

Disaster Reduction Hyperbase

1. Foreword

DRH is a web-based facility disseminating disaster reduction technology and knowledge. It has been designed for potential use by *policy makers*, *community leaders*, *practitioners*, and *motivated researchers* who wish to make access to appropriate technical know-how's that can help them establish practical disaster management plans.

The DRH was developed in an effort for implementation of the Hyogo Framework for Actions 2005-2015 adopted at WCDR (World Conference on Disaster Reduction 2005), specifically as a component of “Portfolio for disaster reduction” proposed by the government of Japan. NIED served as a lead institution in close collaboration with UN-ISDR, MEXT, CAO, KU, BNU, NSET, SEEDS, IIEES, ADRC, and other institutions constituting an active multilateral team.

Construction DRH was conducted under a project entitled “Disaster Reduction Hyperbase – Asian Application (DRH-Asia)”, whose major sponsor was the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japanese government. National Research Institute for Earth Science and Disaster Prevention (NIED) of Japan operated the project in cooperation with Kyoto University.

The DRH web-site and the registration system of the DRH have been completed as its ver.3, and contributions to DRH Contents from organizations and individuals worldwide is highly welcomed.

2. Background

Natural disasters are constant threats to human society, such as earthquakes, tsunamis, floods, volcanic eruptions, landslides, etc. Tremendous amount of losses in human lives and property are caused by them. To overcome physical and societal vulnerability against disasters and to maintain sustainable development, enhancement of disaster resilience capabilities is indispensable and must be practiced upon respective regional characteristics.

The Japanese government proposed to develop “Portfolios for Disaster Reduction” at the World Conference on Disaster Reduction (WCDR), Hyogo-Kobe, January 2005. In order to realize this concept, MEXT and NIED, conducted activities under a pilot project (DRH Phase I) in 2005 together with UN/ISDR and Kyoto University for establishing an international framework for development of “Disaster Reduction Technology List on Implementation Strategies”.

On this basis, a three-year project entitled “Disaster Reduction Hyperbase – Asian Application (DRH-Asia)” was approved for a project period of July 2006 - March 2009. The project was supported under the funding scheme of “Special Coordination Funds for Promoting Science and Technology” of Japanese government. The mission of the project was to develop and disseminate a web-based facility to compile appropriate disaster reduction technology and knowledge that incorporate regional characteristics of Asian countries and have solid implementation strategy.

The DRH website (ver.1) opened on 14 December 2007, followed by improvement works to provide enhanced functions (upgraded to DRH ver.1.1: 1 May 2008). Further improvement was

conducted to implement DRH Template ver.7.1 (upgraded to DRH ver.2: 28 August 2008). The final improvement within the DRH-Asia project period was realized with an enhanced web design and plenty of functional refinements (upgraded to DRH ver.3: 30 March 2009). In accordance with such evolution, this document prepared as Call for DRH Contents proposals ver.5 conforms with DRH ver.3 (<http://drh.edm.bosai.go.jp/>).

3. Implementation Technologies

The following three types of implementation technologies are to be compiled.

(1) Implementation Oriented Technology: **IOT**

Products from modern R&D that are practiced under clear implementation strategies.

(2) Process Technology: **PT**

Know-how for implementation and practice, capacity building and social development for knowledge ownership.

(3) 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.

This classification has been conceptualized from extensive discussion among DRH project participants on "What is useful technology and knowledge for disaster reduction?" Specific features of these categorized technology were also reviewed, and have been summarized as DRH criteria as shown in Appendix (also downloadable at http://drh.edm.bosai.go.jp/Project/Phase2/1Documents/7_Criteria.pdf)

4. Focused Hazards

DRH will deal with multi-hazard issues including Earthquake, Tsunami, Volcanic eruption, Landslide, Mudflow, Dust storm, Cold wave, Heat wave, Zud, Cyclone/Typhoon, Storm surge, Flood, Flash flood, Glacial Lake Outburst Flood (GLOF), Snow avalanches, Epidemic, Wildfire, Drought, Desertification, Climate change impact, Land degradation, etc.

