



# **Requirements for Life-saving Information to Trigger Right Actions to Save Lives at Severe Disasters:**

**Lessons Learned from 11 March 2011 Disasters in Japan**

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**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>

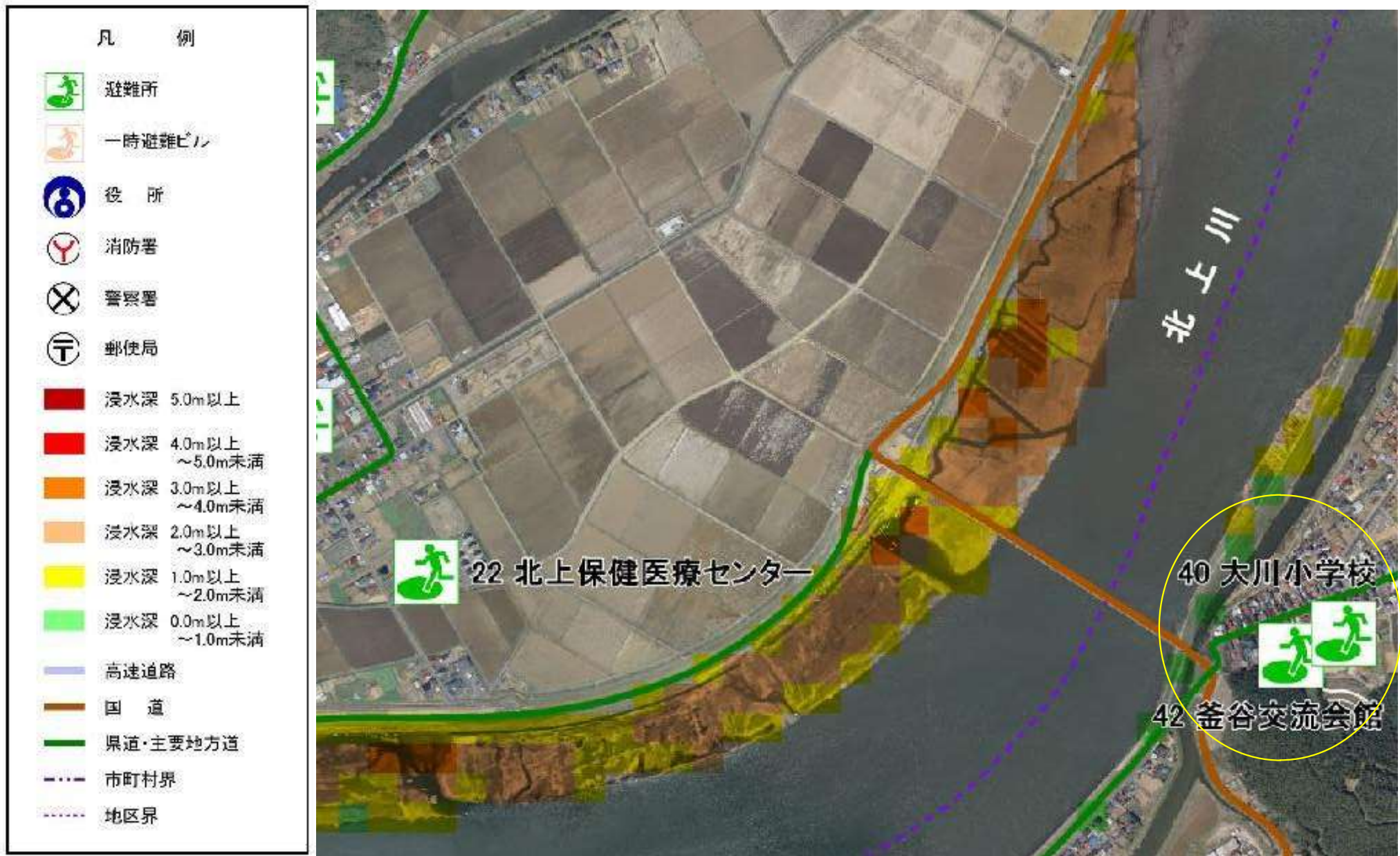
# Magnitude 9.0 earthquake hit Ishinomaki on 11 March 2011 at 14:46



