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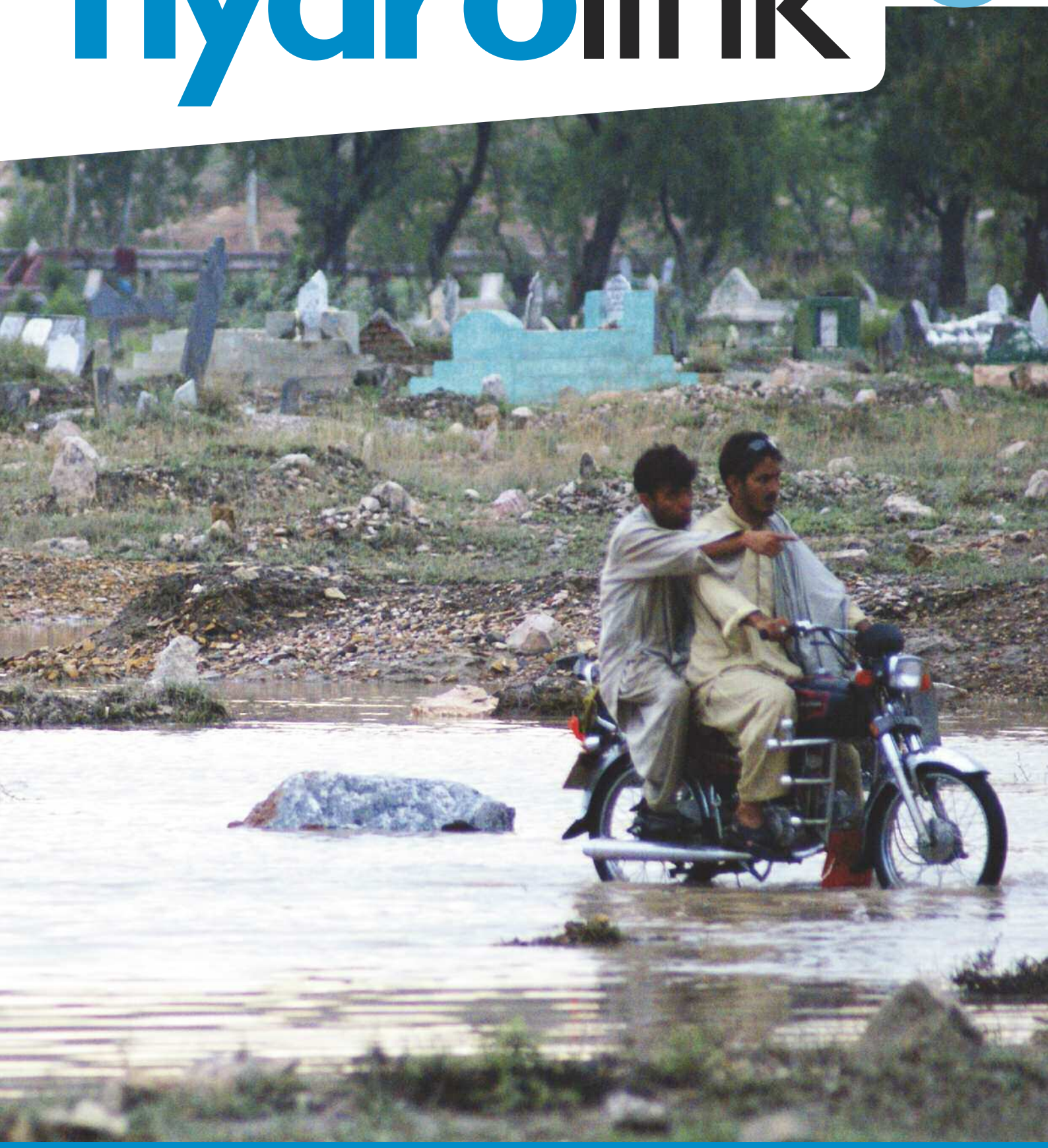
number 5 2010



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Editorial by **Michele Mossa**

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Floods in Pakistan and around the world. What can we expect in the future?

Five years ago my home city of Bari (Italy) and its neighbouring towns were hit by a serious flood. Five people were killed in an embankment collapse on a road, another victim was swept away in his car, and the severe weather also caused two railway accidents and 22 passengers were injured. Material damage resulted in major road collapses, damage to agricultural crops, and to electrical networks. On the occasion of that flood the previous Editor of the Journal of Hydraulic Research, Prof. Marcelo Garcia, invited me to write a forensic article on the history of floods in Bari highlighting the last one of 2005. The main aims of that article were to point out essentially the historical and technical aspects and the errors, which have unfortunately been repeated in the anthropogenic action in the territory, sometimes in spite of the preceding tragic events that should have taught us better.

With a sort of bottom-up procedure, using the analyzed case study, I think that the paper contains many warnings of general character and its conclusions might be applied to floods in other parts of the world. Video clips and photos of the 2005 Bari flood are freely available on the IAHR Media Library, the IAHR web resource of multimedia material (www.iahrmedialibrary.net). Those images and video clips prove the severity of the facts and, above all, some repeated engineering errors.

One of the last devastating floods in the world, which unfortunately hit a much larger area and was far heavier than the previously mentioned, occurred in Pakistan. This flood began in July 2010 following heavy monsoon rains in the Khyber Pakhtunkhwa, Sindh, Punjab and Balochistan regions. On 20 September the official number of deaths was put at 1,752, the damaged homes 1.8 million and 12% of the 166 million population and 20% of the land area were affected.

It is well known that the extreme consequences of floods can be attributed to extreme and intense precipitation, geological, morphological, and hydro-geological conditions of the ground upstream of the inhabited areas. But we also know, even if at times we might forget, that our planet is “alive”. Therefore, we must always consider that the risks of floods, hurricanes, earthquakes are not evil spells of dark gods craving sacrifices, but phenomena of a living planet. Nevertheless, we should also consider the possibility that the number of these phenomena have increased over recent decades and that human activity could be in some way responsible of this increase. Furthermore, these catastrophes could also be due to the necessity to inhabit larger areas of our planet. In fact, sometimes these areas, which are characterized by many territorial risks, attract settlements, since they could be particularly prosperous (such as, for example, the ground around volcanoes, which is generally very fertile).

