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Dr. Tadahiko SAKAMOTO PWRI Chief Executive

1 . Greeting from Chief Executive

In July this year, Japan was hit by torrential downpours in Niigata, Fukushima and Fukui prefectures. The devastating floods due to these downpours caused the loss of lot of lives and brought the importance of disaster prevention into relief. In order to prevent damages from floods, making predictions of spatial and time distribution of precipitation, river discharge and inundated area is not enough. Appropriate evacuation orders should be announced by municipal governments and people should respond to them. Thus disaster prevention includes social aspects. The process of disaster prevention is a precise system, in which if only one part fails to work, the whole system does not work properly. Therefore the most important issue is to establish a disaster prevention system as a part of social system by taking people's behavior into account.

By the way, due to its particular topographical and climatic conditions, Japan has been making numerous efforts to prevent water-related disasters since ancient times. Based on Japan's accumulated disaster prevention technologies, we are planning to establish UNESCO centre at [the Public Works Research Institute \(PWRI\)](#), aiming to make contributions to prevent and mitigate water-related disasters in the world. We take pride in playing a leading role in civil engineering research in Japan and it is our great pleasure to establish such an international centre under the auspices of UNESCO. At the same time we believe that this is a good opportunity to take full advantage of our strengths in the international arena.

However, Japan's technologies cannot always apply directly to foreign countries because there

are a wide variety of countries and rivers in the world under different natural and social conditions. Disaster prevention must be designed country by country, and river by river. In other words, we can make the best use of our experiences but we should review them from a global point of view to make them applicable in other countries. For this purpose, it is important for us to conduct research in collaboration with foreign colleagues, especially those from developing countries. It is not enough to transfer technologies from Japan to developing countries. We should also take joint initiatives with developing countries. I think “internationalization” would refer to such interactions.

There already exist several UNESCO centres in the world. Each centre focuses on problems of its own region such as arid and semi-arid regions, tropical regions and so forth. The centre to be established in Japan is expected to become a global Centre for water hazard and risk management. Initially our centre will focus on Asia, but in the future, we hope our centre becomes a solid base of research, training and information and contributes to prevent and mitigates water-related disasters in the world.

2 . Background and outline of the Centre

--Why water hazard? --

The table and the map attached at the end of this newsletter (Fig.1. and Fig.2) show the floods occurred this year in the world. These figures indicate to us that floods hit somewhere in the world all the time. If other water-related disasters such as typhoons, surges and landslides are added, the calendar would run out of space. This shows evidence that the world severely suffers from water-related disasters. Once a flood occurs, it affects tens of thousands of people or sometimes hundreds of thousands of people. Furthermore, in many countries, restoration works do not always progress as rapidly as in Japan. In the case of the Zambezi River basin (Namibia and Zambia) and the Ganges and Brahmaputra River basin (India and Bangladesh), flood water has not receded for several months. In developing countries, a lot of people lose their lives due to water-originated epidemics after floods, and this year is no exception. The world is always affected by such devastating floods.

Fig.3. shows the numbers of disasters occurred in recent years by type. As this figure shows, water-related disasters are increasing. Although we cannot predict the exact number of disasters to occur next year, it is easy to assume that this upward trend will continue further. When you face these realities in the world, you can understand how important the risk management of water hazard is.

Critical conditions concerning water and the importance of taking appropriate countermeasures were recognized at numerous international events and conferences such as the [World Summit on](#)

[Sustainable Development](#) held in Johannesburg in 2002 and [the Third World Water Forum](#) held in Japan in 2003. Following these events, it was decided that PWRI which has long experience and accumulated knowledge in the field of water disaster prevention would establish UNESCO centre for water hazard and risk management. In April 2004, the Secretariat for Preparatory Activities of [UNESCO-PWRI Centre](#) was established, which is now promoting the preparatory work toward the planned opening of the Centre in 2005.

