Disaster Reduction Hyperbase (DRH)
- toward its implementation in Asian practice -

**Asian Conference on Disaster Reduction 2010
(ACDR2010)
17-19 January 2010
Kobe Portopia Hotel, Kobe (Hyogo)**

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+Progress reports on DRH at ACDR:
* Seoul (2006), Astana (2007), Bali (2008), Kobe (2010)

*DRH Top page (as of 091015)
http://drh.edm.bosai.go.jp/

+What is DRH

"Disaster Reduction Hyperbase-Asian Application （DRH-Asia)"

+ A *web-based* information platform

+ To disseminate appropriate disaster risk reduction technology and knowledge *(Implementation technology)*

+ To deal with *multi hazard* disaster reduction

+ To aid disaster reduction policy development interactions among *developing & industrial countries*

DRH

+Motivation (1): Kobe (1995)-EqTAP-WCDR-DRH

* **1995**: Disaster in **Kobe E.Q.** / International concerns, especially at APEC Meetings ⟹ **MEXT** funding
* **1998-2004**: **EqTAP** Project (*E*arth*q*uake and *T*sunami Disaster Reduction for *A*sia-*P*acific Regions) / R&D of DRR technology based on regional characteristics / **"Implementation Strategy in R&D"**
* **2005**: **UN-WCDR** (World Conference on Disaster Reduciton) / **HFA** (Hyogo Frame for Action) 2005-2015 / **"Disaster Reduction Portfolio"** proposed by GoJ for implementation of HFA ⟹ **MEXT** funding
* **2005-2009**: **DRH** Project (*D*isaster *R*eduction *H*yperbase) / Compilation of **"Implementation Technology"**)

DRH

+Motivation (2): disaster experience

Needs for database & information mechanism for good technologies

A week after 2004 Indian Ocean Tsunami disaster:

*An e-mail query for information on mangrove effects on tsunami disaster

*EqTAP project output - Greenbelt technology: already available

West Coast of Aceh
(Widjo Kongko, 2005)

Laboratory test

Coastal project in Sulawesi Island, Indonesia

Greenbelt technology development (PARI & CDRC: EqTAP project)

+DRH Project: Development and dissemination of
"Disaster Reduction Hyperbase-Asian Application（DRH-Asia)"

Major sponsor:

* MEXT Special Coordination Fund for Promotion of S&T

   +DRH Phase I: April 2005-March 2006
   +DRH Phase II: July 2006-March 2009

Institution in charge:

* NIED (National Research Institute for Earth Science and Disaster Prevention) / with Kyoto University as contractor on part of the project / in cooperation with MEXT and CAO, GoJ

+ **International Participation by leading researchers, NGO leaders, and international institutions (about 25 champion people)**

* **Cross-regional coordination and collaboration in information platform development: UN-ISDR Secretariat, Geneva**

* **Asian participation: BDPC (Bangladesh), BNU (China), SEEDS (India), ITB and CDRC (Indonesia), IIEES (Iran) NSET (Nepal), PHIVOLCS (Philippines), U. Peradeniya (Sri Lanka) + *leading institutions of Japan***

* **Africa: USTHB (Algeriga)**

* **South America: Peru Civil Defence (Peru)**

+ **Contributions by multilateral participants: in cash and/or in-kind**

+Features of DRH

DRH Feature (1): Pursuit for "Useful" technology for DRR

Implementation technology (product+process+wisdom)

+ **Implementation oriented technology (IOT)**: Outputs from modern R&D that are practiced under clear implementation strategies

+ **Process technology (PT)**: Know-how for implementation and practice, capacity building and social development for knowledge ownership

+ **Transferable indigenous knowledge (TIK)**: Traditional art of disaster reduction that is indigenous to specific region (s) but having potential to be applied to other regions and having time-tested reliability

DRH Feature (2): Criteria for DRH Contents

General Criteria for DRH Contents Acceptance

- **Understandable** to users
- **Implementable** (Usable, Doable)
- **Shown to be useful**

Plus

- **Criteria for each category (IOT, PT, TIK)**

* **Facilitation by DRH Facilitators:**
  (IOT) Mosen Ghafory-Ashtiany and Hiroyuki Kameda
  (PT) Amod Dixit and Norio Okada
  (TIK) Anshu Sharma and Rajib Shaw

DRH

Criteria for Implementation Oriented Technology (IOT)

ver. 040425 (EqTAP rep)
070917 (Stresa)

- Technically or scientifically acceptable

- Problem identification and methodology development practiced in direct communication with stakeholders and end-users to create incentive for their participation and ownership

- Regional characteristics properly incorporated in terms of local context including available materials, cost, and workmanship

- Most advanced research methodologies mobilized to generate high-quality products and meet the actual demands of the region