In this issue, Hydrolink looks at the causes and consequences of the flooding of the Indus river in Pakistan. As previously noted, one of the questions is what the main cause of the intense rainfall was. Was it the weather, or climate change? According to meteorologists an unusual jet stream in the upper atmosphere from the north intensified rainfall in an area that was already in the midst of the summer monsoon. In the case of Pakistan, could the high population growth rate have contributed to a rapid deterioration of the country’s natural environment? If so, does this include extensive deforestation and the building of dams for irrigation and power generation across tributaries of the Indus river? Could it be that years of political unrest have also left their mark with the result of further extra danger? How can Pakistan better prepare for floods? How will have also climate change affect the region in the future?

The Hydraulic community should also debate if human activity unsupported by correct hydraulic constructions exacerbated the flooding, or if a higher level of attention should have be given to better protect the territory in order to avoid high risk situations. Furthermore, it is important to highlight that, once hydraulic constructions have been realized, they must be successively maintained in order to continue their efficiency with a correct territorial planning.
All these questions and themes are partly handled in this issue with the article by prof. M. Hanif Chaudhry (Mr. & Mrs. Irwin B. Kahn Professor, Associate Dean, College of Engineering and Computing, University of South Carolina) and in prof. Ana Maria Da Silva’s interview (Department of Civil Engineering, Queen’s University, Kingston, Canada) with Dr. Daniel Kull (Senior Officer, Disaster Risk Reduction, International Federation of Red Cross and Red Crescent Societies (IFRC).

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in this issue

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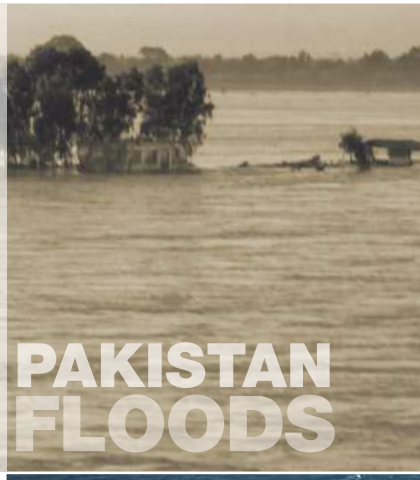

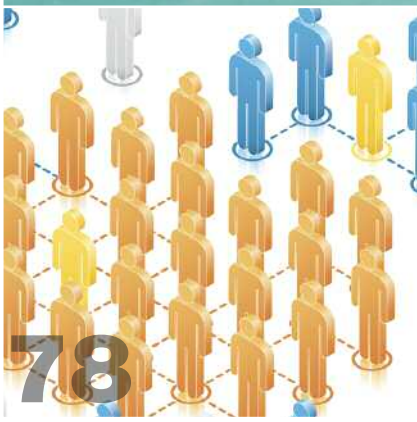

Background Report on Contributory Factors

Extensive flooding and associated damage in Pakistan during 2010 have been covered worldwide. The purpose of this article is to present information to familiarize the reader with the river system, characteristics and other factors that have contributed to the potential for floods. The reported information is a compilation of the available material in the literature, internet, and reports prepared by various agencies, and is not based on detailed analyses.

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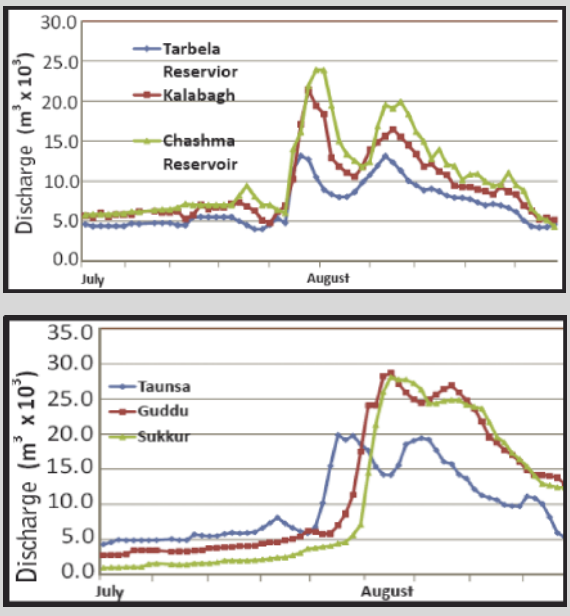
The majority of Pakistan's population depends on the water from the Indus and its tributaries for agriculture, energy production, and drinking and industrial uses. The Indus Basin, one of the most intensely irrigated watersheds in the world, has only two major dams (Tarbela dam on the Indus River and Mangla dam on the Jhelum River), several barrages, main and link canals, and secondary and tertiary canals and water courses (Fig. 1). The terms levee, dyke, and dike are used synonymously. Barrage is a hydraulic structure similar to a weir built on the river at canal headworks to divert flow into the canal. There are thousands of miles of levees along the canals and river banks. As the rivers outflow from the mountainous region in the northwest to the plains, the average ground slope is about 0.2 m/km which limits the availability of major storage sites along the river course that may be utilized to reduce the flood peaks. The active storage available in the Tarbela and Mangla reservoirs is insufficient to affect the peak flows because the volumes of river flows is significantly larger than the available storage and a few sites available for off-channel storage have not been utilized so far. A number of dams on the Indus River which could provide storage for flood control have been investigated but not built because of inter-provincial squabbles.

Almost all major rivers have their sources in India and political tensions between the two countries have prevented the development and construction of projects for flood control. Under the auspices of the World Bank and financial support from the USA, Canada, United

Fig. 1 Major rivers, dams, barrages, and canals.
(Source: http://pakistan360degrees.contentcreatorz.com/canal-system-of-pakistan/)

Fig. 2 Indus River Flood Hydrographs at different locations (Adapted from Figs. 1 and 2 of ref. 2)



Kingdom, Germany, Australia and New Zealand, the Indus Basin Treaty was signed in 1960 between India and Pakistan that allowed India to divert the three eastern rivers --- the Beas, Sutlej and Ravi—and leave the western three rivers –the Chenab, Jhelum and Indus—for Pakistan. All of these three western rivers pass through the disputed territories of Jammu and Kashmir and that has hindered the development of projects for flood control. The treaty specifies restrictions on storage for new dams in the territories under Indian control. Consequently, the impact of a number of dams built by India recently in the upper reaches of the Chenab and Jhelum for the mitigation of floods is unknown.