5. Call for DRH Contents Proposals

The DRH contents are solicited for proposals and to be discussed for incorporation in DRH Database. The proposals are to be prepared in the following format.

(1) DRH Template: the main body of the DRH Contents

The DRH contents should be described using the DRH Template which embodies all conceptual framework of DRH. Use English language to fill in the Template. Maximize visual illustration using photographs, charts and figures so that readers can easily understand the technology and

knowledge you offer. Note that DRH intends not to compile technical papers but to disseminate useful technology and knowledge to readers in understandable manners. The DRH Template (Ver.7.1) is downloadable at the DRH web-site (<http://drh.edm.bosai.go.jp/Project/Phase2/1Documents/temp.htm>) in with three kinds of files (Word, Excel and PDF).

The DRH Template consists of the following chapters. I. Heading, II. Categories, III. Contact Information, IV. Background, V. Descriptions, VI. Resources Required, VII Message from the proposer VIII. Self evaluation in relation to applicability, IX. Application examples, X. Other related parallel initiatives (if any), XI. Remarks for version upgrade

The examples how to fill in the DRH Template are shown in the proceedings of the Disaster Reduction Hyperbase (DRH) Contents Meeting, which took place in Kobe, Japan in March 2007. The proceedings can be accessed in the DRH project web-site (http://www.edm.bosai.go.jp/old/8_Proceeding/Proceedings.htm). (Note that the Proceedings uses the DRH Template ver.6, which is slightly different from ver.7.1.)

(2) Attached Documents: backup to the DRH Templates

You may attach documents in paper or report styles to be added to the DRH Template in order to explain about the technology effectively. However, be sure that main descriptions including illustrations should be made in the Template. The attached documents are to backup the DRH Template for better understanding by the readers.

6. DRH Manager and DRH Facilitators

Currently, the following individuals are serving as The DRH Manager and DRH Facilitators. They were nominated at the Second Annual Workshop on DRH Asia, Kobe, March 2007.

(1) DRH Manager

Hirovuki Kameda

- Principal Investigator, Disaster Reduction Hyperbase Asian Application (DRH-Asia) Project, Visiting Researcher, Earthquake Disaster Mitigation Research Center, National Research Institute for Earth Science and Disaster Prevention (EDM-NIED), Professor Emeritus, Kyoto University

(2) DRH Facilitators

(1) Implementation Oriented Technology (IOT)

- **Mohsen Ghafory-Ashtiany** (International Institute of Earthquake Engineering and Seismology (IIEES), Distinguished Professor, Iran), and
- **Hirovuki KAMEDA** (Visiting Researcher (EDM-NIED), Professor Emeritus (Kyoto University), Japan)

(2) Process Technology (PT)

- **Amod M. Dixit** (National Society for Earthquake Technology * Nepal (NSET), General Secretary & Executive Director, Nepal), and
- **Norio Okada** (Disaster Prevention Research Institute (DPRI), Kyoto University, Professor, Japan)

(3) Transferable Indigenous Knowledge (TIK)

- **Anshu Sharma** (SEEDS INDIA, Director, India), and
- **Rajib Shaw** (Graduate School of Global Environmental Studies, Kyoto University, Associate Professor, Japan)

(4) DRH Facilitator Supports (Those who support and actually join facilitation)

- **Takayuki Nakamura** (Coordinator for DRH Contents from Japanese institutions, Japan (IOT))
- **Hirokazu Tatano** (DPRI, Kyoto University, Professor, CASiFiCA-DRH chief promote ,Japan (PT))
- **Naho Ikeda** (EDM/NIED, Researcher, DRH Template coordinator, Japan (PT) Note that the group of DRH Facilitators is participated by researchers and NGO practitioners. This feature makes it possible to discussing bridges between research and practice, implementation strategy.)

