

### **3-4. Construction of Natural Disaster Database Linked to GDIN**

It is extremely important to know what kind of countermeasures have been taken against what scale of disaster, what effects/review points/lessons have been obtained regarding catastrophic disasters that had occurred in the past in order to devise various disaster prevention countermeasures in the future. The consolidation of such information on disasters which occurred in Asia in this century into a database will serve as an invaluable data asset for the next century.

At present, the statistical data regarding natural disasters that occurred in this century are accumulated in the Center for Research on the Epidemiology of Disasters, Louvain Catholic University (CRED) in Belgium and disaster related information is transmitted on the Internet from various organizations beginning with the circumstantial report on the main disasters since 1980 from the United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA).

The Asian Disaster Reduction Center (ADRC) has confirmed the necessity for constructing while cooperating, the blanket database on natural disasters that had occurred in the 20th Century by effectively utilizing these existing databases at the ADRC Experts Conference held in December 1999. Furthermore, the ADRC has participated in the GDIN (refer to 2-1-4 (6)) and gave concrete suggestions at the Canberra Assembly in March 2001 and its so-called Pre-meeting, the Asia-Pacific working Group Assembly held in August 2000 at Canberra to positively promote such global activities.

#### **3-4-1. Current Situation of Sharing Disaster Reduction Information**

At present, the majority of organizations are conducting data collection and studies solely related to themes assigned to them and transmitting the results on the Internet and other means. Additionally, partial sharing is being planned through linking of related organizations on the Internet.

Amongst these, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) is already promoting the tackling of sharing reliable disaster prevention data and have set up the ReliefWeb to issue various global data related to disasters on the Internet. Detailed Situation Report particularly those regarding the main disaster after 1980, are being carried so that outlines and countermeasures can be tracked on document.

In addition, the Center for Research on the Epidemiology of Disasters, Louvain Catholic University (CRED) in Brussels, Belgium, is collecting statistical data on natural disasters and human disasters centered on disasters totaling over 10 deaths that had occurred over the world after 1900 and transmitting on the Internet. (After autumn of 1999. Refer to “The ADRC Annual Report 1999”.)

Others in universities and research organizations worldwide own respective disaster information of each area or target fields and some parts of these are being transmitted over the Internet.

However, since it is difficult to specify the dates of occurrence of flood damages or droughts from past disasters, different sources record different times and dates. Regarding the classification and names of disasters, since consolidated terms are not being used, in many cases it is often difficult to link the data transmitted from separate data organizations as being the same disaster, particularly those that are very old.

Regarding the disasters in Japan, the “Science Chart” and “Weather Almanac” are included in the detailed and completely covered cases that had occurred in the past, and on the Internet, the table of main disasters inserted in the “Disaster White Paper” could be downloaded, but a database that covers past disasters at a stroke is not publicized. Furthermore, when comparing these with the data from CRED, many cases of unclear corresponding relationships and discrepancies in figures exist.

With above-mentioned ReliefWeb as the nucleus, GDIN is aiming at the organic and efficient utilization of these existing data transmitting organizations.

#### **3-4-2. Databook of Natural Disasters in Asia in the 20<sup>th</sup> Century**

As recorded in the ADRC Annual Report (1999), ADRC signed an agreement on the memoranda with CRED and conducted verifications of CRED’s EM-DAT. However, in most countries the information on disasters of the past 100 years seldom remain available and the truth is that this verification process is

extremely difficult.

In member countries, it is very often the case when the data presently reported in EM-DAT is the only data on the history of natural disasters in each country. Since there is no background of this valuable data having been generally published and distributed in Asian nations, we published the "Asian Natural Disaster Data Book for the 20th Century" in July 2000 after adding individual tables, various calculations and analysis to the data collected in EM-DAT on member nations thinking that the verification process would be advanced by offering them to the use of many persons concerned as well as drawing the attention of many persons.

### **3-4-3. Propositions to GDIN (Asia Pacific WG) by ADRC**

Two years since the start of GDIN, conceptual discussions have been conducted actively on the necessity for data sharing through 3 international conferences and from the 4th, it has been decided that concrete discussions on what will be done at which location will be held in March 2001 at Canberra.

The so-called pre-meeting, Working Group Conference of Asia-Pacific area was held at Canberra in August 2000. At this conference, the ADRC made several proposals, taking the following background into consideration, for items which will initially be required for developing future GDIN activities, as an organization with the experience of already concretely promoting the sharing of disaster reduction data with 23 Asian nations. Each group organization had agreed on promoting the same.

