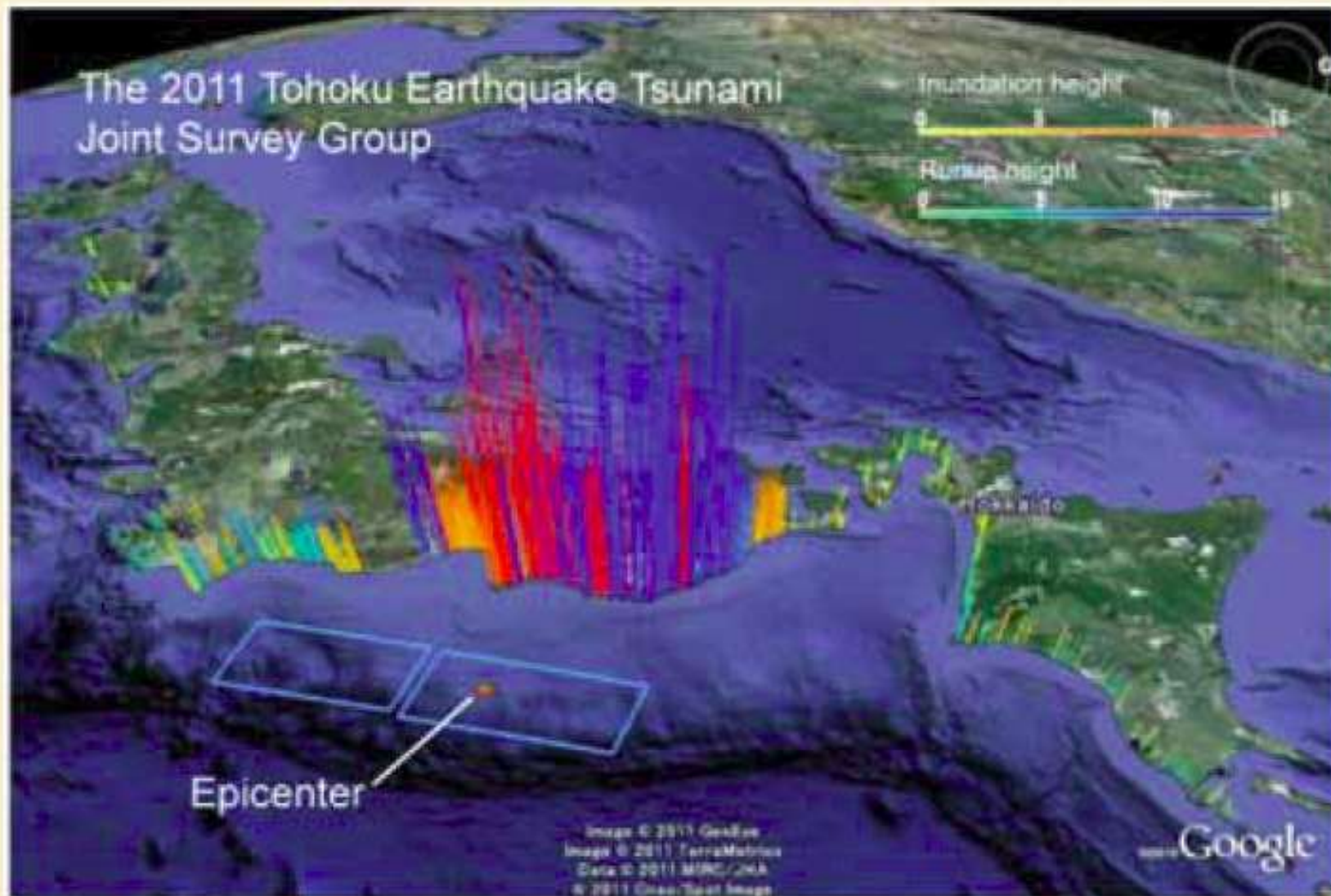# Lessons learned from March 11, 2011 for Inclusive Community Based DRR
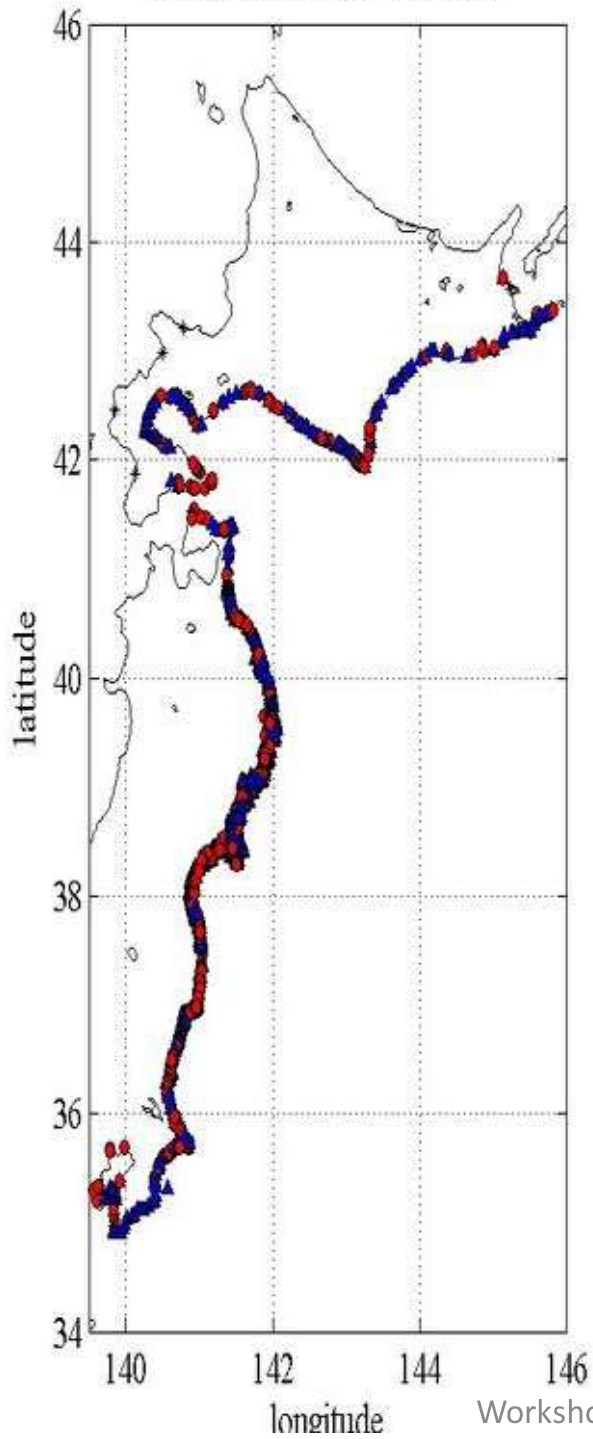
Hiroshi Kawamura