7. Merits for Registration

As the DRH web-site is to link with other international networks for disaster reduction such as the UN/ISDR, proposed technologies are expected to be utilized by policy makers and practitioners in the world. In addition, since this project initiated at the World Conference on Disaster Reduction (WCDR), this project is to be reported at several governmental meetings such as the APEC Industrial Science and Technology Working Group, the ASEAN COST+3, etc.

8. Contacts

- Hiroyuki Kameda (DRH Manager and DRH Project PI, kameda@edm.bosai.go.jp)
- Takayuki Nakamura (DRH Contents Coordinator, nakamura.takayuki@jaxa.jp)
- DRH Administration (drhadmin@edm.bosai.go.jp)

TEL: -81-78-262-5528, FAX: -81-78-262-5527

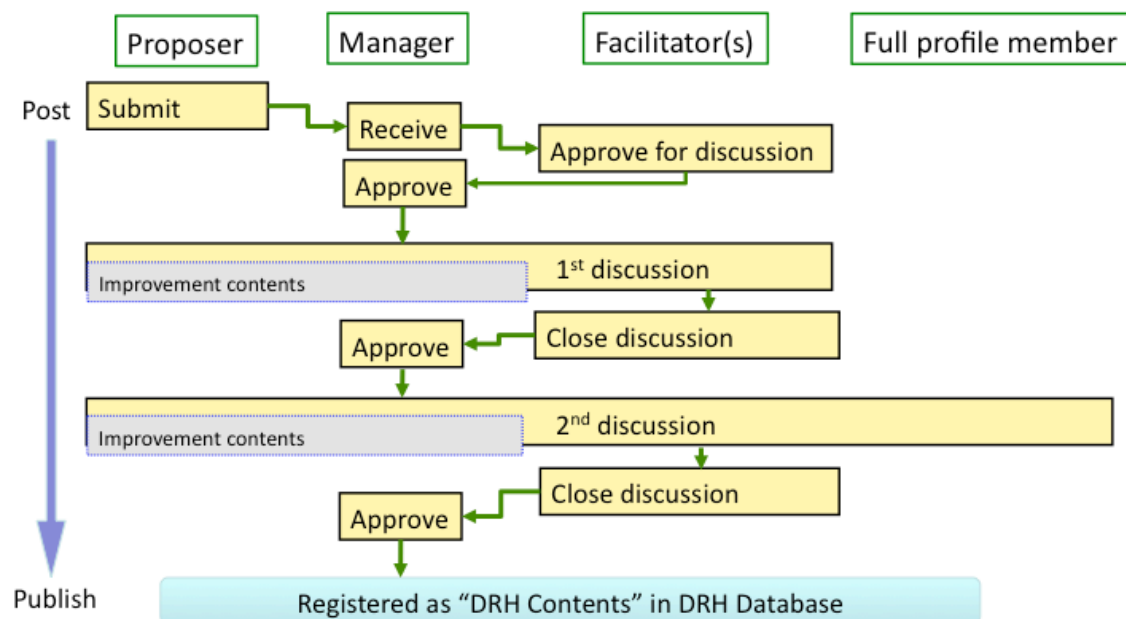
Address: Earthquake Disaster Mitigation Research Center, 4F Human Innovation Museum, 1-5-2 Waki-no-hama Kaigan-dori, Chuo-ku, Kobe 651-0073, JAPAN

DRH registration procedure

A. Procedure toward Registration in DRH Database

Your proposed DRH Contents are discussed at the DRH Forum by registered DRH members for possible enhancements with a lead of DRH Facilitators. When discussion converges, the proposals are registered in the DRH Database. The DRH Manager makes initial judgment on acceptance for discussion and final confirmation for registration in the DRH Database. The procedure consists of the following steps.

