# Achieving DRR Technology Sharing Through Case Studies and Community Activity

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**ABSTRACT:**
According to the expert survey from the 6th AMCDRR in 2014 and 3rd WCDRR in 2015 side event, the DRR technology sharing platform should be changed from an operator-based technology provider to a community-based technology provider and the practical application of the case studies were found to be more valuable than the DRR technology itself. The platform defines a foundation that provides various case studies as well as community activity and its objective is to allow demanders, suppliers and experts to share DRR technology. This paper illustrates a technology sharing platform that is focused on problem-solving case studies and community activity for the global network on Disaster Risk Reduction (DRR).

**KEYWORDS:**
Problem-solving case study, Community, Technology, Sharing, DRR

## 1. INTRODUCTION

As most natural disasters occur repeatedly, the damage can be reduced by sharing and utilizing prevention information and analytical data based on past disasters. The United Nations has made various efforts, including the International Decade for Natural Disaster Reduction (IDNDR) to reduce the occurrence of natural disasters internationally through scientific and technological solutions. In fact, it has established the International Strategy for Disaster Reduction (ISDR) solely for this issue as a follow-up action, and the institution has been in active operation since 1999. In addition, the Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) has been held since 2010 to allow engagement of high-level government officials on disaster management and other stakeholders including parliamentarians and science and technology groups [1].

At the 4th AMCDRR held in Incheon, Korea in October 2010, Incheon declaration and Road Map and Action Plan (REMAP) for Disaster Risk Reduction (DRR) through Climate Change Adaptation (CCA) were adopted by ministers and high-level officials from 53 countries in Asia and the Pacific through several multi-stakeholder consultations including UN institutions and NGOs. The key issues of the 4th AMCDRR were to share technology and information for DRR. Of particular importance, design plans for establishing a web-based platform for collecting dispersed data and technology on climate change and disaster risk reduction were developed [2].

On June 25th, 2014 there was a side event at the 6th AMCDRR where 42 representatives of multiple Asian-Pacific countries attended the presentation of the DRR Technology Sharing and Platform Demonstration. As a result of the side event, two conclusions were reached among the representatives. First of all, the sharing of DRR technology through a web based platform among the Asian-Pacific countries was deemed necessary in order to fully equip all parties with the technology. The second consensus reached was that the three types of case studies in the technology in practice were more important than the DRR technology content itself. The practical application aspects of the case studies were found to be more valuable for the Asian-Pacific countries.
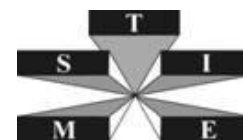
In addition, the expert survey from 3rd WCDRR in 2015 side event demanded that the DRR technology sharing platform should be changed from an operator-based technology provider to a community-based technology provider.

Therefore, the platform is concerned with a foundation that provides various case studies as well as community activity and their objective is to allow demanders, suppliers and experts to share DRR technology. This paper illustrates problem-solving case studies and community activity through a technology sharing platform for the global network on disaster risk reduction.


## 2. THE CORE CONTENTS OF THE PLATFORM [3]

### 2.1. Case Study
Technology under practice illustrates the use of DRR technology through case studies, which are mainly operated by the suppliers. This includes the problem-solving case studies, the project, and the technology. Technology experts provide input such as ideas, advice and insights based on the case studies.

#### 2.1.1 Problem-Solving Case Study
A problem-solving case study answers the following sections: First, the description in terms of ① the case summary (When, Where, What, Why, How) and ② the accompanying case materials (Photos, Videos, Statistics etc). Second, the process organized by the following questions: ① What is the problem of the case and its cause? ② Which techniques (systems, tools etc) were used to analyze the cause? ③ Has the case been recovered, or if it has been delayed, what is the reason? ④ How did the case influence the economy and society? ⑤ After the incident, have there been any changes in law or policy?[1]

The following image (Figure 1) shows various problem-solving case studies on the platform.