Fig.1. World flood calendar of 2004 (from January to August)

Fig.2. World flood map of 2004 (from January to August)

Fig.3. Numbers of various disasters (from 1992 to 2001)

(Source: EM-DAT, CRED, University of Louvain, Belgium)

-- Action policies --

Ever since PWRI belonged to the former Ministry of Construction, PWRI has been conducting a wide range of research including river improvement technologies, water resource management technologies, water quality management technologies and so forth. PWRI's hydrological research has made important contributions to the world. [UNESCO, U.N. Educational, Scientific and Cultural Organization](#), on the other hand, has organized [International Hydrological Programme \(IHP\)](#) since 1975 and has been engaged in sharing and dissemination of information as well as promoting cooperation on a regional and international basis. UNESCO also acts as secretariat of [World Water Assessment Programme \(WWAP\)](#), an 'umbrella' for coordinating existing UN initiatives within the freshwater assessment sphere.

Thus UNESCO places top priority to water issues and expects Japan, valued for its accumulated knowledge and experiences, to make contributions to the field of water- related disasters and risk management. To cope with this internationally growing demand, PWRI is to establish UNESCO centre in coordination with the [Ministry of Land, Infrastructure and Transport \(MLIT\)](#) and other agencies and research institutions concerned.

This centre is planned to carry out three pillar activities; research, training and information networking.

As for research, by making the best use of experiences and knowledge PWRI has accumulated over the long time, the centre will promote a broad range of studies to prevent and mitigate water-related disasters. The research activities include hydraulic/hydrologic forecast, observation and analysis through development of models for water-cycle and water management, and water-related disaster management technologies under various social and economic conditions in the

world. The centre will also cope with issues associated with global climatic variability.

Concerning training, we plan to open practical and strategic training courses and capacity-building programs for practitioners and researchers here and abroad in cooperation with universities and other academic organizations as well as the private sector.

Lastly as information networking activity, our Centre is planning to gather and analyze information about water-related disasters all over the world and share gathered information both in Japan and abroad through UNESCO networks.

We believe that these three activities will be developed in a continuous and integrated manner. For instance, research results at this Centre will be made available for other training and networking activities, and human networks that will be formed through the training activities will become a core of the future information network of this field. Furthermore the Centre's information networking will enhance flow of information, which in turn will exert good effects on research and training activities of the Centre. Thus, by closely linking research, training and information networking, we can expect positive and integrated effects from each activity. In the next newsletter, we will introduce the Centre's activity plans more in detail.

Fig.4: Pillar activities of the UNESCO centre

3. Topics of this issue

-- Report of downpours in Niigata-Fukushima and Fukui prefectures--

This year Japan has suffered from numerous floods. As of September 7, a record number of 7 typhoons hit Japan and 2 large scale floods occurred one after another in Niigata and Fukushima Prefectures, and in Fukui Prefecture. We would like to briefly review on these disasters.

In the case of Niigata-Fukushima downpour, 421mm of rainfall in 24 hours was recorded at Tochio observatory (Japan Meteorological Agency). Various places including Sanjo city and Nakanoshima town were inundated and 15 people were died, and more than 26,000 houses were inundated. In the case of Fukui downpour, 283mm of rainfall in 24 hours was recorded at Miyama observatory (Japan Meteorological Agency) and Fukui city was partly inundated. Five people were drowned or went missing and more than 14,000 houses were flooded above or below floor level. In both cases, increased rivers discharge due to extremely heavy rainfall broke river embankments and caused devastating damages. In Japan, due to its topographical characteristics, houses are concentrated in alluvial plains which are subject to floods. Embankments are built to protect assets in such plains but once they are broken, there would be extensive damages.

In these two cases, prompt restoration of broken embankments and active participation in restoration works of flooded houses by volunteers were highly appreciated. But removing a massive amount of mud was difficult and it was pointed out that victims were mostly seniors. Also, the question of whether appropriate evacuation orders were issued by local governments and properly transmitted to citizens has been raised. Since such devastating floods can occur at any place in Japan, damages should be precisely investigated. Actually investigation of these disasters is in progress. The investigation results, when made available, will be introduced in a future issue of our newsletter.

4. Coming events related to our activities

September 20-23, 2004

The 16th session of the UNESCO-IHP Intergovernmental Council (Paris, France)

Dr. Sakamoto will make a presentation on the planned establishment of the UNESCO Centre in Japan to get the resolution of the Council to support the plan. The preparation for the International Flood Initiative/Programme (IFI/P) will also be introduced at this opportunity.