# Ookawa Elementary School in Ishinomaki



# Tsunami Hazard Map



# Location: 4km from the mouth of Kitakami River



# Simulation of Tsunami Hit the School



# What happened on 11 March 2011

- 14:46 Magnitude 9.0 earthquake
- 15:26 8.6+m Tsunami hit Ishinomaki
- 15:37? Ookawa Elementary School students hit by the Tsunami

Japan has lost:

- 22,553 lives including missing 7,014
- 650,000 houses

The source of the simulation next page:

<http://www.youtube.com/watch?v=LbSu3sEhZr4>



# Facts

- The school lost
  - ➔ 74 students out of 108 incl. 4 missing
  - ➔ 10 Teachers out of 13
- The school was designated as a shelter
- Most of students stayed at the school for 50 minutes after earthquake happened
- The warning on great tsunami was heard by everybody in the school

# Research Questions

- Why they did not evacuate to higher place as soon as possible?
- What made a difference between those evacuated and those who did not evacuate when they received a Tsunami Warning?

Assumptions: Preparedness and knowledge determines the reaction when information reached

# Observations

- What could have been done?
  - ➔ Evacuation immediately after an earthquake
  - ➔ Designate shelters for Tsunami that are located in the safe zone
  - ➔ Exercise Tsunami evacuation at schools and communities
- Research on Profiles of victims and survivors should indicate the best way to mitigate the loss of lives at disasters

# 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.

# Emphasis on Empowering those Vulnerable

## ■ Why?

Rescues may not come at the critical moment, for the first half an hour.

Self-help in combination with community support is the key factor for survival.

## ■ How?

sharing knowledge = changing mindset

→ Decision making to react the warning

→ Collaboration with neighbors

→ Community support development

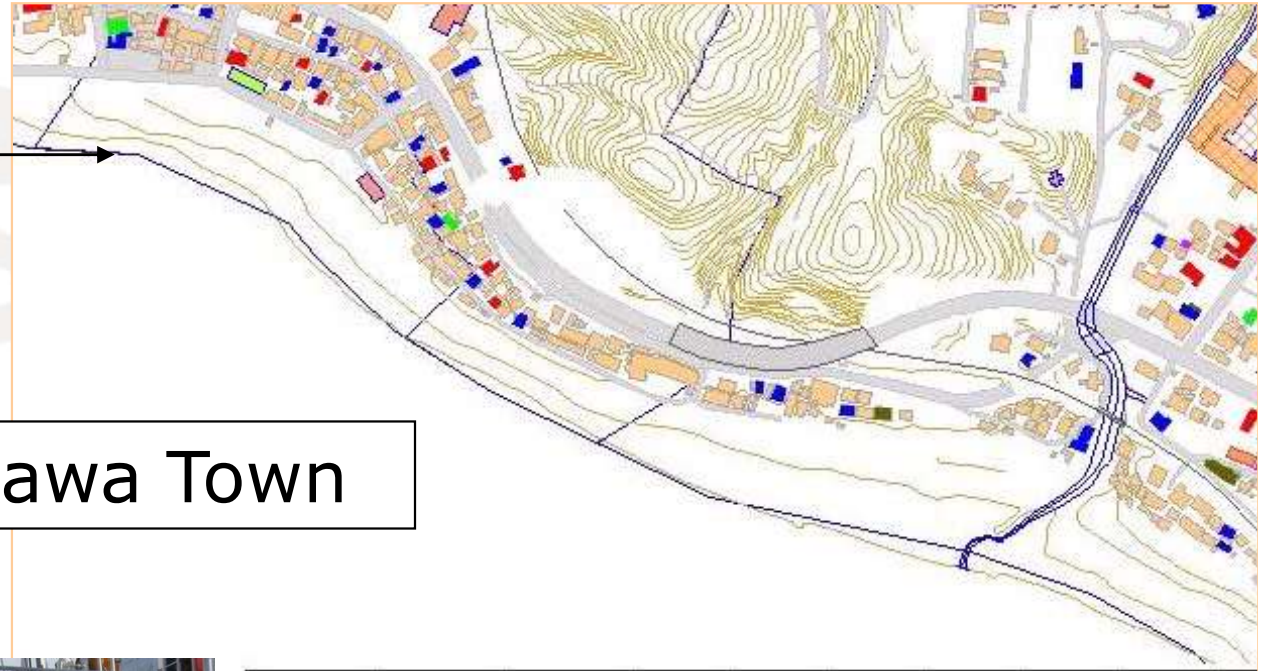
# Multi Stakeholders Approach

- Everybody in the community has role to play
- Revisiting existing Disaster Risk Reduction, DRR, plan by all community members including diversity of persons with disabilities and other vulnerable people is the best powerful tool to change the mindset of relying on rescue team and put priority on preparedness

# Use of accessible ICT – a good practice

- In Urakawa Town, Japan, where 2.8 m Tsunami hit on 11<sup>th</sup> 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.