Vice President, Assistive Technology Development organization
Board (Past President), DAISY Consortium
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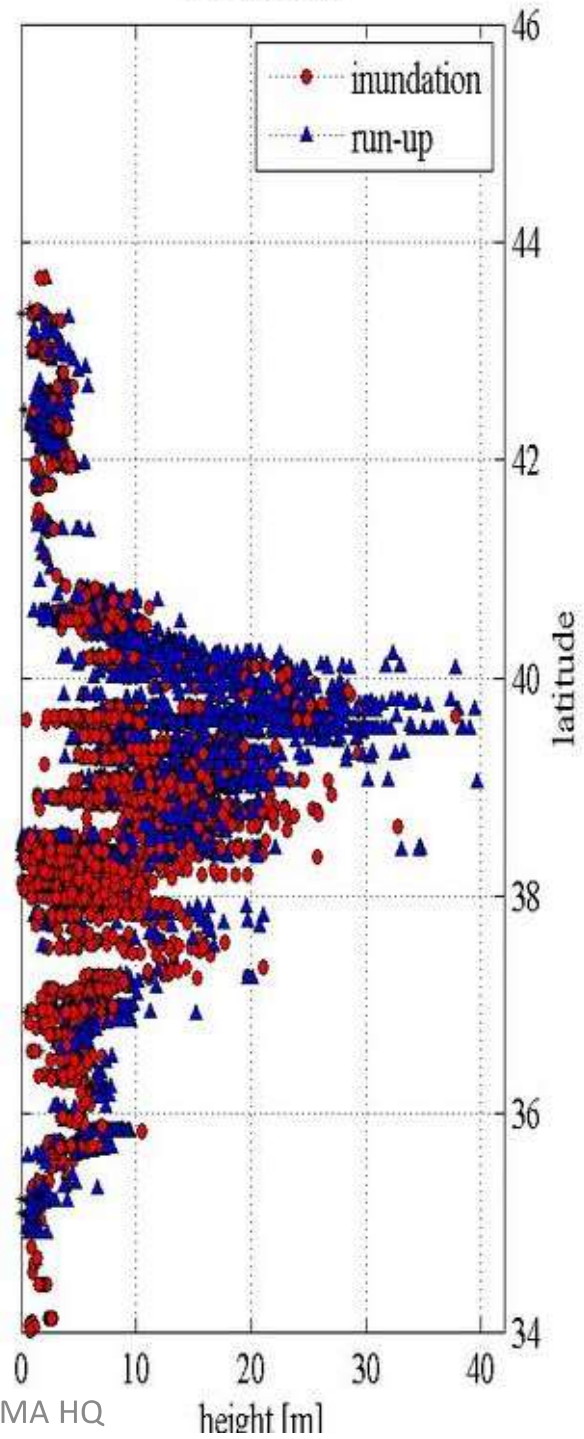## FIGURE 1: The tsunami struck a wide area of Japan

