3-3. Framework of the Natural Disaster Databases

One of the factors that are very important in the establishment of effective countermeasures for future natural disasters is the information on previous disasters, including what measures were taken for what scale of natural disasters, how effective or ineffective they were, and what lessons were learned from the experiences. A comprehensive database of natural disasters that have occurred in this century in Asia will provide a valuable asset in the next century.

At present, several organizations have their own statistical databases on natural disasters that have occurred in this century. Natcat, Munich Reinsurer, has accumulated information on more than 15,000 disasters dating back as far as 79 A.D., Sigma, a Swiss reinsurer, has a database containing information on more than 7,000 disasters which have occurred since 1970, and EM-DAT of CRED (Centre for Research on the Epidemiology of Disasters, Universite Catholique de Louvain) in Belgium has information on more than 12,000 disasters dating back to 1900. In addition, disaster information is disseminated over the Internet by various organizations, including UN OCHA that provides Situation Reports on major disasters experienced after 1980.

At the ADRC International Meeting (annual meeting of member counties) in December 1999, ADRC stressed the importance of making good use of these existing databases, as well as the importance of constructing a comprehensive database of natural disasters in the 20th century, which is linked up with the existing databases. To promote such information networking globally, ADRC became a member of GDIN (Global Disaster Information Network) in April 2000, and proposed the use of a global disaster ID system at the GDIN conference, Canberra, in March 2001. The disaster IDs proposed by ADRC was launched as a pilot project in 2001. Since 2002, ADRC has been encouraging various activities for more effective sharing of disaster information as an Inter-Agency Task Force member of ISDR. In 2003, ADRC co-organized a GLIDE technical meeting with UN/ISDR and Relif Web, the intentions of which were well received by many international organizations

3-3-1. Current Situation of Disaster Information Sharing

Many organizations collect and analyze disaster information relevant only to their own priority themes, and provide some of the results through media including the Internet. Many of these organizations link their websites to relevant organizations to share information.

Among such organizations, UN OCHA has already started to provide highly reliable disaster information. UN OCHA has set up ReliefWeb on the Internet to provide disaster information collected from all over the world. ReliefWeb contains detailed Situation Reports and other references on disasters experienced after 1980. These resources are available on document basis. Thus, the site allows access to the synopses of disasters that have occurred during the past 20 years, and of countermeasures taken in response.

UN OCHA opened its Kobe Office in August 2001, and has been providing disaster information on a 24/7 basis from three cities, Kobe, Geneva and New York.

CRED in Brussels, Belgium, provides statistic data mainly of natural and technological disasters that have occurred with more than 10 fatalities since 1900 over the Internet.

In addition, LaRED based in Latin America collects and provides information on small- to medium-scale natural disasters that are neither included in ReliefWeb nor CRED.

In addition to the organizations above, universities and institutes around the world have information on disasters that have occurred in their respective areas and information related to the field of interest, and provide some of their data over the Internet.

As for some disasters in past, typically floods or droughts, however, it is often difficult to determine the exact date of the occurrence. Recorded dates of disasters may vary depending on databases. It also frequently is the case that a disaster is classified and named differently from source to source. These factors make it difficult to identify one disaster record available from one source with those from another, especially when the disaster happened in the distant

past.

As for disasters that have occurred in Japan, comprehensive detailed references are available including the "Chronological Scientific Tables" and "Meteorological Yearbook." A list of major disasters in Japan registered on the "Disaster Prevention White Paper" is available for download on the Internet. The Disaster Reduction and Human Renovation Institution of Hyogo Prefecture launched a comprehensive disaster database using the GLIDE system, a global disaster ID system to be explained in Section 3-3-3, for ease of information sharing.

3-3-2. Asia Natural Disaster Data Book in the 20th Century

Natural disasters can have serious impact on social life in general and in particular on economic development.As revealed by the statistics over the past 100 years, Asia is more prone to natural disasters than any other region of the world, and accounts for more than 90% of the world's entire affected population and 50% of both the world's total death toll and economic losses. Therefore, it is very important to analyze individual disaster events in the past while examining their general tendencies over years from the perspective of development mechanism.

Based on its agreement with Center for Research on the Epidemiology of Disasters (CRED), Catholic University of Louvain, ADRC has been analyzing the data of EM-DAT of CRED.