The majority of the flow in the Indus and its tributaries is from snowmelt in the Himalayas and monsoon rains in the watershed. Typically, the peak flows occur during the months of July and August. Limited storage capacity in the upper reaches of the main rivers and the tributaries and poor watershed practices in the catchment areas have made the potential for major floods in the floodplains and lower reaches of the river system worse. In addition, since flood flows carry enormous amount of sediment as suspended and washload, major canals are normally closed at the headworks during the flood to prevent the deposition of sediment in the canals and other control structures, thereby not allowing the diversion of flows from the river. From July 27 through July 30, 2010, there were record rainfalls, ranging from 262 to 415 mm, over extensive areas of the northern region of the Khyber Pakhtunkhwa (previously called Northwest Frontier Province) and the Punjab provinces. This resulted in the floods of record in the Indus River with peak flows continuing for three to eleven days in the upper and lower reaches of the river, respectively (Fig. 2). Numerous levee breaches occurred naturally due to overtopping or piping, while a number of breaches were initiated by the government agencies to save major bridges, barrages and other structures. Some breaches increased in size, thereby worsening the flood situation. For example, initial natural breach of 305-m width in LMB of Taunsa Barrage increased to 1767m with breach discharge of 5,140 m3/s. Similarly, an intentional, 340-m wide, breach in the RMB of Jinnah (Kalabagh) Barrage resulted in a breach discharge of 4,200 m3/s.

Most of the estimated death toll of over 2,000 occurred in the northern region. The infrastructure and agriculture, the backbone of Pakistan's economy have been affected immensely. Over one million homes have been destroyed, more than 21 million people have been injured or made homeless, exceeding the combined total of individuals affected by the

Fig. 5 Flooded areas (Source: Cover page of Reference 2)

2004 Indian Ocean tsunami, the 2005 Kashmir earthquake and the 2010 Haiti earthquake, and total losses amount to approximately 43 billion dollars1. Figure 3 shows the flood-affected areas in Pakistan as of August 16, 2010. Photographs of Figs. 4 and 5 show the flooding and associated damage.

Acknowledgements

The author thanks Dr. M. Latif, Director, Centre of Excellence in Water Resources Engineering, and A. Qadir, Director, Hydraulic Research Institute, Punjab Irrigation Department, Lahore, Pakistan for their review and comments. The latter provided Fig. 1.

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Fig. 3 Areas affected by floods (Source:http://www.bbc.co.uk/)

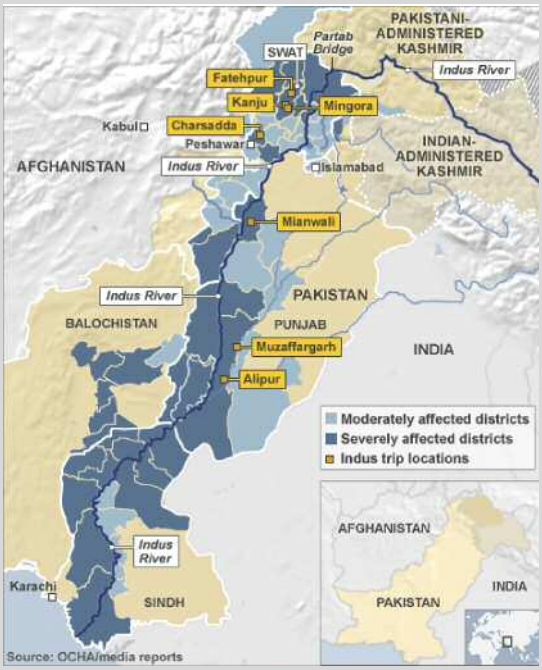

Fig. 4 NASA Satellite Image of flooded areas on August 18, 2010 (source: http://www.nasa.gov)

10 QUESTIONS TO... Daniel Kull, Red Cross

Interviewed by Ana Maria Ferreira da Silva, Chair, and Mustafa Altinakar, Vice-Chair. IAHR Fluvial Hydraulics Committee (FHC)

1 Would you please describe briefly who you are, what is your position within IFRC?

The International Federation of Red Cross and Red Crescent Societies (IFRC) is the world's largest humanitarian organization, providing assistance without discrimination as to nationality, race, religious beliefs, class or political opinions. IFRC is comprised of 186 member national Red Cross and Red Crescent Societies and the IFRC Secretariat, with more than 60 delegations around the world. Working within a multi-sectoral team in our Geneva headquarters, I provide global disaster risk reduction coordination, technical guidance, resource mobilization and representation in global processes. Within our team we also support disaster preparedness, livelihoods, food security, nutrition, and climate change adaptation.

2 What was your own involvement with the recent floods in Pakistan?

My personal involvement has been limited, as our emergency response operations are handled by a team of specialized disaster managers. However as we move from response to recovery, I will become more involved, helping to make sure that we support risk-informed rehabilitation and reconstruction that pro-actively reduces the risks from future floods and other hazard events. Our aim is always to "build back better."

3 In the media, it was reported that an area of 62,000 square miles, greater than the area of UK or ¼ of the conterminous USA including Alaska, was affected by the floods. Based on your own knowledge, would you tell us about the extent of the area and the population impacted by the floods?

During large-scale events it is always difficult to obtain accurate figures but current estimates indicate that more than 20 million people have been affected, 1800 people killed and around 2 million houses damaged.

Crops have been damaged or completely destroyed, destabilizing the livelihoods of millions of people

4 What were the direct and immediate consequences of the floods regarding loss-of-life, damage to property and numbers of displaced population, damage to agriculture and the environment, and damage to critical infrastructures?

Infrastructure including roads, communication systems, water systems, schools and health facilities were all affected by the floods. Crops have been damaged or completely destroyed, destabilizing the livelihoods of millions of people. While the aid community works to meet urgent humanitarian needs, we must also focus on agricultural inputs (seeds, fertilizers and tools) and the rehabilitation of land and irrigation infrastructure to help ensure the re-establishment of peoples' livelihoods.