Source: The 2011 Tohoku Earthquake Tsunami Joint Survey Group http://www.coastal.jp/ttjt/index.php

Tsunami Joint Survey Group — 29-Dec-2012

THE GREAT EAST JAPAN EARTHQUAKE LEARNING FROM MEGADISASTERS

CONTENTS

KNOWLEDGE NOTE 2-1
CLUSTER 2: Nonstructural Measures
Community-based
Disaster Risk Management

Kn2-5 Tsunami and EQ warning system

Community-based tsunami-warning systems
Before March 11, 2011, Japan had already developed sophisticated high-technology tsunami-warning systems that included satellite communications and hundreds of real-time monitoring stations. But on March 11 the community-level response (and community-based warnings) was the key that saved countless human lives. The volunteer fire corps—which are community-based organizations (CBOs) trained in disaster management (see KN 2-1)—used various tools such as handheld loud speakers, fire bells, sirens, and fire engine loud speakers to warn communities throughout the affected areas. In Katsurashima, Shiogama City, all community members including 30 disabled people were safely evacuated because the fire corps went door to door to every house, helping community members move to higher ground. In Otsuchi and Natori cities some members of the corps kept ringing fire bells or giving directions on their loud speakers right up until the tsunami hit—some at the expense of their own lives.

BOX 3: The Okawa tragedy
Seventy-four of the 108 students (70 percent) in the Okawa Elementary School, Ishinomaki City, died or went missing after the tsunami. The school is located about 5 km from the mouth of the Kitakamigawa River. Following the earthquake on March 11, teachers led the children from the school buildings to the playground as they had been trained to do. Since tsunami evacuation sites had not been identified before the disaster, they headed toward an elevated bridge not far away. The tsunami engulfed the students and teachers on the way to the bridge.
A statue was erected in front of the school for bereaved families to pray in memory of their children.

During normal times, there is a need to make preparations, such as drafting detailed plans for choosing and arranging of transportation, establishing of evacuation sites in outlying areas, and ensuring water and food supplies at evacuation shelters, considering that evacuees may number in the thousands or tens of thousands. It is especially important to develop measures for the evacuation of the disadvantaged, such as the seriously ill or disabled, including those in medical institutions, homes for the aged, and social welfare facilities.

Kn2-6 Evacuation

Local governments conduct tsunami evacuation drills every year on days commemorating past large-scale tsunamis, and residents learned how to evacuate safely and quickly from their own houses to designated shelters. Volunteer organizations and private companies also participate, demonstrating, for example, how to assist people with disabilities, how to guide evacuees, and how to close tsunami dike gates. In sightseeing areas, tourists are also encouraged to participate in these drills.

