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

Asian Science and Technology Forum Tsukuba Seminar
"International Workshop on Information Platforms for Disaster Reduction" (IPDR Workshop)
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Scheme of the DRH-Asia Project

* Disaster Reduction Hyperbase-Asian Application featured as:
  + A web-based facility
  + To disseminate information on appropriate disaster reduction technologies
  + To aid disaster reduction policy in Asian countries (two ways: developing & industrial)
  + Resource of “knowledge & wisdom”
  + Multi hazard disaster reduction
How DRH-Asia emerged

* Implementing the Hyogo Frame for Action 2005-2015 (HFA) adopted in the UN World Conference on Disaster Reduction (WCDR).

* A major component of "Portfolios for Disaster Reduction" - a common vehicle for sharing information, proposed by the government of Japan at WCDR to contribute to HFA

* Major sponsor = MEXT

* Contributions (financial, manpower and in-kind) by participating institutions in the international community

* Emphasis on the Asian context, but it will collaborate with partners who will make developments for other regions

* Coordination by UN/ISDR Secretariat, it is aimed at forming an alliance of DRH-Global.
Information provided by DRH-Asia

**Implementation technology**

+ **Implementation oriented technology**: Products from modern R&D that are practiced under clear implementation strategies

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

+ **Transferable indigenous knowledge**: 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
Proposed General Criteria for DRH Contents

Acceptance

(This set of criteria is provisional and is to be used in the "exercise review" by the Facilitators. It is subject to further discussion before it is finalized by Oct. 2007)

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

Plus

- Criteria for each category
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

ver. 040425 (EqTAP rep) 070917 (Stresa)
GIS (RARMIS-based) used for post-earthquake reconstruction management (Duzce, Turkey)

source: Kakumoto, EDM-NIED

(implementation oriented technology)
(implementation oriented technology)

+ Reduction of tsunami flow pressure in greenbelt-
  (mangrove, waru, etc.)
  (EqTAP Project: PARI, Japan and CDRC, Indonesia)

*Can not stop tsunamis but can reduce their effects.
*Inexpensive, no "high-tech" required
*Design guideline developed through lab tests and numerical simulation
*Being implemented in Sulawesi Island, and other 14 sites in Indonesia.
Masonry buildings = A major killer in earthquake disasters
(Tangshan, 1976; Bam, 2003; Kashmir, 2005; many other E.Q.'s)

Cannot avoid using local materials (brick, blocks, adobe)

Enhancement of design and practice (EqTAP Project; Tohoku Univ., Japan and Dalian Univ. Tech, China)
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
Seismic enhancement is possible and practical!

Demonstration test activities
(Nepal, India, Afghanistan, Tajikistan, Iran, Aceh, WCDR Kobe, Pakistan: coordinated by NSET-Nepal, UNCRD and other participating institutions)

Confirmed by Large Gathering of Stakeholders

End of Test
“Collapse” of Ordinary Model & “Damage” in Improved Model

(source from Sharma: CMM2)

Patanka-Navajivan-Yojna (PNY) Project, India: following 2001 Gujarat E.Q.
(process technology)

(EqTAP Project; EDM-NIED, Japan and City of Marikina, Philippines)

+ Disaster reduction planning scheme
  - focusing on stakeholder involvement

1) A "process technology"
   *Series of coordinated workshops*
   (#1: Problem identification, #2: Risk assessment & goal setting, #3: Planning, #4: Implementation, #5: Resource assessment and priority evaluation)

2) Core "implementation strategies"
   *Local gov. and/or community leaders: Generation, compilation, and integration of ideas*
   *Researchers: Consistently being facilitators*
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 useful in disasters
• Is applied or applicable in other communities or generations
(transferable indigenous knowledge)

(Bangladesh) FLOOD MITIGATION (Homestead Raising)

(Japan) "Mizuya" (Flood house)

(by Moloy Chaki: CMM2)