# Sharing common understanding on Tsunami in Urakawa Town



Urakawa Town





# 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](http://www.youtube.com/watch?v=JRjiZzflt_g)



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



**河村 安** 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両面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WBI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迅速な改善とタイの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、主に視覚障害者のための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・アプリケーション、「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を開発したOatrix勤務の経験を持つ。

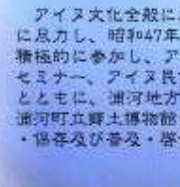
**Accessible information for people with a print impairment (FNB Netherlands:オランダ盲人図書館連盟)**

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**

**越山 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年より姉帯民芸品研究会(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教員等研修会、アイヌ民族博物館職員研修等の講師を務めるとともに、浦河地方の道立常野職業訓練校福祉科講座の講師、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  
浦河町民運動推進協議会会長

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年から現在まで東町町民運動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。

WSIS 2005 ->

# DAISY multimedia manual for Tsunami Evacuation



The screenshot shows the EaseReader software window. The title bar reads "セミナーハウスからの避難経路 - EaseReader". The main content area displays the following Japanese text:

大きな揺れがおさまったら  
とにかく警報を待たず、身一つではしって  
近くの高台へ早く逃げましょう。

The text is accompanied by two illustrations: a blue, cartoonish tsunami wave on the left and a small cartoon character running up a green hill on the right. The bottom of the window features a control panel with various icons for navigation and playback, including a play button and a volume slider.