- (1) Manager's acceptance for discussion at DRH-Asia with appointment of Facilitators depending on the categories of Implementation Technology; i.e., IOT, PT, or TIK
- (2) Facilitator-Proposer discussion and possible enhancement of the manuscript
- (3) Discussion among registered DRH members (lead by Facilitators) and possible enhancement of the manuscript
- (4) Facilitators' judgment for finalizing discussion
- (5) Manager's confirmation and automatic registration in DRH Database



B. Criteria for Acceptance

The discussion process shall be based on the following criteria of judgments. Requests from Facilitators to the proposers for improving the submitted proposal manuscripts as well as Facilitators' guidance of discussion shall be made by referring to those criteria

(1) General Criteria for DRH Contents Acceptance

The criteria for accepting proposed DRH Contents are based on the following key items:

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

Plus

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

These criteria are based on conceptual developments by the DRH project participants (NGO and government practitioners, international organizations like UN/ISDR). Their underlying principle is "implementation strategy". They are different from conventional scientific journals.

* How to meet the General Criteria: Take note in the following when you write up.

i) To make it understandable to users:

- * Use terminology that can be understood by non-experts.
- * Incorporate as many illustrations as possible including photographs, diagrams and figures.
- * If you would like to include technical descriptions (such as scientific journal and paper, technical report, etc.), put them in attached files.

ii) To make it implementable (doable)

- * Give as detailed and quantitative explanations as possible in the comment boxes for process of implementation and resources required.

iii) To make it shown to be useful:

- * Incorporate as many Application Examples as possible.
- * It is desirable that application examples are practical applications.

(2) Criteria for each category of implementation technology

1) Criteria for Implementation Oriented Technology (IOT)

- * 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

2) 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

3) 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



Manual for DRH Contents Proposal Submission through DRH Forum

Direct Input on DRH Forum

Input directly on the DRH web-site as follows.

- Access the DRH web-site (<http://drh.edm.bosai.go.jp/>).
- Login using your registered e-mail address and your password as a DRH Full Profile Member.
- Click "Propose a technology" section of DRH Forum, then you see a page entitled "Propose a technology for disaster reduction".
- Confirm instructions Nos. 1 - 4 and, if you wish other support documents on the left-hand side of the page.
- On this basis, click "Start submission" in No.5, and begin your input in the text boxes and check boxes that are arranged in a format identical with DRH Template ver.7.

*** Input procedure should strictly proceed in the following order.**

- 1) **Click Check Boxes:** Begin with clicking the check boxes in "II Categories", and " VIII Self evaluation ".
- 2) **Treat Texts:** Input texts in all text boxes except check boxes. There are following two ways:
 - a. **Direct input:** Type-in directly in the text boxes or copy-paste from your original files. This is the most straightforward way of preparing the proposal.
 - b. **Via Excel File:** Prepare all texts in the DRH Template (ver.7) in an Excel file. Specify it in the box "Excel template file" at the top of this page. By clicking "upload", all texts in the Excel file will be automatically transferred to the corresponding text boxes on the web page. Before completing this step, be sure that you have done 1) (click check boxes). The Excel form of DRH Template(ver.7) is downloadable at http://drh.edm.bosai.go.jp/common/documents/DRH_Template_ver7_3.xls
*** Important: Use the most recent version downloaded from this link for your new proposal.**
- 3) **Treat Illustrations:** Main text boxes have a function of hyper-text editing same as Word; e.g., changing font type, alignment, font size, etc. Insert illustrations (photos, charts and figures, etc.) from the folders in your computer through "Insert/edit image" button in the tool bar of each text box. File types should be **JPEG, PNG, or GIF**. Use only alphanumeric, hyphen (-), and under bar (_) characters in the file name of illustrations.
- 4) **Attach Documents:** Add attached documents at "Add file" at the bottom of the page.
- 5) **Editing Manipulation:** You may edit and save (click "upload") until you think you have finished Input.
- 6) **Submit Proposal:** Finally, click "send to DRH manager" after "upload", and your proposal will be incorporated in DRH Forum for further treatments. After this, you can not re-edit your file until the Facilitator-Proposer discussion phase. So be sure that you have done your input works correctly as you think appropriate.