Figure 1 A list of problem-solving case studies
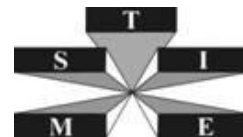
The Mt. Umyeon landslide problem-solving case study is shown with its description and location (Figure 2).
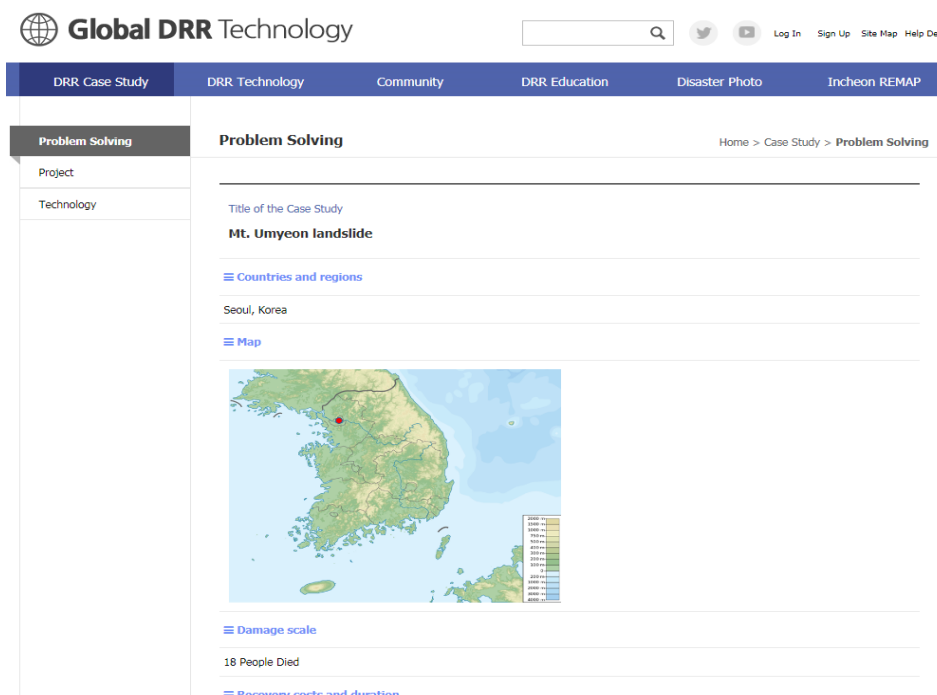


Figure 2 A image of Mt. Umyeon landslide problem-solving case study

The following image (Figure 3) shows the description (functions), specification, image, and price of the applied technology on the Mt. Umyeon landslide case study.
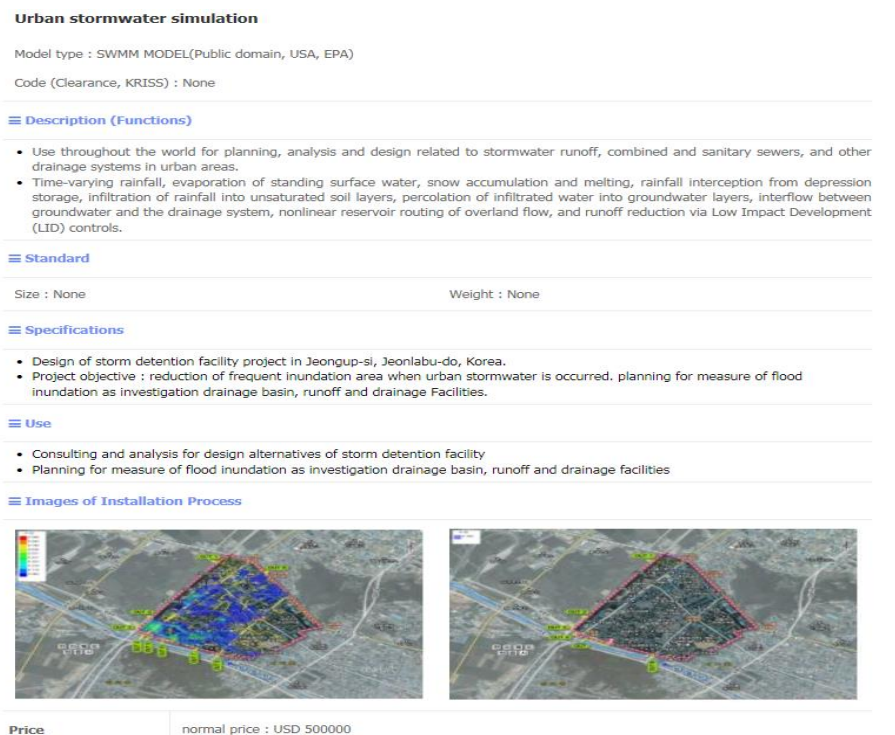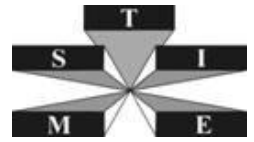


Figure 3 An applied technology on the Mt. Umyeon landslide case study.