#### **1) ADRC's initial idea on the comprehensive database**

The ADRC has been aiming at the construction of a blanket database covering the statistical data of historical disasters that had occurred in Asia in the past, emergency measures both internal and external and lessons from them.

Initially, we thought of a database that will link related data on one disaster dispersed worldwide by creating a table of statistical data on disaster names, time/date, main damages, and based on this, retrieve each individual disaster related data on the Internet as much as possible, and to hyper-link these individually.

However, tremendous work is necessary in the process of retrieving each related data one by one to link them due to the inconsistency in terms or differences in times/ dates as mentioned above. Moreover, once constructed, links are highly likely to be cut off if a data transmitting source changes or rearranges the database structure. Although the database may function immediately after construction, it will stop functioning eventually. On the other, it has potential problems such as need to spend considerable time and efforts for maintenance.

In view of the above, the ADRC proposed the following:

#### **2) Proposition (Unique ID Project) to GDIN by ADRC**

##### **(1) Adoption of across the world "Unique ID" for past disasters**

Incidentally, we thought that data dispersed around the world can be used effectively and efficiently if statistical data and related data of past disasters are linked efficiently to construct an integral database, and if individual, non-duplicating ID code per disaster were attached and related data transmitting organizations were to release each of the database by using the codes in the Internet.

International consensus would be necessary to decide on the ID code, but as a suggestion, we proposed the ID code (4 digits for the year + serial number for order of occurrence within the year) used by the statistical database of EM-DAT at Center for Research on the Epidemiology of Disasters, Louvain Catholic University (CRED) as a candidate. The reason is that as mentioned above, the database covers the statistical data of 12,000 human and natural disasters that had occurred across the world after 1900, and no other database exceeding this detailed database exists. Therefore, if the CRED ID number were to be attached to every disaster handled by the related organizations, it can be used as individual ID codes commonly across the world for past disasters.

##### **(2) Adoption of globally common unique ID code related to the latest disaster data**

On the other, it is expected that the common code for the latest disaster (the current disaster) could be decided immediately and attached to the data transmitted by related organizations, the collection of related data will be effected speedily and efficiently and to function effectively at policy decision that

necessitate urgency.

Regarding the common code for the latest disaster, we have suggested that it is desirable for ReliefWeb, the data transmitting UN disaster reducing organization that is supplementing disasters occurring worldwide on 24 hour basis, to conduct the data collection since data collection at CRED is conducted by confirmed values after some months from occurrence of disaster.

### **(3) Merits of adoption**

The following merits could be considered by adopting this ID code:

- Disaster data owned by many organizations could be related easily at retrieval per item
- By developing retrieval engines focusing on necessary items for the organization, the necessary data could be automatically retrieved / indicated on the same page without retrieving each item per organization. (Observe the problems in the next item)
- Thus, the inspection of the same data will become possible by using this code for direct retrieval even when the database designing had been changed by each organization and changes of retrieval method by retrieving side could be conducted easily.

### **(4) Problems on adoption**

However we believe that it is necessary to clear the following problems for such a system to function effectively:

- Presently, the lack of data, particularly those in the older eras are prevalent in the CRED database, necessary addition/exclusion amendments are to be conducted by rechecking the data brought together with each related organization.
- The participating organizations of GDIN will need to attach this ID code on their respective databases.
- When the insides of the database cannot be retrieved directly due to the server structure of each organization or security reasons, a new database with ID code attached to the metadata (information on stored location) of each organization would become necessary.

### **(5) Further use of unique ID**

It is desirable to create an environment to facilitate retrieval by devising integration of other items to promote further data sharing in the future.

Effective extraction and comparative studies will become possible if each organization matches whatever data that can be standardized as much as possible, such as classified names for countries and disasters, statistical data items, contents, names of related organizations or order of data.

Regarding this standardization of disaster reduction data, a separate "Standardization Working Group" exists in the GDIN Working Group and the integration of items will be begun initially to continue onto the tackling of further standardization in this Working Group.

## **3-4-4. Adoption of Unique ID at the 4th GDIN Conference in Canberra 2001**

The 4th GDIN Conference was held from March 20 to 23 2001 in the Australian capitol of Canberra with the participation of approximately 250 persons from disaster reduction data related organizations over the world.

This time, Emergency Management Australia was the host and persons related to disaster prevention from ReliefWeb of OCHA, UNICCEF, OECD, UNHCR, NASA, NOAA, COE (Hawaii), Red Cross (USA, Australia), national governments (China, Korea, India, Indonesia, Papua New Guinea, Australia, New Zealand from member countries of ADRC), universities and enterprises had participated.