In July 2000, ADRC published the "Asia Natural Disaster Data Book in the 20th Century," which incorporates the member country data accumulated on EM-DAT into tables, and diverse statistics and analyses. In August 2002, its revised edition, "Asia Natural Disaster Data book in the 20th Century Vol.2," was also published.

In addition, ADRC published a report titled "Natural Disasters Data Book 2002" in March 2003. Through these data books, ADRC provides helpful information to policy-makers, academicians, as well as grassroot-level activists involved in community disaster prevention activities.

3-3-3. "GLIDE" Proposed by ADRC

1) Disaster information sharing based on GLobal unique disaster IDEntifier (GLIDE) number

There are many organizations that design and develop their own disaster databases for free access over the Internet. When a disaster occurs, information is distributed over the Internet not only by organizations in the affected country but also by organizations and mass media in other countries. When a disaster occurs in any part of the world, ADRC collects information by searching the websites of relevant organaizations and mass media all over the world, or by sending e-mail to the contact person in the affected area. The "ADRC Latest Disaster Information" page on the website is the results of ADRC's efforts in information collection.

The problems with the conventional information collection include:

(1) It is necessary to search the Internet for websites of relevant individual organizations every time a disaster occurs.
(2) There is no standardized naming protocol for disasters. With different organization naming same disasters differently, even search engine such as Google or Yahoo sometimes return no hits.
(3) Website links may be lost when the structure of the database or homepage of an
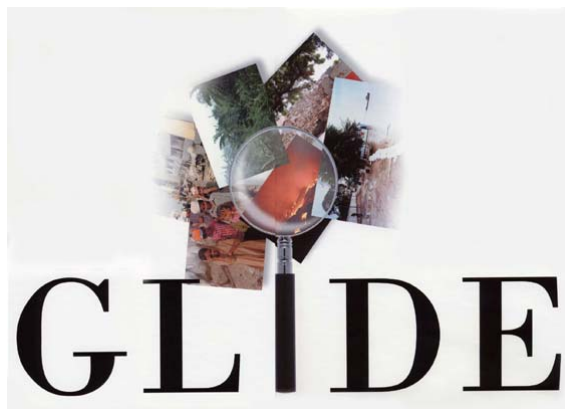
organization is changed.

The GLobal unique disaster IDEntifier (GLIDE) number system will be a solution to these problems. The GLIDE system will significantly improve the efficiency of database search and Web search for information on past and on-going disasters.

At the Global Disaster Information Network (GDIN) Conference held in Canberra, Australia in March 2001, ADRC proposed to develop a standardized code system for managing information on disasters around the world. This proposal was accepted and launched as a pilot project.

In 2003, ADRC and OCHA ReliefWeb jointly developed with technical assistance from LaRED, a system for issuing GLIDE numbers to disasters immediately after they occur. Moreover, ADRC, jointly with CRED, IRI/Columbia University, USAID/OFDA, WMO, IFRC, UNDP, and the ISDR Secretariat, discussed how to improve the format of the GLIDE number, as well as strategies for the promotion of the GLIDE system.

The GLIDE number format was revised in 2003, and GLIDE numbers are now issued in the following format.

AA-BBBB-CCCCCC-DDD-EEE

AA: Disaster classification (Code in the table is for temporary use. WMO will submit a revised proposal)

Drought	DR
Earthquake	EQ
Epidemic	EP
Extreme Temperature	ET
Insect Infestation	IN
Flood	FL
Slide	SL
Volcano	VO
Wave / Surge	WV
Wild Fire	WF
Wild Storm	ST
Complex Emergency	CE
Technological	AC

BBBB: Year of occurrence (4-digit numeric figure)
CCCC: Serial number by year
DDD: Country code (ISO code. e.g., JPN for Japan)
EEE: Region code (e.g., 013 for Tokyo)

The region code at the end was added for the convenience of the user countries in organizing their mational databases. This part is not included in GLIDE numbers actually circulated.

The pilot phase of the GLIDE system started in January 2002. The GLIDE generation and notification procedure is as follows:

(1) Upon the occurrence of a disaster, ReliefWeb generates a new GLIDE number and notifies CRED via e-mail.
(2) For disasters other than ones generated in 1 above, CRED generates GLIDE numbers within one week of the occurrence.
(3) CRED informs ADRC and other related organizations of the GLIDE numbers generated in 1 and 2 above on a weekly basis via e-mail.
(4) ADRC dispatches the GLIDE numbers to individual organizations through the "ADRC Highlights" communication channel.

