Outline of UNESCO-CHARM

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I am going to talk about

The International Center for Water Hazard and Risk Management under the auspices of UNESCO (UNESCO CHARM)

- Background
- Outline of the Public Works Research Institute (PWRI)
- Planned Activities of the Center
- Preparatory Activities to date
- Toward setting up the Center



Internationally common recognition

2002 World Summit on Sustainable Development (Johannesburg)

2003 3rd World Water Forum (Kyoto, Shiga & Osaka)

Water related disasters such as flood and drought are major challenge for ensuring sustainable development

Urgent needs for appropriate actions to prevent or mitigate impacts from water related hazards

Various Natural Disasters over the World



Historical wind and flood disasters in Japan

Great destructive power of trees felled by storms. Typhoon No. 18 Strong winds of Typhoon No. 19 (September 1991) blew (Sep. 1999) Typhoon No. 19 down about 4,200 trees. Trees felled by storm can cause (Sep. 1991) secondary damage. Subsequent rain can cause debris flows Typhosi No. 11 (Aug. 1993) accompanied by driftwood. Kano River Typhoon Juhikari River (Typhon No. 9, Aug. 1962) (Typhopha No. 5 & No. 6, Aug. 1975) (Sec. 1967) (Typheor No. 12, Aug. 1981) Historical wind and flood disasters in Japan ***** Storm surge hazard zone Ice Bay Typhoon (Sep. 1959) twaki River (severe local rain, Aug. 1960) Upper Terryu River (before tainy season, Jun. 1961) Nagara River (Ise Bay Typhoon, Sep. 1957) Typhoon No. 12 (Typhoone No. 11 and No. 12, Aug. 196) (Rainy season front storm, Jun. 1961) (Sec) 1996) (Typhoon No. 17, Sep. 1976) Makurazaki Typhoor (pevere local rain, Sep. 2000) (Sep. 1945) Kizu River (severe local rain, Aug. 1953) Murple Typhoen (Sep. 1934) Ichinoseki Typhoons (Typhoon Kathleen, Sep. 1947) (Typhcon time, Sep. 1948) Katura River (lee Bay Typhoon, Sep. 1959) Nigata (severe local rain, Jul. 1964) Ouska-Kokai River (Typhoon No. 15, Aug. 1981) (Storm surge due to Murato Typhoon, Sep. 1934) (Typhoon No. 10, Aug. 1986) (Storm surge due to Typhoon Jane, Sep. 1950,) (Storm surge due to No. 2 Muroto Typhoon, Sep. 1901) Typhoon Kathle (Sep. 1947) Hamada (severe local nam, Jul. 1983) Chikugo, Orga, and Shira Rivers Tokyo (Typhoon Kathieen, Sep. 1947) Trainy season front storm, Jul. 1957 * (Storm surge due to Tjohoon Kity, Aug. to Sep. 1948) (Kano River Typhoon, Aug. 1983) (Typhoon No. 11, Aug. 1993) Isahaya (rainy season front storm Jul. 1957) Tama River (Kano River Typhoon, Sep. 1974) Nagataki (severe local rain Jul. 1982)-32 Kano River (Kano River Typhoon, Sep. 1958) Fukurka ont stoom mainy seadors Jun. 1999) Coast of Ise Bay (Stort surge due to Typhoon No. 13, Sep. 1953) (Storm surge due to lise Bay Typhoon, Sep. 1968) Kochi River (Autumnal rain front, Sep. 1998) Arists Blue Nevera local rain, Jul. 1953

Kaposhima - Kobe (severe local rain, Aug. 1996 (rainy season front atorm, Jul. 1938)

from 'Rivers in Japan', MLIT, 2003

In the case of downpour in Fukui Prefecture in July 2004, 283mm/day was recorded at Miyama Observatory.





Inundated situation of Sanjo City, Niigata Prefecture after downpour in July 2004. 421 mm/day of rainfall was recorded at Tochio Observatory.

Geographical condition of Japan Island



Geographic Conditions of Japan

- Town of land is covered with forests and mostly mountaneous
- 50% of popuration and 75% of assets are concentrated in flood plains (10% of land)
- Heavy rainfall occur during rainy season in June-July and in the typhoon season in August-October
- Rivers are short and steep, causing sharp.
- The ratio of maximum/minimum discharge is extremely high (about 100 for Tone River)

Long effort to prevent flood damage (Tone River)



Various Measures for integrated River and Basin management

Various types of projects contribute to conservation of land and preservation of scenic landscapes.