Over half the residents evacuated by vehicle. Many wanted to leave with their family members, or thought that the tsunami would catch up to them if they left on foot. One-third of them were stuck in traffic jams. The average evacuation distance on foot was 450 meters, while the average distance to evacuate by car was 2 kilometers. While evacuation on foot is the general rule, vehicles are also needed to carry the elderly and disabled. Measures for evacuating by vehicle need to be improved.

Ookawa Elementary School was hit by Tsunami on 11 March 2011. Only 34 students out of 108, and 3 teachers out of 13 survived.

photo: http://photo.sankei.jp.msn.com/panorama/data/2011/0324ookawa01/

NHK: http://www.youtube.com/watch?v=fXwu1sHoJbg&feature=related

BFMTV: http://www.youtube.com/watch?v=wpNk374GLCs&feature=related

Magnitude 9.0 earthquake hit Ishinomaki on 11 March 2011 at 14:46

Urakawa Town

Use of accessible ICT – a good practice

- In Urakawa Town, Japan, where 2.8 m Tsunami hit on 11th March 2011, a group of psycho-social disabilities conducted a showcase evacuation.

- The group has been active to develop each member's ability for Tsunami evacuation through Social Skill Training and development of their own evacuation manual in the format of Digital Accessible Information System, DAISY.

- DAISY Consortium has been developing use cases for DAISY Standards to address requirements of persons with disabilities to share knowledge based on successful Tsunami evacuation requirements of all community members in Urakawa Town.

DAISY multimedia manual for Tsunami Evacuation

- Go straight to the point
- Tell what to do rather than what should not be done

- Use favorite or familiar
  - characters
  - pictures
  - drawings
  - voices
  - favorites
  - places
  - tastes
  - Music, rhythms

- Understanding by brain and by body both

Evacuation Drills of Urakawa Bethel's House

• Individuals with severe psychiatry disability conduct evacuation training in winter at night every year to prepare for Tsunami.

•With 4 evacuation training sessions per year, they develop ability and knowledge to evacuate to higher than 10 m within 4 minutes.

•They maintain evacuation manuals in DAISY multimedia format by themselves. cf. http://www.youtube.com/watch?v=JRjiZzflt_g

Disaster Preparedness
for Persons with Mental Disabilities
Project by Bethels House

AKIYAMA   Satoko

KATOGI   Shoko

MAHORI Aya SHIMIZU Rika
(characters in video)

The standard program of evacuation drill

1) To have a meeting for talking about today's topic of evacuation drill. To confirm our escape route and evacuation place with DAISY. To share the role of evacuation drill.
2) To relax the body with "Bosai-Minami Exercise".
3) To conduct evacuation drill, and keep time in reaching point of 10 meters high. Take video or pictures of whole process of the drill.

2nd International Conference on Disaster Preparedness
for Persons with Disabilities
12-13 May 2009, Phuket, Thailand

On-site international study on
Disaster Preparedness in Urakawa,
May 2005

WSIS 2005 ->

河村 宏　国立身体障害者リハビリテーションセンター研究所
障害福祉研究部長

1970年、東京大学総合図書館に勤務。1997年より（財）日本障害者リハビリテーション協会情報センター長、2003年7月より現職。DAISYコンソーシアム理事、WAI／W3C常任委員、アジア太平洋障害者センター支援委員、障害者放送協議会著作権委員会委員長。すべての人が共有する知識と情報のデザインを追求し、諸活動に従事。情報アクセス権と著作権の調和を目指した活動に取り組む。また、ソーシャルインクルージョンの立場にたち、緊急災害時の障害者への情報支援及び国際協力に尽力している。

Monthian Buntan　Thailand Association of the Blind（TAB：タイ盲人協会）

タイ盲人協会の初代副会長。現在は、2002年4月からタイ盲人協会専務理事及び、2003年7月からはDAISY for Allのプロジェクト・アシスタント・マネージャーを務めている。1993年～2002年4月までMahidol大学Ratchasudaカレッジの副学長を務めた。アジア太平洋地域WBU執行委員を務め、アジアの視覚障害者の教育と情報アクセスの急速な改善とタイのDAISY事業促進に大いに貢献している。2001年には、タイ障害者の生活改善に多大な貢献を行った卓越した個人として、タイ首相より栄誉章を授与。