The following image (Figure 4) shows information on the technology manufacturer, supplier, and customer.

≡ **Supplier**

| | |
|---|---|
| **Country of Origin** | KOREA. |
| **Company Name** | HECOREA Inc. |
| **Address** | 405, Woorim venture town2, Seoul, KOREA |
| **Web Site** | www.hecorea.com |
| **Contact** | +82 2 572 4320 |
| **A person in charge : Name** | LEE, Jinyoung |
| **A person in charge : Contact** | +82 2 572 4320 |
| **A person in charge : e-Mail** | kdlee@hecorea.co.kr |

≡ **Manufacturer**

| | |
|---|---|
| **Country of Origin** | USA, EPA |
| **Company Name** | D Technology |
| **Address** | |
| **Web Site** | www.hecorea.com |
| **Contact** | |

Figure 4 Information on the technology manufacturer, supplier, and customer
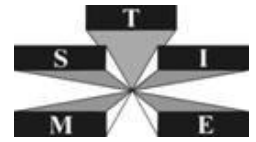
The following image (Figure 5) shows that the applied technology belongs to a system category under the DRR technology classification and describes the assessment and forecasting process. It also shows several images derived from the technology. Subject matter experts or demanders can provide their opinions or ask questions about the case study.
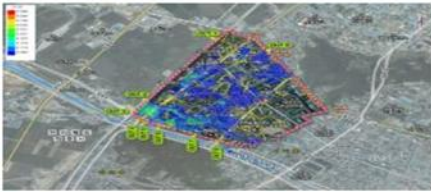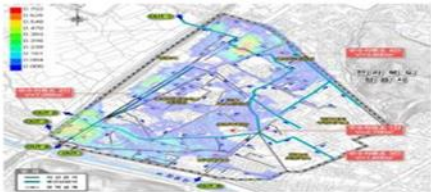


Figure 5 several images derived from the technology

In order to effectively convey information on the Problem Solving Case Study, various forms of educational resources such as video and static images etc., are provided through the education menu.
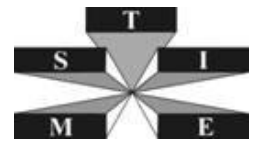
The following image (Figure 6) shows an example page of the Mt. Uymeon landslide to show a problem solving case study for DRR educational purposes.



Figure 6 An example page of the Mt. Uymeon landslide for DRR educational purposes.
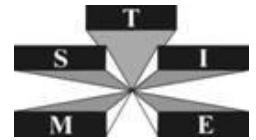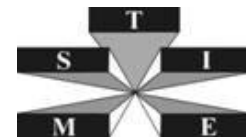
*2.1.2 Project Case Study*

A project case study answers the following questions: First, what do we expect to discover from this project? Second, how do you collect information on the technology? Third, what are the features of the technology? Fourth, for which types of disaster can the technology be utilized? Fifth, what are the effects of the technology? Sixth, what is the post-management of the technology?

The following image (Figure 7) shows a list of several project case studies on the platform.



Figure 7 A list of several project case studies
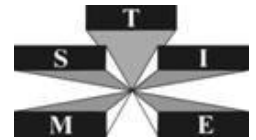
*2.1.3 Technology Case Study*

The technology case study questions are: First, please explain what type of technology has been installed by your company with respect to its location, place and situation (focus: overview). Second, please explain the background of the technology's installation. Third, what were the effects of building the technology according to the user's requirements?

The following image (Figure 8) shows a list of technology case studies on the platform.



Figure 8 A list of technology case studies

## 2.2. Community

In order to enable participation of various stakeholders and experts, the platform is aimed towards generating activity in the community. It is a space where users, providers, and experts gather to discuss disaster reduction or disputable points. Diverse opinions on disaster reduction are shared through international networks within the community.