URL : <http://www.unesco.org/water/ihp/council/16th/>

September 20-23, 2004

International Symposium on Living with Risks (Soul, Korea)

This Symposium is organized by the Typhoon Committee, jointly initiated by WMO and UNESCAP. This time, it is planned to discuss the progress of "Japan Flood Hazard Map Project" led by MLIT and Infrastructure Development Institute-Japan (IDI). A test hazard map will be produced during the symposium.

A representative of the Secretariat is planning to join the symposium to introduce a training course on "Flood Hazard Map", which PWRI is now preparing under JICA framework from this fiscal year.

September 27-29, 2004

International Conference on "Climate Change: a challenge or a threat for water management" (Amsterdam, The Netherlands)

In this conference organized by International Water Association (IWA), a representative from the Secretariat is planning to make a presentation on "Flood management under the climatic variability and its future perspective in Japan". Parallel with the conference, AQUATEC international water-related technical exhibition is held and it is expected that we are going to collect relevant information in the world for the sake of future activities of the Centre.

URL : http://www.show-info.nl/aquatech2004/e/bez_overig130

October 11-15, 2004

The 14th UNESCO-IHP Training Course – Hydrology in Asia – (Kuala Lumpur, Malaysia)

A representative from the Secretariat is planning to make a presentation and discuss the Centre's future training courses to be effective.

URL : <http://hyarc.nagoya-u.ac.jp/ihp/14ihptc.html>

October 12-16, 2004

The first IWHR-PWRI Joint Workshop (Beijing, China)

China Institute of Water Resources and Hydropower (IWHR) and PWRI will hold the first workshop on flood and discuss on-going and future research collaboration. IWHR and PWRI are currently studying good practices of retarding basin management after the 1998 Changjiang River Great Flood.

October 25-27, 2004

International Conference on “Advances in Integrated Mekong River Management”

(Vientiane, Lao PDR)

The conference is co-organized by PWRI, which is promoting a scientific and technological project named “Research Revolution 2002”. The conference output would make a useful input for the preparation activities of the Centre.

November 21-25, 2004

International Conference on Water Sensitive Urban Design: Cities as Catchments (Adelaide,

Australia)

A representative from the Secretariat is planning to introduce Water Master Plan of the Tsurumi River in Japan as a successful case of integrated water resource management.

URL : <http://www.plevin.com.au/wsud2004/>

December 13-14, 2004

International Workshop “Water and Disasters” (London, Canada)

One of the sessions will be organized by the Secretariat in cooperation with IFNet and JWF. The output of the conference is going to be introduced at the conference in Kobe next January, see hereafter.

URL : http://www.iclr.org/pdf/First_Announcement_2004.pdf

January 18-22, 2005

World Conference on Disaster Reduction (Kobe, Japan)

The Secretariat is now planning to discuss specific range of actions concerning water-related hazard and its risk management in cooperation with other relevant organizations.

URL : <http://www.unisdr.org/eng/wcdr/wcdr-index.htm>

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Announcement of next issue:

The next issue, to be published around December 2004, will introduce our preparatory activities for the establishment of the UNESCO-PWRI Centre in more detail as well as international conferences and symposiums participated by the Secretariat.

Information:

This newsletter is distributed via E-mail. It can also be downloaded from PWRI's Web site. Those of you who wish to subscribe to or unsubscribe our mailing list, please contact us by email. We welcome any comments or requests from you, via email, for making this newsletter more effective and informative one.

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	<i>Asia</i>	<i>Oceania</i>	<i>America</i>	<i>Africa</i>	<i>Europe</i>
Jan.	East Timor Afghanistan		Bolivia		
Feb.	India Kazakhstan	New Zealand	Peru		
Mar.				Madagascar	
Apr.	India	Fiji	Mexico	Djibouti Kenya Namibia/Zambia	Bosnia Herzegobina Russia
May	China		Costa rica Haiti/Dominica		
Jun.	India/Nepal/ Bangladesh				
Jul.	Japan Vietnam Tajikistan Afghanistan				
Aug.	North Korea China				Rumania