DRH

Criteria for Process Technology (PT)

- With emphasis on "practical use" of research
- A tested methodology with social, cultural, economic, ecological, and technical feasibilities, developed through an implementation/ testing process ensuring results in disaster reduction
- Demonstrated stakeholders' participation and enhanced ownership
  - of the process
  - of results and lessons
- Amenable/adaptable to local context, and with institutionalization potential
- In-depth knowledge and insight gained through experience with disasters and mitigation

DRH

Criteria for Transferable Indigenous Knowledge (TIK)

- Originated within communities, based on local needs, and specific to culture and context (environment and economy)

- Provides core knowledge with flexibility for local adaptation for implementation

- Uses local knowledge and skills, and materials based on local ecology

- Has been proven to be time tested and useful in disasters

- Is applied or applicable in other communities or generations

DRH

Disaster Reduction Hyperbase
- Asian Application (DRH-Asia) -

DRH Database — Find technologies
DRH Forum — Propose a technology
DRH Forum — Discuss technologies
DRH Links — DRH partners
DRH Project — DRH Project activities

What is DRH?
DRH is a web-based facility to compile appropriate disaster reduction technologies and knowledge that ...

Technologies for disaster reduction

DRH Database accommodating "implementation technology"
* Implementation oriented technology (IOT)
* Process technology (PT)
* Transferable indigenous knowledge (TIK)
# DR technology = Product + Process + Wisdom

DRH Forum ; for contents elaboration
* Proposal forum for facilitating collation, testing and dissemination of mitigation models for DRH contents

DRH Links : to relevant initiatives
* Guided links to relevant initiatives of disaster information platforms

DRH Project
* DRH Project activities traced here: Documents downloadable in PDF

Project updates

Links to the DRH website

+DRH Contents: current state (as of Dec.31, 2009)

	under discussion on DRH Forum	registered in DRH Database	total
IOT	10	10	20
PT	10	12	22
TIK	1	10	11
total	21	32	53

Algeria	1	Japan	30
Bangladesh	2	Nepal	4
China	5	Peru	1
India	1	Philippines	1
Indonesia	3	Sri Lanka	1
Iran	3	East Timor	1
total		53	

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Disaster Reduction Hyperbase
- Asian Application (DRH-Asia) -

DRH Contents example (1): IOT

1. Title
Seismic Retrofitting for School Buildings in Japan- Publication of a Reference Book -

ID:	DRH 41
Hazard:	Earthquake
Category:	Implementation Oriented Technology (IOT)
Proposer:	Takayuki Nakamura
Country:	
Date posted:	24 September 2008
Date published:	07 November 2008

Installing Steel Bracing

Contact
(1) Masao YAMAKAWA (MEXT)
Director, Office for Disaster Prevention, Ministry of Education, Culture, Sports, Science and Technology (MEXT)
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(2) Koichi SHINPO (NIER)
Director, Educational Facilities Research Center, National Institute for Educational Policy Research (NIER)
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(3) Takayuki NAKAMURA (Hokkaido University)
Director, Facilities Department, Hokkaido University
s-bucho@facility.hokudai.ac.jp, TEL: -81-11-706-2063

2. Major significance / Summary
Earthquakes can occur anywhere and at any time in Japan. Improving the seismic resistance of school buildings is a pressing issue, because children spend a large part of their daily lives in school. MEXT published a reference book for retrofitting school buildings under the cooperation with NIER. The book includes many seismic retrofitting examples with various pictures, charts and plans. Even though the readers don't have enough technical knowledge and information about seismic retrofitting, they can easily understand what are critical for retrofitting existing school buildings.
Readers are encouraged to access the full text of the Reference Book at (http://www.nier.go.jp/shisetsu/pdf/etaishinjirei.pdf)
MEXT: Ministry of Education, Culture, Sports, Science and Technology
NIER : National Institute for Educational Policy Research

3. Keywords

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Disaster Reduction Hyperbase
- Asian Application (DRH-Asia) -

DRH Contents example (2): PT

1. Title
Community Based Disaster Risk Reduction (CBDRR)

ID:	DRH 28
Hazard:	Multi-hazard
Category:	Process Technology (PT)
Proposer:	Krishna S. Pribadi
Country:	PHILIPPINES; INDIA; NEPAL; CAMBODIA; INDONESIA;
Date posted:	17 March 2008
Date published:	09 June 2009

Community members working together in reducing village flood risk as part of action plan implementation.

Contact
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Handphone : + (+62) 811217666
Office website : http://kppmb.itb.ac.i

Dr Teti Argo
Researcher at Center for Disaster Mitigation, Institut Teknologi Bandung (CDM-ITB);

Dr Wayan Sengara
Head, Center for Disaster Mitigation, Institut Teknologi Bandung (CDM-ITB).