Template for DRH Database (ver.7.3)

Disaster Reduction Technology and Knowledge under Implementation Strategies

I. Heading		
1. Title		
2. Major significance (summary less than 60 words)		
3. Keywords		
II. Categories (Multiple answers allowed)		
4. Focus of this information Instruction for writers: - For definitions, see the DRH website. http://drh.edm.bosai.go.jp/	<input type="checkbox"/> Implementation Oriented Technology <input type="checkbox"/> Process Technology <input type="checkbox"/> Transferable indigenous knowledge	
5. Anticipated users	5-1. Practitioners	<p>- Mark main and sub categories freely. There are no hierarchical rules. - Items of "experts" may overlap with other categories. In that case, mark both categories.</p> <input type="checkbox"/> Community leaders (voluntary base) <input type="checkbox"/> Administrative officers <ul style="list-style-type: none"> <input type="checkbox"/> Municipalities <input type="checkbox"/> National governments and other intermediate government bodies (state, prefecture, district, etc.) <input type="checkbox"/> NGO/NPO project managers and staff <input type="checkbox"/> International organizations (UN organizations and programmes, WB, ADRC, EC, etc.) <input type="checkbox"/> Commercial entrepreneurs <input type="checkbox"/> Financing and insurance business personnel <input type="checkbox"/> Experts <ul style="list-style-type: none"> <input type="checkbox"/> Teachers and educators <input type="checkbox"/> Architects and engineers <input type="checkbox"/> Sociologists and political economists <input type="checkbox"/> Information technology specialists <input type="checkbox"/> Urban planners <input type="checkbox"/> Rural planners <input type="checkbox"/> Environmental/Ecological specialists <input type="checkbox"/> Others (Explain using the blank space below.) <div style="border: 1px dashed black; height: 20px; width: 100%; margin-top: 5px;"></div>
	5-2. Other users	<input type="checkbox"/> Policy makers <input type="checkbox"/> Motivated researchers <input type="checkbox"/> Local residents

<p>6. Hazards focused</p> <p>- Secondary hazard should be included in the categories of the original hazards.</p> <p>- Multi-hazard approach: Initiatives that focus on the combined risks of all hazards likely to occur in a given region.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Earthquake <input type="checkbox"/> Tsunami <input type="checkbox"/> Volcanic eruption <input type="checkbox"/> Landslide <input type="checkbox"/> Mudflow <input type="checkbox"/> Dust storm <input type="checkbox"/> Cold wave <input type="checkbox"/> Heat wave <input type="checkbox"/> Zud <input type="checkbox"/> Cyclone/ Typhoon <input type="checkbox"/> Storm surge <input type="checkbox"/> Flood <input type="checkbox"/> Flash flood <input type="checkbox"/> Glacial Lake Outburst Flood (GLOF) <input type="checkbox"/> Snow avalanches <input type="checkbox"/> Epidemic <input type="checkbox"/> Wildfire <input type="checkbox"/> Drought <input type="checkbox"/> Desertification <input type="checkbox"/> Climate change impact <input type="checkbox"/> Land degradation <input type="checkbox"/> Multi-hazard (Multi-hazard approach) <input type="checkbox"/> Others (Explain using the blank space below. Other hazards, disaster chains, etc.) <hr style="border-top: 1px dashed black;"/>
<p>7. Elements at risk</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Human lives <input type="checkbox"/> Human networks in local communities <input type="checkbox"/> Business and livelihoods <input type="checkbox"/> Infrastructure <input type="checkbox"/> Buildings <input type="checkbox"/> Information and communication system <input type="checkbox"/> Urban areas <input type="checkbox"/> Rural areas <input type="checkbox"/> Coastal areas <input type="checkbox"/> River banks and fluvial basin <input type="checkbox"/> Mountain slopes <input type="checkbox"/> Agricultural lands <input type="checkbox"/> Cultural heritages <input type="checkbox"/> Others (Explain using the blank space below.) <hr style="border-top: 1px dashed black;"/>