At this Conference, concrete future plans and organization management methods (business plan) were discussed from the discussion of conceptual necessity to promote the former disaster prevention data.

### **1) Adjustments with related organizations after the Asia-Pacific Working Group Conference**

After suggesting the unique ID Project at the Asia-Pacific Working Group Conference in august 2000, the ADRC established a concrete proposal, sent it to the GDIN Secretariat and submitted to the Web of GDIN virtual conference, Asia-Pacific Working Group to devise the wide notification of persons concerned.

As the result, we received an extremely favorable response immediately from Ms. Alta Haggarty of ReliefWeb, UN-OCHA on the effectiveness of this Project and received a mail to the effect that they will cooperate actively with this Project in the future. Meanwhile, we received the comment from the Manager, Ms. Debarati Guha-Sapir of CRED of Belgium who is proposing the use of this unique ID. The contents mentioned that it is extremely felicitous that the CRED ID code be used as the world standard and are anticipating the future developments.

We received advice from the former director of Emergency Management Australia, Mr. Alan Hodges on a more effective expression of the proposal on this Project. Moreover, we received comments from Emergency Management, New Zealand, and COE of Hawaii to the extent that apart from the common numbers, the code numbers for the year of occurrence, name of country, district, and disaster category should also be uniformly expressed as database.

In response to these comments, we explained and gained understanding on the basic concept of this Project--that this Project aims not to construct a new database but to create an environment for effectively sharing the dispersed data.

## **2) Pilot Project by ADRC**

In order to indicate the effectiveness of this Project concretely at the March 2001 Canberra conference, ADRC created a pilot database using the unique ID with the cooperation of various organizations and planned to hold the demonstration to show that the database will be automatically linked by the retrieval engine when equipped with the unique ID. Then, ADRC attached the CRED code numbers to all disasters cases from July 1998 reported in the latest disaster reduction data of ADRC, and amended the database structure so that when retrieval is implemented using the CRED ID number from outside, the corresponding page of the latest disaster reduction data is returned.

Additionally, CRED and ReliefWeb buttons are created at the top of each page of the latest disaster reduction data. Regarding CRED, since it is presently operated in the form of downloading Excel data, this download data is temporarily transferred to access and start operation in the form of one data indicated on one access card with the CRED ID. As ReliefWeb is already equipped with a retrieval engine, automatic retrieval can be facilitated when the CRED ID is added. However, as it can only retrieve by year/month, country names and disaster names at present, it was made to indicate retrieval results by keyword retrieval.

Thus, on the outside, the data from CRED and ReliefWeb are automatically linked by the latest disaster reduction data of ADRC.

## **3) Presentation at the 4th GDIN Conference in Canberra 2001**

ADRC gave a presentation of this Project at the Asia-Pacific Working Group Conference held the day before this conference while giving a presentation of this Project at the actual conference together with an explanation on CRED given by Dr. Glen Shaw who was engaged with the management of EM-DAT at CRED. Furthermore, we were asked to attend the three subcommittees (Asia-Pacific Area Subcommittee, Subcommittee for promoting data sharing, Subcommittee for examining standardization for data sharing) and explanations of the Project or discussion with those concerned were effected respectively.

As the result, before the last day of the Conference, this Project was nominated as one of the pilot projects to be conducted at GDIN. When we gave a presentation of this Project again on the final day, it was evaluated as the most effective project and was selected as one of the four pilot projects.

The contents of the agreed project are:

- Regarding the disasters in the past, already existing code numbers used by CRED that are attached to disasters in the past will be the code number common throughout the world
- Every data organization shall attach the CRED code number to the disaster data of the past in their property
- Every data organization shall amend the CRED data depending on demand
- Every data organization shall display the database on the Internet in a form that is accessible from outside
- Regarding the disasters that may occur in the future, ReliefWeb will disclose them after attaching the numbers, after which each organization can use them. (CRED will confirm this number)
- The search engine to retrieve these data will be developed and publicized

- In future, the ADRC, ReliefWeb of UN-OCHA and CRED will cooperate and promote

During the Conference, China, Indonesia, India, Vietnam, NASA, COE as well as the three organizations promoting this Project declared their intention to cooperate.

The main disaster prevention data organizations of the world decided to adopt this common number. In the future, organizations using this common number will gradually be increased to widen the ring of sharing the disaster prevention data.

Lastly, at the end of the Conference, an award was specially presented to ADRC's Senior Researcher, Mr. Masahiko Murata who proposed and promoted this Project.