Fig.1. Recent flood disasters (from January to August, 2004)

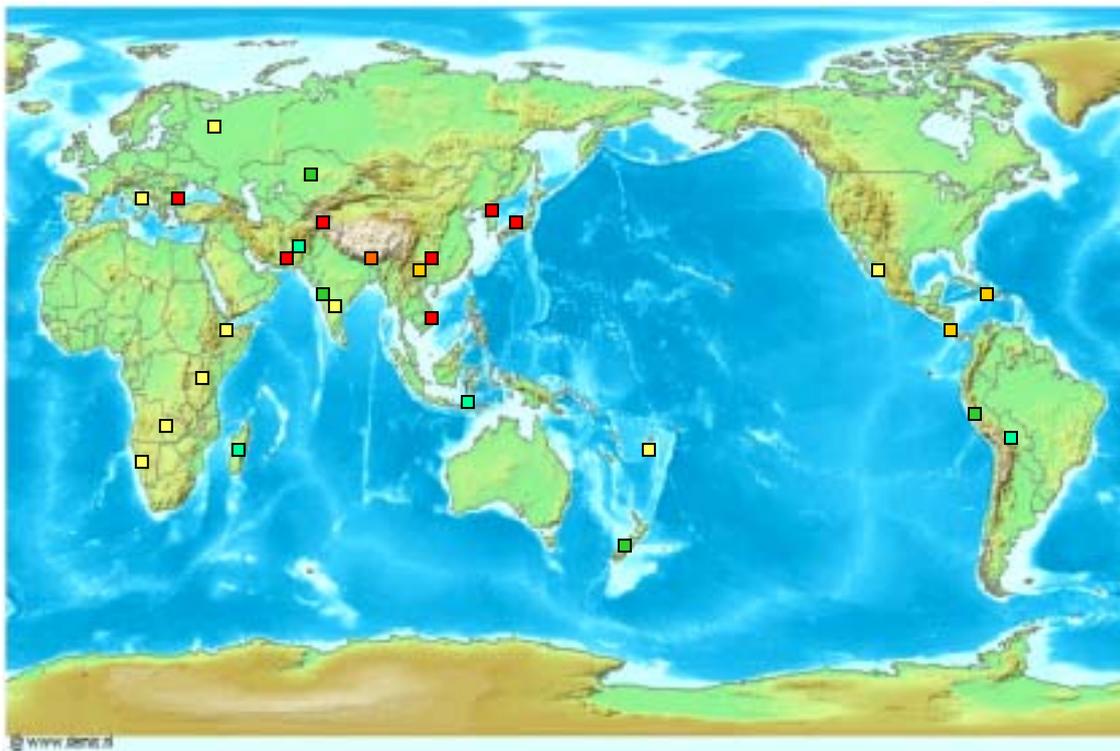


Fig.2. World map of recent floods (from January to August, 2004)