The following image (Figure 9) shows a menu that allows experts to discuss issues pertaining to flooding, drought, storms, extreme temperature, tsunami, and earthquakes.
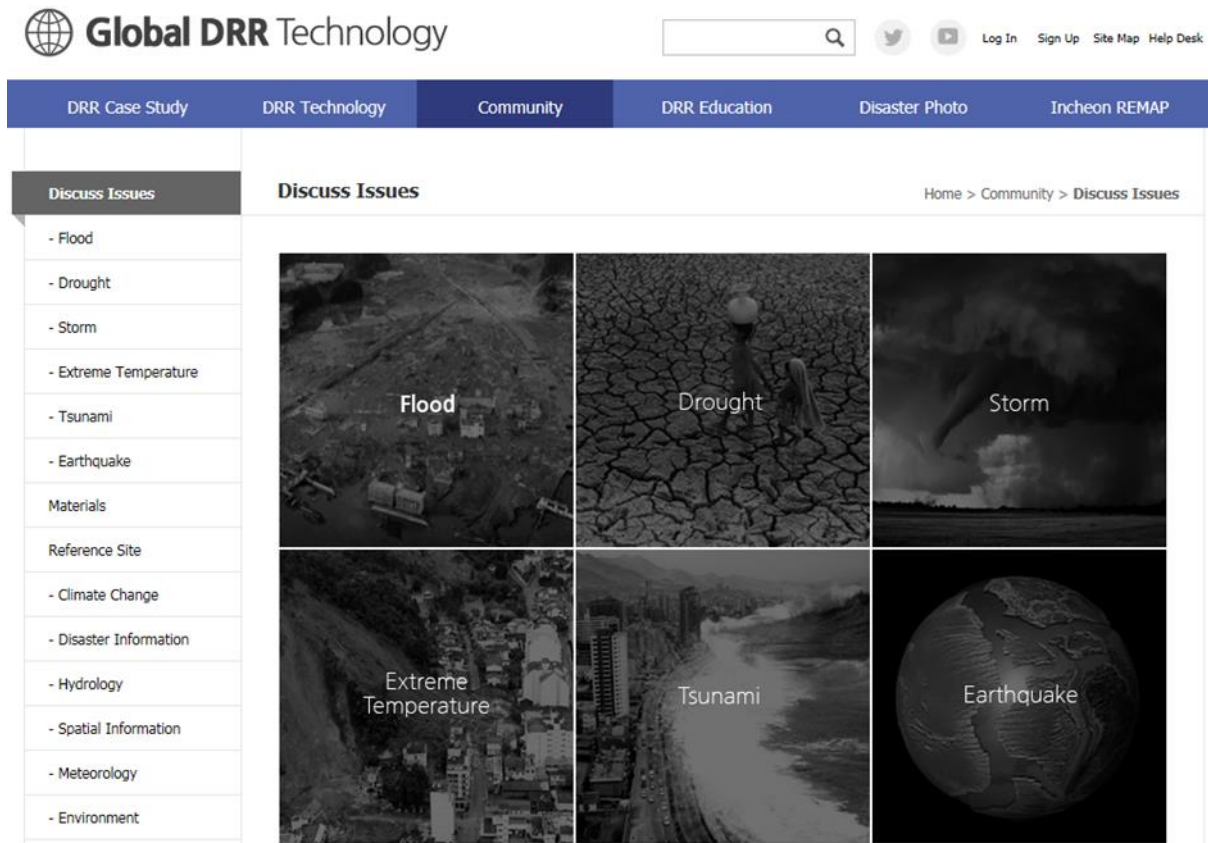


Figure 9 A menu that allows experts to discuss issues pertaining to few disaster types

## 2.3. Technology

Technologies related to Disaster Reduction are provided. The fundamental component of the platform relies on detailed information which includes structured technology such as technology itself, systems, tools, analytical models, and non-structured technology such as standards, codes, process, and consulting. It is easy to find information through keyword search or usage of checkbox on disaster prevention technologies.