Natural disasters are common in Japan, Urbanization has created new types of disasters (disruption of liner water, the triggering of landslides, etc.) and increased water demand. Calamities and suddan water shortages can paralyze crites and impact heavily on everyday and economic activities. We implement various projects to protect the land and people and to create safe and comfortable living environments within the active society

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· Small dams for water supply Water shortage has been a problem in mountainous regions where there are no major rivers to supply water. Building small dama to supply water has improved the living conditions in such starses.

· Hometown Rivers and Hometown Erosion Control Projects.

As part of localized community development, particularization of stream improvement projects heips to preserve regional environmental - Augustanialist

· Avaianche control measures in addison to the installation of lences and the like to prevent inches, establishment of earning and evoluation systems alleviates idestruction caused by avalanches.

· Water quality improvement improving water quality of invers. lakes, and reservoirs protects water estimate and establish an internation

· Slope failure prevention * Stope failure prevention measures protect area residents.

· Maintenance of coastal environments

Creating promenades and planting trees on coastines enhances parks; and coastal development provides space for marine sports.

· improvement of dam environs Improving dam whitems preserved Jush natural sattrops and develops mana he ferral and, something to revitalization of the l

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from 'Rivers in Japan', MLIT, 2003

Public Works Research Institute (PWRI)

- History
 - 1979: Relocated to Tsukuba (Area:126ha, Staff: 550)
 - 2001: Re-organized into two institutes
 - (PWRI and NILIM)

(55 mil. US\$)

- Staff : 219 (including 1 researchers)
- Research topics: about 200

927; Established

Budget (FY 2004): 6 billion JPY

Aerial Photo of PWRI



Facility Layout of PWRI



200 Research topics focusing on <u>14 priority</u> research projects

- to ensure safety
- to conserve and restore the environment
- for efficient management of infrastructure

9 Research Groups with 20 teams

- Construction Technology Research Dept.
- Material and Geotechnical Engineering
- Earthquake Disaster Prevention
- Water Environment
- Hydraulic Engineering
- Erosion and Sediment Control
- Road Technology
- Structure
- Niigata Experimental Laboratory

Framework of UNESCO-CHARM

- Accumulated knowledge and experience trying to overcome water-related disasters
- Global network of UNESCO-IHP for internationally sharing valuable information

Contribution to prevent or mitigate water-related disasters in the world

Pillar Activities of UNESCO-CHARM

Research

Data/ Information

Results/ Outcomes

Participation

Curriculum

Information networking Knowledge

Network

Training & Capacity building

Activities - Research -

- Contribution to international projects such as WWAP and IFI/P (UNESCO/WMO)
 - Hydraulic / hydrological prediction, observation, modeling and analysis
- Risk assessment and risk management technologies for water-related hazards under various socio-economic, geographic and climatic conditions

Activities

- Training and Capacity building -PWRI has long experience in conducting JICA training courses for over 35 years including

- River and dam engineering
- Sabo engineering





Activities - Information Networking -

Information networking will be synergized with research and training activities

in order to enhance integration and coordination:

Through the information network...

- Research output will be widely disseminated
- Feedback from countries / regions will be reflected in the research projects
- Trainees will develop domestic links to their own countries/ regions
- Local needs for training items would be clarified

Preparatory activities

October 2003

32nd UNESCO General Conference

→ Announcement of intention to establish the Centre by the representative of Government of Japan

October 2003

- RSC in Southeast Asia & Pacific and in Latin America & Caribbean
 - → Resolutions strongly supporting the establishment of the Centre

Preparatory activities (continue)

January 2004

International technical workshop at PWRI

→ Experts from Asia, Africa, East & West Europe, and North & South America

→ Summary Report on directions of the Centre

International Symposium in Tokyo

April 2004

Proposal of the new Center was welcomed at UNESCO IHP Bureau Meeting

July 2004

A preparatory meeting of IFI/P hosted by PWRI

A Blueprint of the Centre Building





Office space

- : 20 (at the initial stage)
- : will be completed in autumn 2005
- : 2,000m²

In the Future

We will submit a proposal for consideration at the forthcoming UNESCO Executive Board.

And to obtain an accreditation of the new Center at the UNESCO General Conference in autumn 2005.

Thank you for your attention

安全最優先

http://www.unesco.pwri.go.jp



Technical Workshop and Symposium on water hazard and risk management

to share and exchange the latest technology
 to discuss the scope of the Center and its activities

valuable comments and suggestions were compiled as the Summary Report





Preparatory Meeting of International Flood Initiative/Programme (IFI/P)

Basic direction and approach of IFI/P was discussed among the participants from UNESCO-IHP,UNU, IAHS

The output of the 3 days meeting was summarized in a draft concept paper

Going to be discussed and coordinated among related bodies