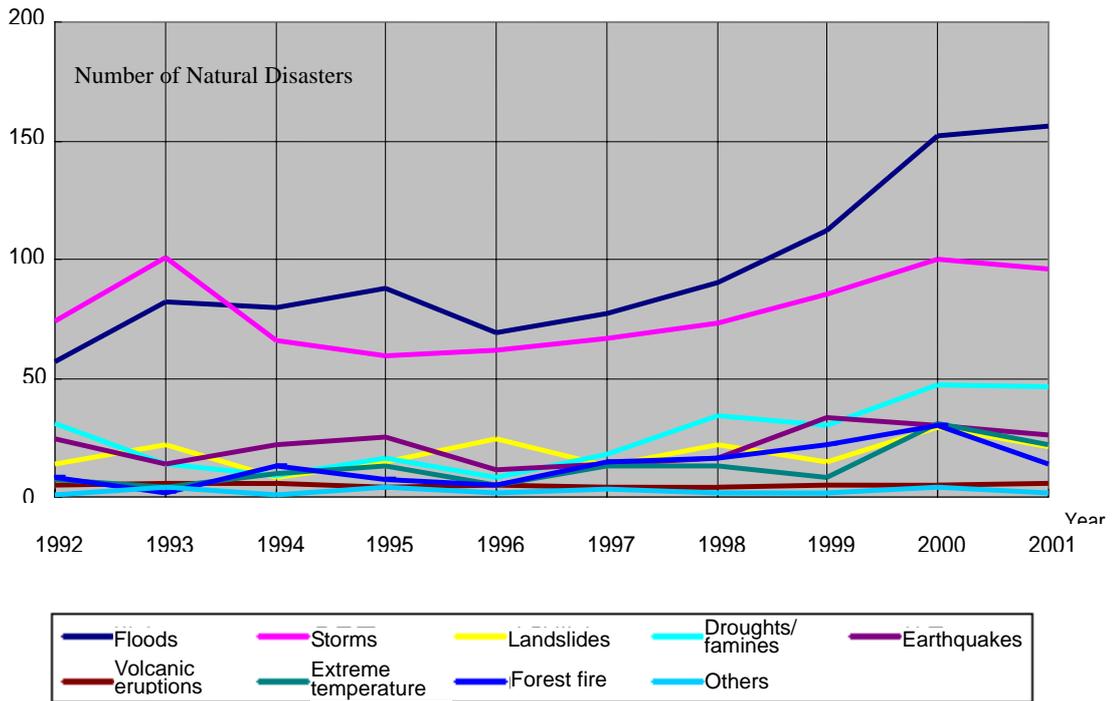


Fig.3. Numbers of various disasters occurred from 1992 to 2001
 (Source: EM-DAT, CRED, University of Louvain, Belgium)

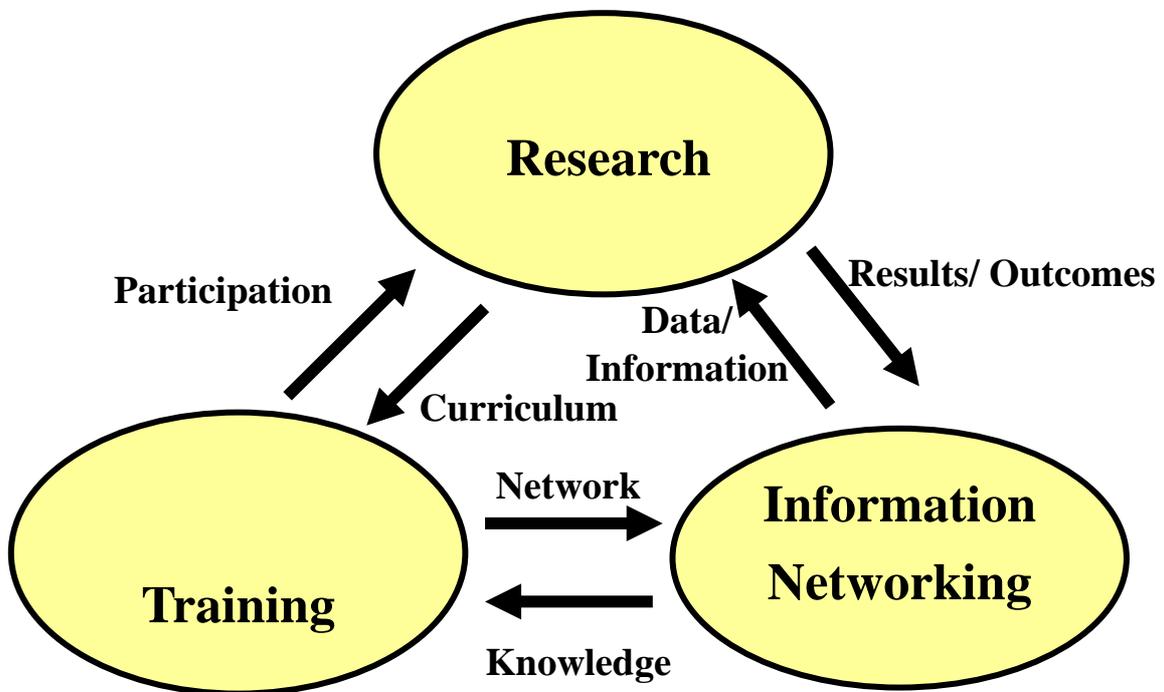


Fig.4: Pillar activities of the UNESCO-PWRI Centre