(NIED-KU survey team)
Expected users of DRH

- direct users of the technologies/knowledge
- users of information in DRH
Specific features

(1) **DRH Template**

The DRH contents are compiled according to the DRH Template, a format that was established through ample discussion among DRH members. It incorporates

I. Heading,
II. Categories,
III. Contact Information,
IV. Background,
V. Descriptions,
VI. Resources Required,
VII. Self evaluation in relation to applicability,
VIII. Application examples,
IX. Other related parallel initiatives (if any), and
X. Remarks for version upgrade.
(2) **DRH-Asia web site components**

The DRH-Asia web site consists of the following three major components

a) Access to tested *implementation technology database*, such as implementation oriented technology, process technology, transferable indigenous knowledge (DRH Database)

b) *Forum* for facilitating collation, testing and dissemination of mitigation models (DRH Forum)

c) Link with *relevant initiatives* (DRH Links)
(3) **Open source, Multi-lingual search**

* In-house development / *Due November 2007

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**Supported contents list**

Members rating by signed ballot & with comments
(4) Organizational framework

+ Project Title: Disaster Reduction Hyperbase–Asian Application
+ Principal Investigator: Hiroyuki Kameda
+ Institution-in-Charge: National Research Institute for Earth Science and Disaster Prevention (NIED)

<table>
<thead>
<tr>
<th>(1) Coordination nodes</th>
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<tbody>
<tr>
<td>1) Coordination of overall project management: NIED (Inst.-in-Charge) / Kyoto Univ. / *UN-ISDR</td>
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<tr>
<td>2) Policy related coordination (GoJ): Cabinet Office (Disaster Management) / MEXT (Office for Disaster Reduction Research)</td>
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<td>3) Coordination for contents development: ADRC / *UNESCO /</td>
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<th>(2) Development nodes</th>
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<tr>
<td>1) Development of DRH-Asia: NIED / collaborating Asian institutions</td>
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<tr>
<td>2) DRH for Europe – Africa (coordinated developments) / *EC/JRC</td>
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<td>3) Link with ISDR information platform / *UN-ISDR</td>
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<th>(3) Information nodes:</th>
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<tr>
<td>Survey &amp; identification of items for DRH contents and their documentation</td>
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<tr>
<td>NIED / Kyoto Univ. / *Beijing Normal Univ. &amp;</td>
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<td>*NDRC (China) / *NSET (Nepal) / *Bandung Tech. &amp; CDRC (Indonesia) / *PHIVOLCS (Philippines) /</td>
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<tr>
<td>*SEEDS (India) / *BDPC (Bangladesh) / *IIEES (Iran)</td>
</tr>
<tr>
<td>*Bogacici Univ. (Turkey) / *UNESCO / other collaborating institutions</td>
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<Description of activity nodes>

(1) Coordination node: Institutions to conduct overall project management and international coordination for the development and dissemination of DRH-Asia

(2) Production node: Institutions to develop the DRH-Asia on a web system, and those who will develop DRH for areas outside Asia

(3) Information node: Institutions to develop information resources to constitute contents of DRH-Asia
(5) **Basic principle: Tsukuba Resolution 2006**

We welcome any institutions and individuals to join DRH activities who agree to conform with the Tsukuba Resolution 2006, which declared

1. Development of the Disaster Reduction Hyperbase (DRH) is a significant contribution to reducing vulnerabilities and enhancing integrated disaster risk management,

2. DRH will be an open and interactive database of implementation technologies, will provide a forum for facilitating collation, testing, dissemination of mitigation models, and will link with relevant initiatives.

3. Within a scheme of coordination, development and information nodes, participants will mobilize resources (organizational, fundraising, and in-kind) for contributing to successful achievement of the DRH Mission.

Currently: **Work site** (Sep. 1, 2006)

**DRH Forum functioning**

**References**

All DRH Project documents are downloadable here (meeting & WS records, papers, presentations, posters, etc.)

Visit (http://www.edm.bosai.go.jp/old/m-n.html)