2. Major significance / Summary
Reducing social vulnerabilities resulting in reducing disaster impact on human lives and property by improving the community's disaster resilience through enhancing their awareness, and in organizing disaster planning and preparedness at the local community level. The community will have the ability to identify risk, plan, prioritize and implement actions to reduce risk from natural hazard at the community level.

3. Keywords

DRH Contents example (3): TIK

Disaster Reduction Hyperbase
- Asian Application (DRH-Asia) -

1. Title
Dujiangyan Project

ID:	DRH 44
Hazard:	Flood , Drought
Category:	Transferable indigenous knowledge (TIK)
Proposer:	Weihua FANG
Country:	CHINA;
Date posted:	29 December 2008
Date published:	16 March 2009

Flying Sand Fence.

Contact
Weihua FANG, Xingchun ZHONG, Fei HE, Hong XU
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E-mail: fang@ires.cn
Tel: 86-10-58802283
Fax: 86-10-58802158

2. Major significance / Summary
Dujiangyan Project, which consists of Fish Mouth Water-dividing Dam, Flying Sand Fence and Bottle-Neck Channel, is a hydraulic engineering with a history more than 2000 years. It is still being used today for flood disaster prevention, sediment control and irrigation. Its completion changed Chengdu Plain from a disaster-prone area to affluent area honored as "The Land of Abundance"

3. Keywords
Dujiangyan, Drought, Flood, Sediment control, Irrigation

II. Categories

4. Focus of this information
Transferable indigenous knowledge (TIK)

5. Users
5-1. Anticipated users: Community leaders(voluntary base) , Administrative officers , Municipalities , National governments and other intermediate government bodies(state, prefecture,fistrict,etc.) , International organizations(UN organizations and programmes, WB, ADRC, EC, etc.) , Experts , Teachers and educators , Architects and engineers

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+*Toward DRH implementation in Asian practice*

(1) User oriented activities

* **ASEAN-DRH Session**, Kyoto, 13 October 2009

* DRH user workshops under the scheme of APEC funding (to be proposed)

* Assisting **National/Regional DRH** Implementation using the DRH Installation Kit (on-going: DRH-Bangladesh, DRH-Nepal, etc.)

* Projects on application of DRH contents under the ODA scheme (to be propoed)

(2) Enhancement of DRH Contents

*Compilation through public solicitation as well as personal contacts

*A new DRH Contents development scheme based on linking with specific DRR research such as **UNESCO IHP-DRH Project** (2009-2010)
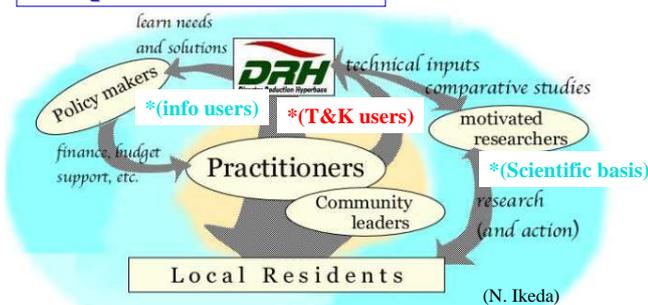
DRH

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(3) Sustainable development of DRH

***DRH Consortium** (endorsed in Feb. 2008 / First General Assembly, Kyoto, 12&15 Oct. 2009) / Function as a core of international DRH activities

***DRH management** ⟹ Kyoto Univ. (2011) (focused on training next generation DRH leaders) / **DRH web system maintenance and international transfer** ⟹ continued to be at NIED operation

*Linked with "**International IDRiM Society**" (endorsed in Oct. 2009) / Taking roles of implementation technology in the IDRiM Journal

DRH

(4) Publicity and Dissemination of DRH

***Global Platform 2** (Geneva, 15-19 June 2009) / presentation and demonstration

*DRH Session at Japan Society on **Natural Disaster Science** (Kyoto 29 September 2009)

*Scientific papers for NDS Journal, IDRiM Journal, etc., User-oriented publication by ISDR-DRH Joint Publication (on-going)

*Dissemination at **ACDR**、**ASEAN-COST+3**, **APEC ISTWG**, etc.

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* Expected users of DRH

learn needs and solutions

Policy makers

*(info users)

technical inputs

comparative studies

*(T&K users)

motivated researchers

finance, budget support, etc.

Practitioners

*(Scientific basis)

Community leaders

research (and action)

Local Residents

(N. Ikeda)

* direct users of the technologies/knowledge
* users of information in DRH

*We welcome your membership registration, and:
+**Find technologies / DRH Database**
+**Propose a technology / DRH Forum**
+**Discuss technologies / DRH Forum**
+**Access to DRH partners / DRH Links**
+**Access to DRH development records**
  / DRH Project Activities