



Pakistan Engineering Congress



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A Report on

International Workshop on Floods in Pakistan-2010 (Lessons Learnt & Way Forward) held on
Saturday, the 12th March 2011.

After successfully participating in the 60th IEC Meeting of ICID and 5th Asian Regional Conference held from 5-11 December 2009 at New Delhi and coming-out of it with great Laurels/achievements, a two member delegation of Pakistan Engineering Congress comprising of the following participated in the 61st IEC meeting and 6th Asian Regional Conference of International Commission on Irrigation & Drainage (ICID) held in Yogyakarta, Indonesia from 10-16 October 2010.

Engr. Husnain Ahmad

President Pakistan Engineering Congress /
Member of Permanent Committee for Technical Activities (PCTA)

Engr. Syed Mansoob Ali Zaidi

Vice-President Pakistan Engineering Congress /
Former Secretary Irrigation & Power Department, Punjab

Pakistan achieved a great honor at the aforesaid meeting as Engr. Husnain Ahmad, President Pakistan Engineering Congress was elected as Vice-President ICID-2010-2013 (Asia Zone)

Mr. Husnain Ahmad took the opportunity of giving a presentation depicting the colossal destruction of precious lives, property, standing crops, food grains, infrastructure and above all displacement of 20-million souls by the un-precedented floods that occurred due to abnormal rainfall in the month of July and August 2010. The district / province wise statistics of the destruction presented at the Conference stunned the international delegates attending the Conference.

They resolved that it would be pertinent for Pakistan Engineering Congress along with the participation of Pakistan National Committee on Irrigation & Drainage (PANCID) / Federal Flood Commission of Pakistan and ICID to organize an International Workshop at which experts from member Countries of ICID and other Countries (WWF etc) & from Pakistan may probe, analyze the phenomena of

floods in the national & international perspective and to formulate a strategy to fight-out the disastrous socio-economic fall-out.

In accordance with the above decision at the ICID Conference, an International Workshop on the topic of Floods in Pakistan 2010 (Lessons Learnt & Way Forward) was held at the auditorium of Pakistan Engineering Congress on March 12, 2011. Federal Minister of Water & Power, the Honorable Syed Naveed Qamar presided over the event as Chief Guest. Mr. Asjad Imtiaz Ali, Chief Engineering Advisor / Chairman Federal Flood Commission / Chairman PANCID and Deputy Chairman NDMA (National Disaster Management Authority) also graced the event with their presence.

The Conference was attended by a large number of delegates, and covered by print / electronic media, inaugural session telecast live by Pakistan television network.

The proceedings started with the recitation from the Holy Quran after which Engr. Husnain Ahmad President Pakistan Engineering Congress presented his welcome address. The Conference was attended by foreign / domestic experts who presented their papers as detailed below.

Floods 2010, The Event, Issues and Way Out

By:- Engr. Asrar-Ul-Haq and Engr. Syed Mansoob Ali Zaidi

The following strategic interventions need to be planned and implemented for improving flood management and mitigating the impacts of flood disasters:

- *Build water storages to mitigate the impact of super floods*
- *Build back better and safer structures keeping in view the new benchmarks*
 - *Invest in disaster preparedness and effective management of relief and early recovery when it happens*
 - *Better regulation of riverine / khadir areas and a proper regulatory and enforcement mechanism*

Policy Changes, Restoration Efforts and Socio-Economic-Environment Benefits:

Learning From 1998 Yangtze Flood Experience

By:- Dr. Lifeng Li

- *Non-structural approach, such as restoration of Wetlands for flood retentions and room for river, should be paid special attentions, thus combined with structural approach for flood management.*
- *In water-scarce countries like Pakistan, flood management should be transited from disaster-oriented to water- resource –oriented management.*

Adaptive Flood Management

By:- Dr. Kamran Emami, Chairman of ICID

Working Group on Comprehensive Approaches to Flood Management

Weather radar have proved to be effective and efficient means for measuring the real time participation in many countries especially Japan, France, considering the area of the basic main rivers affecting Pakistan. It is proposed to buy and install at least two weather radars to the area. It should be mentioned that weather radar are problem shown but need expert operators and good maintenance. By using the weather radar, the accuracy of meteorological forecasting would also be enhanced.

The Tarbela dam has reduced the peak of last year flood by 35%. What we need is Seasonal flow forecasting and flood forecasting and weaving system. Additional weather radar will help.

Due to considerable hydrological uncertainties, the risk of the failure of dam especially embankment Dam exist, which need to be recognized and mitigated, thus enhancing the safety with a relatively low cost. This strategy was applied to more than 100 dams in the U.S.A., and it has proved to be very successful

Floods of 2010-A Probe, A Quest

By:- Engr. Usman-e-Ghani

- *Yangtze Forum like body for construction of dams in Pakistan so as to get agreement of all the stakeholders.*
- *Study of climatic change impacts for all 10 zones of Pakistan so as to redefine the water resource management concepts.*

Experiences in Flood Emergency Action Plan

By:- Dr. Mohammad Ali Banihashemi

- *Emergency management is a very complicated task. It needs a lot of cooperation and coordination. Usually countries of Middle East are weak in team work. It is very urgent for Water & Power Authority of Pakistan & Disasters Management Organization (NDMD) to sit together and try to work together. You need a flood committee within NDO, because their job is quite comprehensive & wide, dealing with all types of disasters. Floods need specific attention paid by relevant organization!*
- *Document in more detail, all your experiences from last year's flood. It should count for all successes and more importantly your failures. Reporting the extent of damages is not enough!*