5 How would you compare these catastrophic floods and its consequences with other disasters you have experienced?

As a rapid onset disaster its consequences in terms of impacts on individual peoples' lives and livelihoods is similar to that experienced in other large-scale floods, storms and earthquakes. However two issues stand out: the sheer magnitude (more people affected than during the 2004 Indian Ocean tsunami) and the limited international response in terms of public and government donations (in contrast to the Haitian earthquake earlier this year).

6 What actions were taken by the IFRC and other international relief organizations in response to these direct and immediate losses, and what challenges did you face?

Our response is being delivered through the Pakistan Red Crescent Society (PRCS) which is of course familiar and trusted locally. Since the flooding began more than 650,000 people have been reached with Red Cross Red Crescent emergency assistance. Within this effort 2 international medical Emergency Response Units (ERUs) have been deployed to complement 22 PRCS medical health units. More than 855,000 liters of safe drinking water have been collectively produced and distributed by water and sanitation ERUs. PRCS relief staff and volunteers, supported by relief ERUs, have been facilitating distribution of food and non-food items. The pipeline for non-food items must however be intensified to ensure constant and consistent assistance to people affected, as damaged or destroyed infrastructure makes it difficult to transport aid into many areas. Some relief items have to be delivered by air and sea.

daniel.kull@ifrc.org

Daniel Kull is currently the Senior Officer for Disaster Risk Reduction at the International Federation of Red Cross and Red Crescent Societies (IFRC). Educated as a water resource engineer, Daniel worked for a number of years as a hydraulic/hydrologic modeller in support of flood management projects. He then provided technical expertise in natural hazard risk assessment and pricing for a reinsurance company. For the past 6 years Daniel Kull has been supporting disaster risk reduction work in developing countries with the United Nations, Government of Switzerland, the International Institute for Applied Systems Analysis, and now the Red Cross Red Crescent.

"Millions remain homeless, hungry and without clean water and medical assistance."

7 **What is the present situation in the area, in particular with regard to housing and public health?**

Although the floodwaters have started slowly to recede, the prospects for people who are still unable to return home is bleak. Millions remain homeless, hungry and without clean water and medical assistance. With winter coming soon, the provision of adequate shelter is an urgent priority. Limited access to clean drinking water and inadequate hygiene conditions are major health concerns, with waterborne diseases a rapidly increasing threat. Common ailments include respiratory and skin infections, as well as increasing cases of acute diarrhea. The floods have affected areas where the threat of malnutrition was an existing reality, particularly in children, exacerbating the situation. Malaria cases too have notably increased.

8 **What are the short- and long-term challenges faced in the aftermath of the floods, in particular regarding the economical development and revitalization of the region?**

Once the emergency response phase is over and all immediate life-threatening needs have been met, the short- and long-term challenges faced by communities are all part of the poverty and risk continuum. More pressing needs will be to move people out of temporary shelters into permanent and disaster-resistant housing, as well as to restart local markets and supply chains so that commodities and income opportunities are locally available. Risk-informed sustainable development is needed to strengthen communities' livelihoods and resilience, ultimately lifting people out of poverty, also so that future shocks including those linked to climate change can be absorbed with minimum disruption.

9 **What will be the future involvement of the IFRC in the region?**

Early recovery assessments are already being conducted as people are beginning to return home in many areas. Rebuilding lives and livelihoods will take a long time and the on-going assessments for the emergency phase of the operation will have implications for planning around future recovery programming. The Red Cross Red Crescent, through the PRCS network of volunteers and branches, will remain present in vulnerable communities, helping them to manager their own risks and strengthen their safety and resilience.

10 **How can an organization such as IAHR and its members help in preventing, mitigating and responding to these types of catastrophic events?**

It is clear that the expertise of IAHR and its members can provide great help in better managing flood risks. Beyond the obvious technical needs of risk mapping and flood management through infrastructure, strong support is needed for "software" approaches like early warning, as well as decentralized risk management by communities themselves. It is clear that the traditional engineering approach of straight-jacketing rivers is not always effective, especially in light of dynamic and uncertain flood frequencies and magnitudes due to climate change. As such community-driven and simple approaches focusing on building resilience and living with floods need to be better supported.

"It is clear that the traditional engineering approach of straight-jacketing rivers is not always effective, especially in light of dynamic and uncertain flood frequencies and magnitudes due to climate change."

The Grounding of a Coal Carrier on the Great Barrier Reef (Australia)

Fig. 2 - Shen Neng 1 coal carrier grounded on Douglas Shoal on 12 April 2010 (Photograph Australian Maritime Safety Authority)

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The Great Barrier Reef (GBR) is a complex of coral reefs, shoals, and islets in the Pacific Ocean off the north-eastern coast of Australia. The GBR extends in roughly a northwest-southeast direction for more than 2,000 km, at an offshore distance ranging from 16 to 160 km, and it has as area of some 350,000 km^2 [1]. The reef actually consists of some 2,100 individual reefs and some 800 fringing reefs formed around islands or bordering coastlines. Many are dry or barely awash at low tide; some have islands of coral sand, or cays; others fringe high islands or the mainland coast (Fig. 1). The Great Barrier Reef was selected as a World Heritage Site in 1981. A large part of the GBR is protected by the Great Barrier Reef Marine Park, helping to limit the impact of human use.

The Great Barrier Reef is visited by approximately two million people each year. A variety of boat tours and cruises are offered, from single day trips, to longer voyages. Several continental and coral cay islands host tourist resorts. Some of the most popular tourist activities on the Great Barrier Reef include snorkelling and diving.

Fig. 1 - Erskine Island (top) and Heron Island reef (bottom) on the Great Barrier Reef in December 2001 (Photographs Hubert Chanson)

In 2003-04, the Australian Maritime Safety Authority and the Great Barrier Reef Marine Park Authority developed a comprehensive zoning plan for the marine park, identifying areas where large commercial ships can and cannot transit through. A major incident took place in April 2010: the grounding of the Chinese coal carrier Shen Neng 1. The Shen Neng 1 lodged a sailing plan prior to departing from Gladstone. The planned departure route took the ship north from Gladstone until an alteration of course that would take the ship through a 12 nautical mile wide passage between North West Island and Douglas Shoal, then into the open sea to the east via the Capricorn Channel. The ship deviated from its sailing plan, entered a prohibited area and run aground on Douglas Shoal on 3 April 2010, 70 km east of Great Keppel Island, Queensland (Fig. 2). The 230 m long coal carrier was carrying about 65,000 tons of coal and 950 tons of heavy fuel-oil bound for China.