This procedure is temporary and is to be replaced by a system currently under construction at GLIDEnumber.net for full automation of the entire process from GLIDE number issuance

to notification (due in May 2004).

A new GLIDE number is entered into the database currently in operation in the following three steps:

(1) Add a GLIDE column to the database table on the screen.
(2) Refer to data on past disasters at http://www.cred.be/emdat/disdat1.htm.
(3) Search for the name and GLIDE number of the disaster registered. Enter the appropriate number into the column created in step 1 above.

Then, the GLIDE number is used as the key to retrieve the necessary data from the database:

(4) Use the GLIDE number as the key to create a program for retrieving and displaying the necessary data from the database.

An organization that already allows open access to its databases has only to make minor adjustments to the existing program, and can add quick access links for visitors to jump to other sites containing relevant information. To add such a link, use the following method:

(5) Create a button that contains a URL link to a relevant organization's site and the relevant GLIDE number in it.
(6) Apply to GLIDEnumber.net for the registration of your database.

Now the organization has its database connected to other databases all over the world via the GLIDE system.

In order to further promote the use of the GLIDE system, ADRC and OCHA RelifWeb have developed and started operating GLIDEnumber.net (http://glidenumber.net/). The GLIDEnumber.net provides services and functions such as explanation of the GLIDE system, search of the latest disaster information, registration to the GLIDE mailing list, registration for GLIDE membership, and generation of new GLIDE numbers. ADRC expects GLIDEnumber.net to help a wider use of the GLIDE system among the member countries and disaster-related organizations. Databases connected via the GLIDE system will provide the following advantages:

☐ A parameterized search function allows easy association between pieces of disaster information possessed by various organizations.
☐ A search engine developed with the focus placed on parameters of particular importance to user organizations allows a one-stop search and display of all necessary relevant data, eliminating the need of repeating search for data possessed separately by individual organizations (Note, however, the problem described in the following section).
☐ Accordingly, changes in individual organizations' database designs do not prevent the user from viewing the same data by directly referring to the GLIDE number. Neither will viewers have much trouble in changing the search method.

2) Challenges in implementing the system

There are some inherent challenges in effective operation of this system:

☐ The basic premise for search of a past disaster using the GLIDE system is that the disaster needs to have been registered in the GLIDE database. Otherwise, the system returns no results. This means that it may take a lead time up to one week before a GLIDE number is issued to a latest disaster. In the meantime, no information on the disaster is available from the GLIDE database. Therefore, it is necessary to develop a mechanism for quicker issuance of GLIDE numbers to facilitate faster information sharing among individual organizations.
☐ A GLIDE member organization has to do extra preparatory works, such as incorporation of GLIDE numbers to its own open database(s) to accept inbound access via the GLIDE

system.

□ When direct search into an organization's database for content data is impossible because of the server's structure or for security reasons, an additional database will be necessary to incorporate ID codes into the organization metadata (storage location information).

□ At present, CRED-run database (EM-DAT) is known to have no data on some disasters, in particular, those that occurred in the distant past. ADRC made inquiries to member countries for such data, and compiled and forwarded a collection of corrected records of past disasters to CRED. No updates to EM-DAT, however, have yet to be made.

3) Activities at the United Nations

In July 2003, GLIDE Technical Meeting was held in Geneva. In November,0n the ISDR Task Force meeting, a meetingof the Working Group and Ⅲ (Risk, Vulnerability & Impact Assessment)was held. The Working GroupⅢ recommended:

(1) Use of the GLIDE system as a tool to facilitate disaster information database sharing.
(2) Development of GLIDEnumber.net website to promote the use of the GLIDE system.
(3) Development of Automatic GLIDE generator and GLIDE#report for faster information sharing.
(4) Revision of the GLIDE number format.
(5) Promotion of the use of the GLIDE system for disaster databases developed at the national level.

GLIDE was highly evaluated at the Working Group sessions as a tool for information sharing.

4) Further promotion of GLIDE

In order to further promote disaster information sharing, it is necessary to enhance GLIDEnunber.net for easier and faster registration and search of GLIDE numbers, and to increase partners for full-scale operation of the GLIDE system.

ADRC will use the UN/ISDR framework and host GLIDE partner conferences in order to discuss these issues in depth, to provide solutions to the tasks lying ahead, and to promote the use of the GLIDE system.