Provision of Safe Drinking Water for Flood Affected Areas

By:- Dr. Muhammad Anwar Baig and Mr. Irfan Ahmad Qureshi

- *Provision of safe water-Prefabricated plants be made available.*
- *Demand be calculated based, on remote sense/GIS during floods for provision of water to community.*
- *Small bucket size plants be made available at camps.*

Pakistan Flood 2010: An Opportunity for Building Back Better

By:- Dr. Syed Shabih-ul-Hassan Zaidi

Rehabilitation and Reconstruction of homes, public facilities, utility services and human settlements should be done using Town planning principles & planning codes in the form of model villages and planned neighborhoods in the urban areas. Settlements located in the flood prone areas must be relocated.

FLOODS in Pakistan 2010 (Lesson Learned & Way Forward) in Agriculture Sector (A Success Story)

By:- Dr. Muhammad Ashfaq (T.I.)

There is a dire need to survey and reidentify the path way of rivers and canal network in the light of current floods.

- *Improve and extend the Flood Forecasting System to include upper Indus above Tarbela and Kabul River above Nowshera (Telemetry System on Tributaries and additional weather radars).*
- *Development of flood management guidelines for Tarbela and Mangla reservoirs so as to enhance their flood mitigation role.*

Engr. Dr. Izhar-ul-Haq

- *Build Storages/ Dams*
- *Review and strengthen flood embankments.*

Flood 2010 - Losses and future scope of the KP Dairy sector

By:-Prof Dr M Subhan Qureshi

- *To develop an extension network based upon efficient data recording system for the purpose of continuously assessing the nutritional, reproductive and health management practices and economic feasibility of the dairy enterprises*
- *To introduce the concept of entrepreneurship in the low-input haphazard peri-urban dairy farming in the province and the country. Also to provide an effective and sustainable genetic improvement backup for the peri-urban dairy farms.*

FLOOD 2010 IN PAKISTAN AND ITS DAMAGES

By:-Engr. Ch. Ghulam Qadir

- *Regular probing about the health of barrages and marginal bunds should be carried out.*
- *Avoidance of partial implementation of flood works as well as restoration of stone apron must not be less than 50% of the designed quantity of the flood works. Moreover, availability of stone stacks at marginal bunds must be ensured.*
- *Topographic and Hydrographic survey's of sufficient river reach upstream and downstream of the barrage after every flood season must be a regular feature for recording morphological conditions in the vicinity of the barrage.*

Re-examining Flood Management Measures for Sindh

By: Engr. Iqtidar H. Siddiqui

Indus discharge above Tarbela is mostly due to snowmelt, whereas, flood discharges in Indus below Tarbela are mainly due to monsoon rains in the catchments. Reservoirs above Tarbela would, therefore, not create the desired flood control affect. In view of several options available for flood protection, it is proposed that all the options should be examined. Most viable option of flood fighting is construction of multi purpose reservoirs; bypassing the flood flows from the upper Sindh and thence ensuring safe passage of water to the sea through bunds.

▪ There are a number of reservoir sites which can be developed as multi purpose reservoirs. They can be operated singly or in combination with off channel storage reservoirs.

▪ Bypass through Raineer River is also a very viable option. Through this bypass a large flood discharge can be diverted to lands in Sindh which can be developed as irrigated areas.

The delegates were given souvenirs. Towards closure of the workshop, the speakers assembled for discussion and formulation of a set of recommendations.

RECOMMENDATIONS TO FEDERAL GOVERNMENT FOR IMPROVING FLOOD MANAGEMENT IN PAKISTAN

1. The flood management in Pakistan needs an integrated system catering for all pre-flood, during the flood, and post-flood requirements.
2. Water storages, both on-channel and off-channel, have to be built to attenuate the flood peaks.
3. The flood warning and forecasting systems all over the country need extension and improvement. The capacity building both in terms of equipment (weather radars), softwares, and human resources need immediate attention.
4. All river works; especially flood protection works and barrages should be given due importance and priority in resource allocation; irrespective of flood frequency. All the flood bunds in the country should be redesigned to meet the latest requirements.
5. New bund systems should be planned on holistic requirements.
6. The riverine/khadir (active flood plain) areas need better regulation and a proper enforcement mechanism for planned use in due consideration of flooding risks.
7. Regular updating of the Standard Operating Procedures (SoPs), drills for disaster management, capacity building, and training of managers for flood protection, barrage management, and relief works, need immediate positive attention.
8. All the known flood routes and drainage systems should be kept in good order and new ones identified.
9. The general public must be kept duly informed on all aspects of floods and their risks alongwith managing positive role of the media.
10. Only properly qualified, well trained and dedicated staff should be entrusted with the charge of barrages and flood works.

11. Better inter provincial coordination is needed for embankments and channels which serve more than one province.

12. The Federal Flood Commission (FFC) presently has a limited role. This role needs to be enhanced along with expansion of the organization. The idea of conversion of the FFC into a Federal Flood Control Authority (FFCA) needs serious consideration. This authority if created should have proper in-depth coordination with provincial flood and barrage management organizations. The pictorial glimpse of the event is in the enclosed C.D.