The salvage and pollutant containment operation for the Chinese coal carrier Shen Neng 1 was managed by the Australian Maritime Safety Authority (AMSA), in conjunction with Maritime Safety Queensland (MSQ) [2]. The Pacific Responder emergency response vessel was dispatched from waters north of Cairns to provide support, the MSQ vessel Norfolk was dispatched from Heron Island to provide logistical support and AMSA's surveillance aircraft flew from Cairns to assess the situation. A dispersant-spraying aircraft was deployed from Rockhampton to manage a 100 m × 3 km ribbon of oil that had leaked from the ship. The carrier was on the shoal and salvage assistance was required to move the vessel. Two tugboats were employed to stabilise the carrier. Oil was initially transferred internally from vulnerable tanks to secure ones to reduce the risk of further spillage and to stabilise the carrier and its cargo. The Larcom bunker barge was dispatched from Gladstone and the oil was pumped from Shen Neng 1 to the bunker. Once the oil was transferred from the carrier, the carrier was refloated, and three tugs began pulling the ship off Douglas Shoal. The vessel was towed around three nautical miles southwest of Douglas Shoal for an initial assessment, and later secured at safe anchorage off Great Keppel Island to allow divers to inspect the hull of the carrier. Salvage experts had indicated that the Shen Neng 1 required repairs and its coal cargo was later off loaded prior to being towed to a foreign port for repairs.

While the incident received world wide attention, only a minor oil spill took place and a major disaster was prevented. It was however a timely reminder of the fragility of the Great Barrier Reef's unique eco-system that supports a wide diversity of life.

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A Personal Invitation...

On behalf of the 34th IAHR World Congress Organisation, IAHR and Engineers Australia (EA), we are delighted to extend our personal invitation to you to join us in Brisbane, Australia for the 34th World Congress of the International Association for Hydro-Environment Engineering and Research (IAHR). Engineers Australia (EA) and its National Committee on Water Engineering (NCWE) are collaborating with IAHR to organize the 34th IAHR World Congress together with the 33rd National Hydrology and Water Resources Symposium and the 10th National Conference on Hydraulics in Water Engineering.

The Congress theme "Balance and Uncertainty: Water in a Changing World" focuses on the central roles of hydraulic engineering, hydrology and water resources in our changing world, and how these roles link to the broader issues. A balance is continually being sought between competing values in water engineering, including the environment, the economy, tourism, social and indigenous values, health aspects, aesthetics, and the needs of current and future generations. Careful management and innovative solutions are required to balance these values, and solutions must be able to deal with the uncertainty in the natural world as well as the changing human world.

Our Technical Program encompasses a number of keynote lectures given by leading experts. Prestigious speakers will include Arthur Askew, the Crawford Munro orator, Eric Lesleighter, the Frank Henderson orator, and the Arthur Ippen lecturer.

Brisbane, Australia is an attractive destination - a well-organised modern city, within close proximity to some of the world's greatest natural attractions! We look forward to welcoming you in June 2011 to what we are confident will be the best ever IAHR World Congress.

Hubert Chanson and James Ball
34th IAHR World Congress Chairs

The Human Element

Douglas E. Hersh's close crop of auburn hair and neatly trimmed goatee are clearly visible in an expandable window on my desktop. So are his light tweed blazer and matching tie. On a table behind his desk sits a purple orchid, lending color to his office -- 2,600 miles away from mine.

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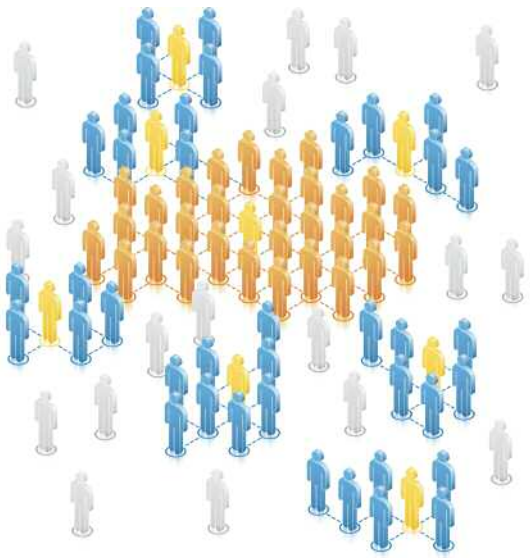
Written by:
Steve Kolowich
Inside Higher Ed
www.insidehighered.com

The technology that allows me to see Hersh's face as he speaks to me is not new. But Hersh, dean of educational programs and technology at Santa Barbara City College, believes it may hold the key to solving an old problem that has plagued distance education since its beginnings: the retention gap.

A growing body of research has all but obliterated the notion that distance education is inherently less effective than classroom education. But even the most ardent distance-ed evangelists cannot deny persistent evidence suggesting that students are more likely to drop out of online programs than traditional ones. The phenomenon has many explanations, not least the fact that what often makes students choose the flexibility of online learning -- being too busy to enroll in a classroom course -- can also make it harder for them to keep up with their studies. But Hersh believes there is another major factor driving the gap between retention rates in face-to-face programs and those in the rapidly growing world of distance education: the lack of a human touch.



And unlike the reality of adult students' busy lives, Hersh says the human-touch problem can be solved. In fact, he thinks he knows how.

Hersh's solution is to incorporate more video and audio components into the course-delivery mechanism. Most professors who teach online already incorporate short video and audio clips into their courses, according to a 2009 survey by the Campus Computing Project. But it is rarer, Hersh says, for professors to use video of themselves to teach or interact with their online students -- largely because the purveyors of major learning management systems do not orient their platforms to feature that method of delivery.