The following image (Figure 10) shows a classification of DRR technology and a category of decision-making processes.
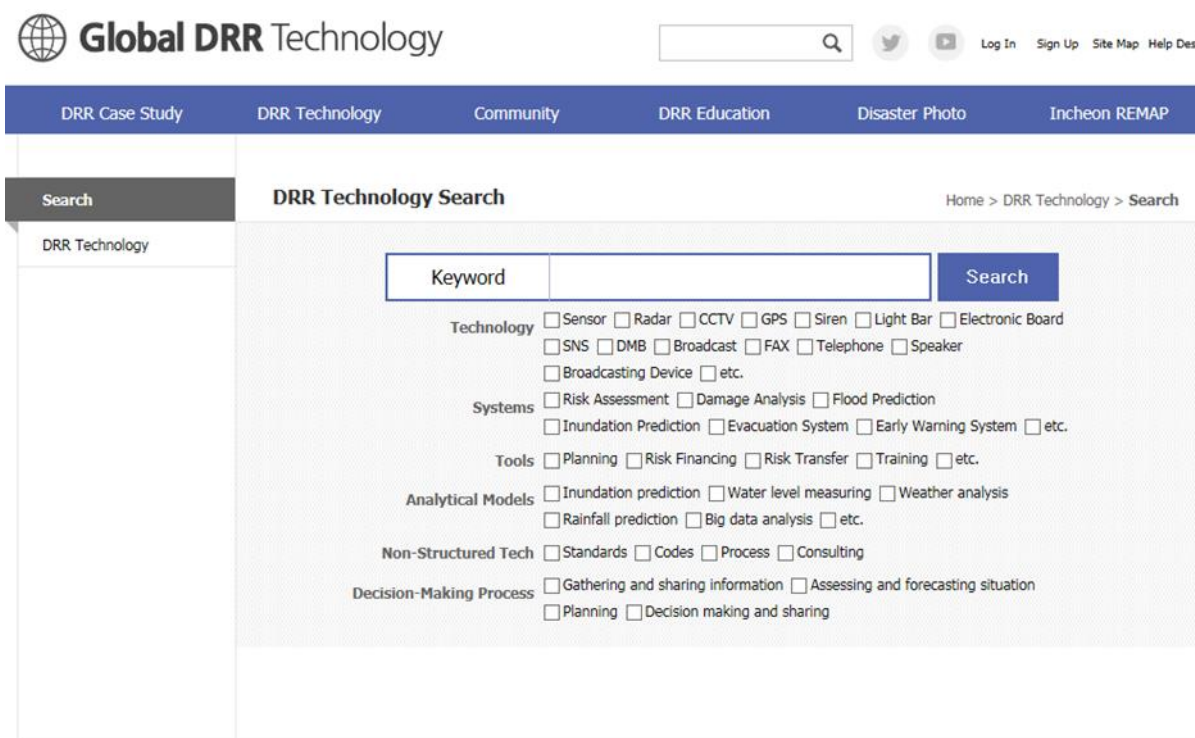


Figure 10 A classification of DRR technology and a category of decision-making processes

General information of the technology includes its name, a brief introduction giving a short product description, specifications, its use, etc. Additional information show price, period off delivery, warranty, the supplier information, classified type, etc. It also notes information related to performance results, certification, patent, etc.
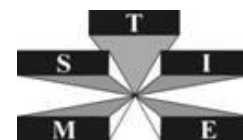
The following image (Figure 11) shows a list of DRR Technology. Each technology includes expert opinions, evaluations, and information on its supplier.



Figure 11 A list of DRR Technology

## 3. CONCLUSION

This paper introduces a platform for sharing DRR technology information on DRR technology which includes the case studies and technology in practices. In order to enable participation of various stakeholders and experts, the platform is aimed towards generating activity in the community. This involves technology in practices which includes technology, project, and problem-solving case studies. Above all, this platform will be successful with critical problem-solving case studies and community activity. Various international seminars from 2013 through 2015 will be hosted in order to gain greater support and momentum for successfully implementing this platform. We expect heightened interest and participation levels from states, businesses and organizations by stimulating activities on disaster risk reduction technology and information sharing, which will further strengthen disaster prevention capacity in the world around countries.

## REFERENCES

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Korea NEMA and UN ISDR. (2010). The 4th Asian Ministerial Conference on Disaster Risk Reduction. Registration No 11-1660000-000629-14
http://www.pr4gdm.org