III. Contact Information		
8. Proposer (s) (Writer of this template)	8-1. Name (s)	
	8-2. Position and affiliation	
	8-3. Contact (at least one of mailing address, e-mail address, tel. & fax.)	
9. Place where the technology/ knowledge originated	9-1. Country(ies)	
	9-2. Location(s)	
10. Names and institutions of technology/knowledge developers		
11. Title of relevant projects if any		
12. References and publications		
13. Note on ownership if any		
IV. Background		
14. Disaster events and/or societal circumstances, which became the driving force either for developing the technology/knowledge or enhancing its practice		
V. Descriptions		
15. Feature and attribute (Aim and key mechanism to achieve the aim)		

16. Necessary process to implement (Procedure and major actors)	
17. Strength and limitations (Positive and negative sides)	
18. Lessons learned through implementation if any	
VI. Resources required	
19. Facilities and equipments required	
20. Costs, organization, manpower, etc.	
VII. Message from the proposer (if any)	
Instruction for writers: - Any message from you to readers regarding intention, interpretation, utilization, etc. of this technology/knowledge.	
21. Your message	

VIII. Self evaluation in relation to applicability

22. How do you evaluate the technology/knowledge that you have proposed?

Instruction for writers:
- Only a single answer allowed

"It is a technology/knowledge that..."

- a. has **high application potential** verified by implementation in various field sites.
- b. has **fair applicability** demonstrated by implementation in one or more field sites.
- c. is shown to be **effective** based on **case studies/experiments in field sites**.
- d. is shown to be **effective** based so far only on **scientific experiments in laboratory**.
- e. Others (Explain using the blank space below.)

23. Notes on the applicability if any

IX. Application examples

Instruction for writers:
- Fill in this section with the examples that the technology/knowledge was applied to any fields. You may also write about ongoing projects.
- Writers who marked "a" and "b" in Section VIII are expected to provide as many examples as possible. Those who marked "c" to "e" are also strongly recommended to fill in here, but not compulsory.

No.1 (E1)

E1-1. Project name if available

E1-2. Place
- Specify as much as possible.

E1-3. Year

E1-4. Investor

E1-5. People involved
- Indicate all contributors with their titles when available.

E1-6. Monetary costs incurred
- Show the breakdown with approximate cost for each facility or equipment, if possible.

E1-7. Total workload required (Time frame and human resources)

E1-8. Evidence of positive results (Tangible / intangible)

No. 2 (E2)

E2-1. Project name if available

E2-2. Place

E2-3. Year

E2-4. Investor

E2-5. People involved

E2-6. Monetary costs incurred			
E2-7. Total workload required (Time frame and human resources)			
E2-8. Evidence of positive results (Tangible / intangible)			
No. 3 (E3)			
E3-1. Project name if available			
E3-2. Place			
E3-3. Year		E3-4. Investor	
E3-5. People involved			
E3-6. Monetary costs incurred			
E3-7. Total workload required (Time frame and human resources)			
E3-8. Evidence of positive results (Tangible / intangible)			
No. 4 (E4)			
E4-1. Project name if available			
E4-2. Place			
E4-3. Year		E4-4. Investor	
E4-5. People involved			
E4-6. Monetary costs incurred			
E4-7. Total workload required (Time frame and human resources)			
E4-8. Evidence of positive results (Tangible / intangible)			
No. 5 (E5)			
E5-1. Project name if available			
E5-2. Place			

E5-3. Year		E5-4. Investor	
E5-5. People involved			
E5-6. Monetary costs incurred			
E5-7. Total workload required (Time frame and human resources)			
E5-8. Evidence of positive results (Tangible / intangible)			
X. Other related parallel initiatives (if any)			
XI. Remarks for version upgrade			