Dipendra Manocha

National Association
for the Blind
（NAB：インド国立盲人協会）

NABのIT＆サービスのディレクターを務める。Intelコンピューター・ラボ、点字開発部、DAISY録音図書プログラムに携わっている。2002年3月に初のDAISYトレーニングプログラムを行い、現在は全国DAISYリソース・センター（NAB内）の設立に携わる。2002年11月、同氏はインドの団体としては初のマルチメディアDAISYの導入に貢献した。また、視覚障害者当事者として国内・外の学会やセミナーにて、主に視覚障害者の為のITに関する発表を積極的に行い、幅広く活躍している。

山根 耕平（やまねこうへい）　浦河べてるの家

得意のパソコンの知識を生かし、べてるのHPやシステム、及び町の介護支援センターの仕事や防災プログラムにも携わっている。国連の世界情報社会サミットにて英語でスピーチを行った経験をもつ。べてるの家での仲間とのふれあいの中で、自分はそのままでいいんだと心から思えるようになり、言葉をとり戻す。以降、仲間の力を信じ、自らも仲間の力になっている。

Jack Jansen　The national institute for mathematics and Computer Science in Netherlands
（CWI：オランダ国立情報・数学研究所）

CWIに所属。W3C SYMMワーキンググループのメンバーでもある。現在はマルチメディア・アノテーション、「Ambulant Player」そしてクロス・プラットフォームで拡張可能なマルチメディア再生エンジンの開発に関心がある。GrINSマルチメディアエディターを開発したOratrix勤務の経験を持つ。
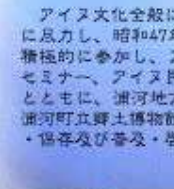
Accessible information for people with a print impairment
（FNB Netherlands：オランダ盲人図書館連盟）

オランダ在住のソフトウェア開発者。海抜ゼロより4.8m下にあるハーグという街の出身。1991年よりFNB勤務。印字を読むことに障害のある人を対象に情報支援を行う。近年は、DAISY関連のプロジェクトを中心に活動している。

Edmar Schut

遠山 サキ（とおやまさき）　浦河ウタリ協会

アイヌ文化全般に広い知識と技能・技術を体得した伝承者として地域のアイヌ文化の伝承に尽力し、昭和47年より姉茶民芸品研究会（浦河ウタリ文化保存会の前身）設立当初より積極的に参加し、アイヌ文化の伝承・保存活動を行っている。また、アイヌ文化に関するセミナー、アイヌ民俗文化財専門員等研修会、アイヌ民族博物館職員研修の講師を務めるとともに、浦河地方の道立高等職業訓練校織布科講座の講師、浦河アイヌ語教室の講師や浦河町立郷土博物館セミナーなどの講師を務めるなど、北海道内におけるアイヌ文化の伝承・保存及び普及・啓発に大きく貢献されている。

木下 富雄（きのしたとみお）

浦河町東町第5自治会会長
東町都市開発促進協議会会長
浦河町民憲章推進協議会会長

浦河小学校PTA、浦河第一中学校PTA、浦河高等学校PTA、浦河町PTA連合会の会長を歴任するとともに昭和54年から東町第5自治会会長、昭和58年から現在まで浦河町民憲章推進協議会会長を務め、平成10年4月から14年3月まで北海道社会教育委員連絡協議会会長と北海道生涯学習協会副会長の要職にあった。平成13年には社会教育功労者表彰（文部科学大臣表彰）受賞。自治会・コミュニティ活動のリーダーとして活躍している。

Who are Vulnerable?

- Those who are not able to:
  - Understand the situation
  - Communicate
  - Locate the evacuation route
  - Evacuate
  - Isolated from the community
  - Participate in the community based preparedness development

and small children, travelers, those who are pregnant, who require medical treatment, etc.

Conclusion

- Infrastructure development for robust and resilient community: Universal Design

- DRR preparedness development for all community members including PWD: guarantee for participation through reasonable accommodation

- DRR education and drills for all community members in particular for persons with disabilities

- Accessibility is the key to support full participation

- Capacity development of PWDs will increase community DRR assets to save lives of everybody

Demonstration of the HLMDD video

Thank you very much for your attention!