- 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

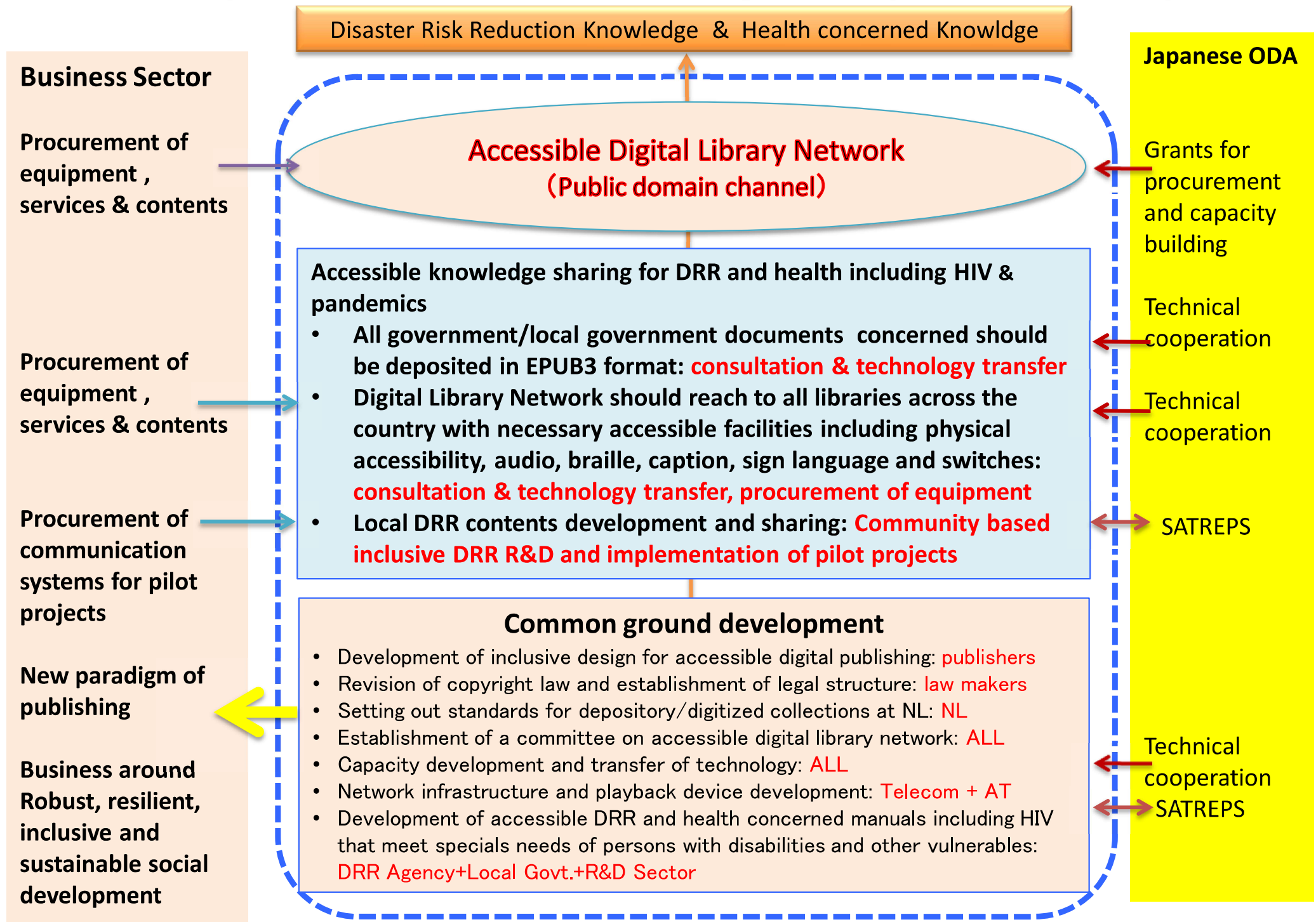
# Digital Inclusion in DRR

- Sharing life-saving knowledge through inclusive ICT is the key to empower everybody including those with special requirements

For your information, DAISY multimedia resource manuals on Tsunami evacuation are available at:

[http://atdo.sakura.ne.jp/files/DAISY/share/tsunami\\_urakawa\\_en\\_exe\\_mp3.zip](http://atdo.sakura.ne.jp/files/DAISY/share/tsunami_urakawa_en_exe_mp3.zip)

# Community Based DRR: Accessible Knowledge for Preparedness Development



# Accessible ICT Standards

“Two important developers of technical standards for accessible ICT products and services are the W3C Web Accessibility Initiative and the DAISY Consortium.”

WHO/World Bank, *World Report on Disability*, 2011. p214  
([http://www.who.int/disabilities/world\\_report/2011/report/en/](http://www.who.int/disabilities/world_report/2011/report/en/) )

DAISY Standards: <http://www.daisy.org/>

Web Accessibility Guidelines: <http://http://www.w3.org/WAI/>

# Open Standard requirements

- Open
- Non-proprietary
- Inter-operable
- Free of charge
- With proven track record of accessibility
- Accepted by main stream industry: Web, Publications and Broadcasting

# Conclusion

- Digital Inclusion to share knowledge is the most realistic approach to save lives of people who are most vulnerable at disasters
- Promotion of use of accessible ICT standard such as DAISY and Web Accessibility Guidelines for disaster concerned information dissemination with emphasis on preparedness is the best measure to empower most vulnerable people in disasters
- Implementation of Convention on the Rights of Persons with Disabilities, WSIS Plan of Actions, and Tampere Convention need to give clear emphasis on preparedness of persons on the ground hit by severe disasters



# Information Sources for further readings

- World Summit on the Information Society Geneva 2003-Tunis 2005 and Follow-up Activities (<http://www.dinf.ne.jp/doc/english/prompt/wsisindex.html>)

A comprehensive information source on disability in the context of the World Summit on the Information Society and its follow up activities including 2 international conferences on disaster preparedness of persons with disabilities held in Phuket in 2007 and 2009.

- DAISY Consortium official website (<http://www.daisy.org/>)

The DAISY Consortium has been developing standards for global knowledge sharing. Disaster preparedness and other basic life-saving information need to be shared in an accessible format for every individual regardless of disabilities and language. New DAISY4 standard aims at addressing accessibility requirements of everybody at emergency as well as at disaster preparedness development stage.

- World Wide Web Consortium Web Accessibility Initiative (WAI) website (<http://http://www.w3.org/WAI/>)

- United Nations Enable (<http://www.un.org/disabilities/>)

- Hyogo Framework for Action (<http://www.unisdr.org/we/coordinate/hfa>)

Thank you very much for your attention!

3000 residents of Miyake Island in Tokyo were forced to live in shelters for 1600 days due to eruption of a volcano.  
People returned to reconstruct their homes in 2005.