiological Emergency Management
IS-5.a	An Introduction to Hazardous Materials
IS-7	A Citizen's Guide to Disaster Assistance
IS-8.a	Building for the Earthquakes of Tomorrow: Complying with Executive Order 12699
IS-10.a	Animals in Disasters: Awareness and Preparedness
IS-11.a	Animals in Disasters: Community Planning
IS-15.b	Special Events Contingency Planning for Public Safety Agencies



www.aboutiigr.org

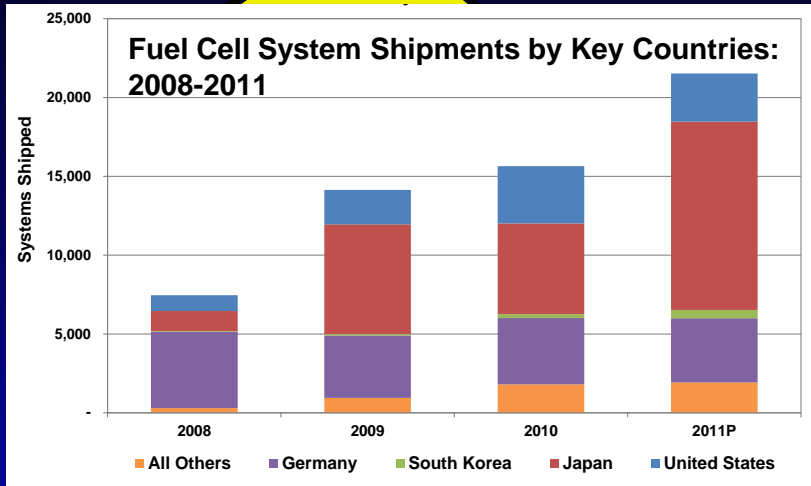


INTERNATIONAL ASSOCIATION OF EMERGENCY MANAGERS

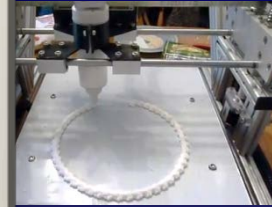
SEARCH

www.iaem.com

Disasters and Distributed Technologies



- Renewable Power and a week of energy storage (33 kwh)
- Communication via Satellite/WiMax (data collection, etc.)
- 3D Printing of medical equipment, & other high value supplies, etc.



The fuel cell market remains strong with over 20,000 systems shipped in 2011, a > 35% increase over 2010¹

700 units were installed with DOE funding support, an additional 1300 backup power FCs have been installed without DOE funding²



Disaster Strikes, Now What?

Communication



Energy Storage
Electrolyzer
FC-H₂ / Battery

¹Sources: FuelCells2000, Pike Research, Markets & Markets, DOE Hydrogen and Fuel Cells Program Plan, www.hydrogen.energy.gov/pdfs/program_plan2011.pdf; "Effects of a Transition to a Hydrogen Economy on Employment in the United States," http://hydrogen.energy.gov/pdfs/epact1820_employment_study.pdf

²Calling all Fuel Cells Article: <http://energy.gov/articles/calling-all-fuel-cells>

Monterey.Gardiner@ee.doe.gov



Poster in disaster evacuees' shelter, June, 2011, Photo by Leo Bosner

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