That is why Hersh convinced Santa Barbara in 2008 to abandon Blackboard, the LMS industry leader, in favor of Moodle's open-source platform, which he used to build the straightforwardly named "Human Presence Learning Environment." The interface is designed so that professors can deliver lessons and messages using videos recorded with a Webcam. It also shows students who among their instructors or classmates are logged into Skype, the video-chat service, in case they want to have a live, face-to-face conversation. As an alternative to text, students using computers that have built-in recording equipment can post audio responses to discussion threads.

Hersh says he is in discussions with other California community colleges to adopt the platform and will gladly give it away to any other institutions that want to adopt it.

Blackboard has recently incorporated a text-chatting feature into its system, and allows its professors who also teach classroom courses to post videos of their lectures on their course pages. But according to a spokesman, the company is less focused on audio- and video-based interactivity than on promoting "engagement in general," in accordance with numerous studies that link high engagement to low dropout rates.

For Hersh, engagement goes hand-in-hand with audio-visual communication. The more that exchanges occurring within an online learning environment resemble those that occur in classrooms, he says, the more that students will feel connected to their professors and classmates, and the more likely they will be to stay in a program.

John Bourne, executive director of the Sloan Consortium, an online-education research and advocacy group, says "social presence" does stem dropout rates in online programs. "There is no question in my mind, based on work on social presence over 15 years, that if you increase interaction between humans, you can increase and enhance engagement, comfort and, eventually, retention," Bourne says, adding that he has spoken to institutions that have been displeased with the limited degree of social presence in the major commercial learning management systems.

"I think as we go forward with more and more workforce education and pulling students up to higher levels of productivity, there are often people at lower levels of the education chain who have trouble keeping on task and working through," he says. "So the more we can do to retain them through online methods," the better.

Hersh says he has proof that his system, in particular, works toward this goal. As part of his 2009 dissertation for Argosy University, Hersh studied the satisfaction and completion rates of a sample of 145 students in his "presence"-oriented learning environment compared to a similar sample taking their courses through a "traditional" LMS. That research

"demonstrate[d] that students feel more satisfied in their online courses when they feel engaged through human presence design," Hersh wrote in a summary provided to Inside Higher Ed. "Further… students who find intrinsic satisfaction in their human presence courses tend to complete them at higher rates and with higher levels of academic success." He credits these improvements to the "illusion of non-mediation," a term he borrowed from virtual-presence scholars Matthew Lombard and Theresa Ditton. When students are able to see the face of the instructor who is guiding them through a course, they are more likely to trust that professor, and they feel more invested in the course, Hersh says. The same applies to classmates in an online program, to the extent that future learning environments enable visual contact among them.

Hersh admits that this return to the emotional dynamics of face-to-face learning may come at a cost: The text-based medium that currently dominates online learning environments may eliminate the prejudices and distractions inherent to visual communication, making conversations in text-based learning environments more focused.

But communicating solely via text is also alienating, says Hersh. Weighing the theoretical advantages of purely textual discourse against the demonstrated engagement benefits of presence-oriented teaching, the latter wins, he says.

Reggie Smith, president of the United States Distance Learning Association, says that based on his experience, "The learner-instructor interaction is the most critical one to the success of the learning experience," for not only instructional but also emotional reasons. But while he said that Hersh's customized learning environment "looks great," he warned that the overall design of online courses — not just the tools involved in delivery — still have the greatest bearing on whether a course is effective.

"We are seeing more and more [instructors] make use of video and audio within their environments, but using it to just add some flash does not make it award-winning content or instructionally sound by design," says Smith. "While student-instructor and student-student dialog is important and can support learning outcomes, it is not a required… ingredient for success in an online course."

Report on 17th APD Congress

Auckland, New Zealand, 21-24 February 2010

In 2010 the Asia Pacific Division Congress was held in the Pacific. It was jointly organised by the Open Polytechnic of New Zealand and The University of Auckland, and was held at the School of Engineering, the University of Auckland. The 7th International Urban Watershed Management Conference (7th IUWMC) was incorporated in the APD.

Written by:
Dr. Guinevere Nalder
Organising Secretary 17th APD

Assisting the LOC were a group of external members who advertised the APD throughout Asia. Altogether 147 papers were received. Two hundred and forty seven delegates registered for the Congress from across Asia as well as Europe, Americas and Australia.

Technical Visits

Technical Visit 1: Waitakere City Council's low impact design stormwater control measures and one of Auckland City's water supply dams in the Waitakere ranges.

Technical Visit 2: Mangere Wastewater Treatment Plant Auckland's main wastewater treatment plant which has recently undergone major upgrading.

Technical Visit 3: Museum of Transport and Technology, sited at one of Auckland's early water sources, the Western Springs to view the restored Victorian pump house and beam engine.

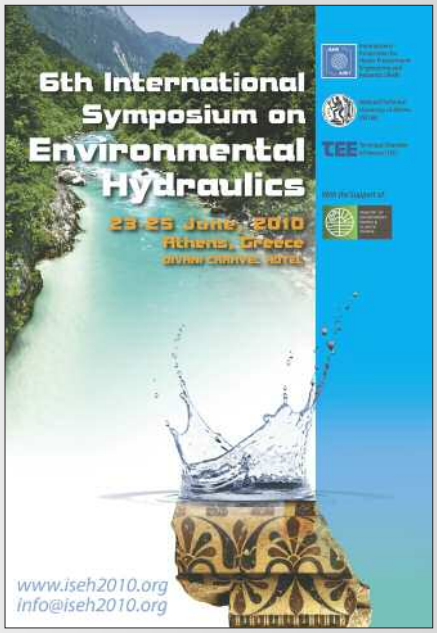
Welcome Reception

IAHR's75th Anniversary was recognised at the Welcome reception on Monday evening. The 75th anniversary logo was displayed and delegates were invited by IAHR President, Prof. Tamai to a toast.

To read the full report visit www.iahr.org under Regional Divisions - Asia and Pacific

6TH INTERNATIONAL SYMPOSIUM ON ENVIRONMENTAL HYDRAULICS Athens, Greece, 23-25 June 2010

The 6th International Symposium on Environmental Hydraulics was organized by the National Technical University of Athens under the auspices of the International Association for Hydro-Environment Engineer and Research (IAHR), with the support of the Technical Chamber of Greece and the Ministry of Environment, Energy and Climate Change. It was the first time that the Symposium was held in Europe, following a successful series of previous venues in Hong Kong (1991, 1998, 2004) and Tempe, Arizona (2001, 2007).



Written by:

Prof. George Christodoulou
Director of Applied Hydraulics Laboratory School of Civil Engineering
National Technical University of Athens
christod@hydro.ntua.gr

The field of Environmental Hydraulics has expanded considerably over the last two decades, because of the growing concern over water environmental issues associated with pollution and water balance problems on a regional and global scale, which require a thorough understanding of processes related to environmental flows and transport phenomena and the development of new approaches for practical solutions. The 6th ISEH drew contributions concerning development and applications of up-to-date theoretical, computational or experimental tools in a wide range of topics, as outlined below.

- Fundamentals of Environmental Fluid Mechanics (Environmental turbulence, mass transport, mixing and dispersion processes; Jets and plumes; Stratified flows).
- Environmental Hydraulics of Inland Waters (Lakes and reservoirs, rivers and estuaries, transboundary pollution).
- Environmental Hydraulics of Coastal Waters (Nearshore processes, lagoons and coastal embayments, sea outfalls, oil slicks).
- Environmental Hydraulics of Groundwater (Groundwater pollution, groundwater remediation, saltwater intrusion).
- Interface Processes (Air-water interface, sediment- surface water interactions).
- Computational Techniques.
- Field Measurements and Experimental Techniques.
- Urban Hydrosystems (Pollution in urban networks, hydrodynamics of treatment plant units).
- Ecological Aspects.
- Environmental Hydraulics and Global Climate Change.

About 300 abstracts were originally submitted and after preliminary selection full papers were reviewed by well-known experts, members of the International and local Scientific Committees. The final program included about 190 accepted oral presentations, arranged in four parallel sessions, and 5 invited keynote lectures. The 3-day program was attended by over 200 participants from 30 countries. According to the responses to the questionnaire distributed during the last day, the organization and technical program was rated as very good to excellent. Parallel to the Symposium, the first IAHR Summit meeting of invited experts from around the world was held on June 24, on the subject of Global Water Security.

The 6th ISEH Proceedings were published in a two-volume set by Taylor & Francis/ Balkema and are available worldwide through the publisher. The Proceedings are dedicated to the memory of Gerhard H. Jirka, a pioneer in Environmental Hydraulics, whose sudden loss prevented his presence as an invited speaker in the Symposium.

Further information about the program of the symposium, photos from the opening and the dinner, and other details are available at www.iseh2010.org

Council Election 2011 – 2013
Nominating Committee 2011

At its meeting in Athens, Greece in June 2010, the IAHR Council has identified the Nominating Committee (NC 2011) for the next Council election ahead of the next World Congress in Brisbane, Australia, June 2011. The new NC 2011 is chaired by Helmut Kobus (Germany), former President of IAHR, and comprises Daniel Farias (Argentina), Ana Maria da Silva (Canada), Forrest Holly (USA), Wang Lianxiang (China), Hajime Nakagawa (Japan), Roger Nokes (New Zealand), Peter Davies (UK) and Giampaolo di Silvio (Italy). IAHR President Nobuyuki Tamai (Japan) will serve as the Council contact person.
The NC collects proposals from individual and institute members, searches itself for candidates, and evaluates the performance of present Council members in view of their possible re-election. It must consider the alignment of candidates with Council composition requirements, including the question of progression of Council Members to Vice Presidential positions or to the Presidency.

It is the task of the NC to propose a list of candidates for the 2011-2013 Council election, which includes 5 Executive Committee positions (President, 3 Vice-Presidents and Secretary General) and 8 regular elected Council members. This list must reflect a balance between the possibly conflicting requirements of:

- world-wide representation of the IAHR membership and yet at the same time a small active group which is capable to lead the Association, and to fulfil Council assignments;
- continuous renewal through new members while assuring necessary continuity;
- adequate representation of hydraulic engineering practice.

NC 2011 slate of candidates

The Nominating Committee will evaluate all proposed nominations with respect to their qualification for fulfilling the major tasks of the IAHR Council.

Invitation to the membership for nomination of candidates

The Nominating Committee invited all IAHR members to submit suggestions regarding nomination of possible candidates for Council in Newsflash. The NC is currently evaluating nominations received.

The IAHR Council has the task to promote the interests of the Association and co-ordinate the activities of its members serving the interests and needs of Hydroenvironment Engineering and Research, both at global and at regional scale.
This includes long-range planning for the biennial World Congresses as well as co-ordination and interlinkage of activities of Regional and Technical Divisions and Committees, e.g. conferences, IAHR-publications and Awards and promotion of continuing education, student chapters and short courses. Membership promotion, finances and IAHR-secretariat and liaison with institute members, industry and the profession are also important tasks, as well as relation with government agencies and professional/technical societies and international organisations.

The Nominating Committee will develop a slate of candidates, which will be published in the January 1st issue of Newsflash and on the IAHR website. According to the new by-laws, this slate may contain up to 2 candidates for each position.
Any member wishing to receive a printed list of the slate of candidates should contact the Secretariat after this date.

Nomination by petition

If the Nominating Committee has not included your suggestion in its slate or if you have another suitable candidate not hitherto considered, all members have the option to file a nomination by petition within two months after publication of the NC 2011 slate, i.e. before March 1, 2011. The new election procedure gives any group of members in the Association, which feels that its interests are not properly taken into account by the NC 2011 slate, the chance to submit nominations by petition for any of the eight regular Council member positions. A valid petition requires signatures of 15 members from at least five countries or from a group of countries representing 10% of the IAHR membership. This assures that there is support for a candidate which goes beyond a personal or national interest. All valid nominations by petition will be included in the ballot. Nominations by Petition must be submitted to the Secretariat within two months after publication of the NC slate of candidates with a statement from the candidate, that she or he is willing to accept the nomination, a resumé including professional career, involvement in IAHR, and a statement on the planned contribution as Council member.

Ballot

The NC will submit the list of candidates by March 1, 2011 to the Secretariat. This list will be published in Hydrolink 2/2009 together with any candidates "by Petition", reaching members before the end of April, two months prior to the congress. Members will be invited to elect the new Council through written or electronic ballot before and at the Brisbane Congress, June 2011.

Contact:

NC 2011 Chair:
Prof. Dr. Helmut Kobus
Kobus@iws.uni-stuttgart.de

Council Contact person:
Prof. Nobuyuki Tamai, IAHR President
tamai@kanazawa-gu.ac.jp

Prof. Tickle's recent appointment

Kevin Tickle has been appointed Pro Vice Chancellor of Faculty of Arts, Business, Informatics & Education - Central Queensland University. He was formerly Chair of IAHR Probabilistic Methods Section.

Prof. di Silvio elected next president of WASER

Prof. Giampaolo di Silvio (former IAHR Division Chair) has been elected next president of the World Association for Sediment Research (WASER). The elected Vice Presidents are Zhaoyin Wang (China) (former IAHR Council Member), Gerrit Basson (South Africa), and Ulrich Zanke (Germany).

For more information visit: http://www.waser.cn/

Prof. Altinakar, Director NCCHE

Prof. Mustafa Altinakar, Vice Chair of the IAHR Fluvial Hydraulics Committee, and Chair of the IAHR Working Group on the International Flood initiative, has been appointed Director of the National Center of Computational Hydroscience and Engineering, USA in succession to Prof. Sam Wang who has retired.

For more information visit:
www.ncche.olemiss.edu/people/draltinakar

Project run by Gerard Pichel in Vietnam

Gerard Pichel has been appointed Team Leader of the Mekong Waterways Improvement Project -carried out by DHV- in Ho Chi Minh City, Vietnam. ***gerardpjkt@hotmail.com***

IAHR VP Prof. Lee appointed Vice President for Research at Hong Kong University of Science and Technology

Professor Lee, currently Redmond Chair of Civil Engineering and Pro-Vice-Chancellor and Vice-President at the University of Hong Kong, will take up a new post as Vice-President for Research and Graduate Studies (VP-RG) at HKUST from 1st November 2010.

Executive Committee Meeting in Auckland February 2010

From left to right: Christopher George, Peter Goodwin, Nobuyuki Tamai, Joseph Lee, Ramon Gutierrez Serret, Jean Paul Chabard

IAHR thanks Odile and Andre Daubert for their translation work for JHR

Last June a commemorative plaque was presented to Odile and Andre Daubert for many years of dedicated work for translating English abstracts to French in JHR.. Coinciding with outsourcing of IAHR Journals to Taylor & Francis French abstracts from the JHR have been discontinued; nevertheless and taking into consideration tradition the French title will remain.

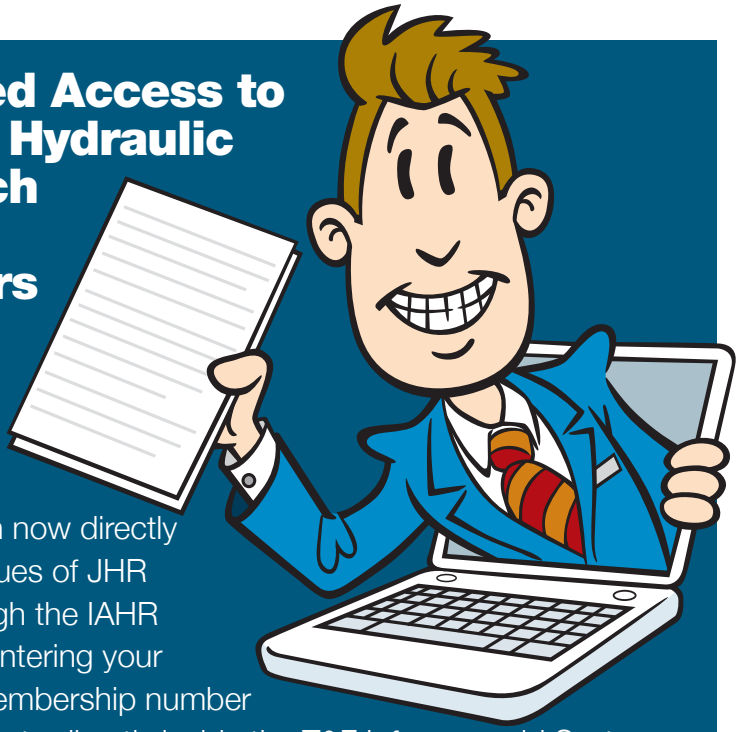
JHER becomes an SCI (Expanded) Journal

The Journal of Hydro-environment Research (JHER) has been accepted by ISI Thompson for coverage in Science Citation Index (SCI) Expanded beginning from V1(1) Aug 2007!

IAHR Executive Director visited the 34th IAHR World Congress LOC

In the foreground James Ball, Deputy Chair (left) and Hubert Chanson, Chair (right)

Improved Access to Journal Hydraulic Research for Members



Members can now directly access all issues of JHR directly through the IAHR website. By entering your e.mail and membership number you can navigate directly inside the T&F Informaworld System and view all papers from 1963.

www.iahr.org

www.journalhydraulicresearch.com

Recent Obituaries on IAHR Website

Prof. Ramchandra Janardan Garde, passed away on February 2010 in Pune, India.
To read more about his life and his research go to www.iahr.org

Prof. Alan Ervine, Founding Member of Glasgow Centre for International Develop-ment, passed away in September. Full biography can be read at www.iahr.org under "obituaries".

published on behaf of IAHR, INBO and IAHS

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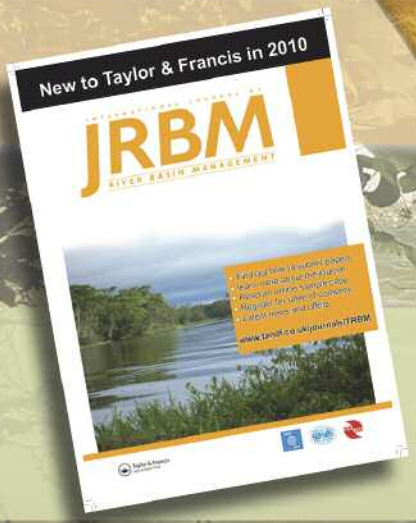

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