

**LEARN** how to set up and evaluate different water-related disaster scenarios

**GRASP** new concepts of water-related disaster preparedness, mitigation and management

**GAIN** a through understanding of the latest modelling and geospatial tools that can help you to better manage water-related disasters



A SHORT COURSE ON

# DISASTER MANAGEMENT OF URBAN WATER SYSTEMS UNDER CLIMATE CHANGE

23-28 NOVEMBER 2009, AIT, BANGKOK, THAILAND

UNESCO-IHE  
Institute for Water Education



**AIT**  
Asian Institute of Technology



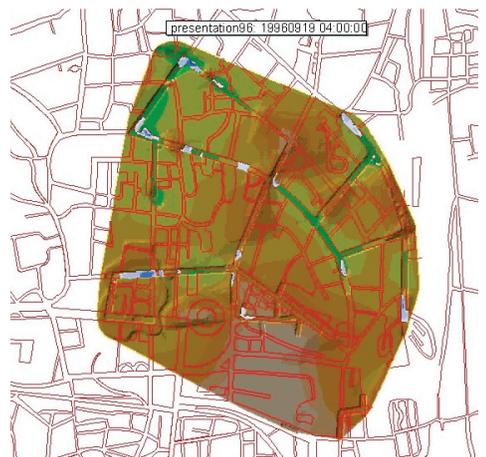
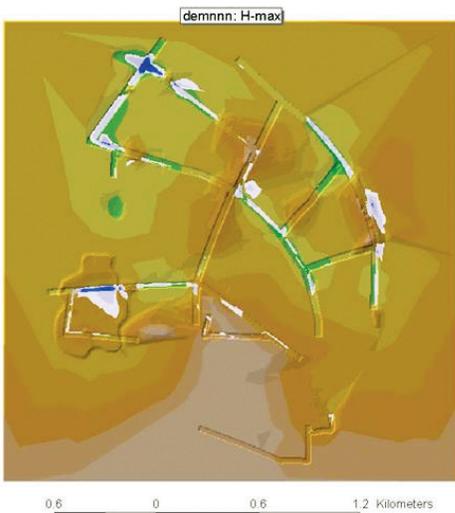
This short course is structured in a flexible way. Depending on the specific training needs of different interested parties, the scope, duration and level of details can be adapted. This brochure describes a general framework which can be easily moulded into a blend of deliverables provided by course facilitators.

## BACKGROUND

Urbanisation in developing countries doubled from less than 25% in 1970 to more than 50% in 2006. It is widely accepted that proactive disaster management is a necessity for maintaining the environmental integrity and economic functions of the city. However, to do so it requires substantial investments and intensive, long-term cooperation among many stakeholders. Supply of potable water typically enjoys a far higher priority than stormwater and wastewater management; The UN Millennium Development Goals state that nearly 3 billion people, most in developing countries, still lack access to adequate stormwater and wastewater facilities. Furthermore, the relentless migration of people from rural areas to cities, uncoordinated developments activities, changing climate and increasing operational and maintenance costs put growing pressure on urban services, and especially on the management of emergencies and disasters.

The situation is even more difficult when taking into account the obvious gap between development levels in stormwater and wastewater services between countries. Undoubtedly, all the countries face challenges in their water-related disaster management of different types and levels of complexity. While some countries are still struggling to get basic sanitation and drainage facilities, others are implementing state of the art technologies. Very few countries have a respectable proportion of their stormwater and wastewater collected and treated; some countries have practically no collection and treatment facilities at all. While the sector, financial and project management, and operation and maintenance programmes in some countries are heading towards higher standards, in others it is still very difficult to implement projects and run the facilities in a sustainable way. This reality presents a range of challenges and calls for a delivery of a short course on *Disaster Management of Urban Water Systems under Climate Change*.

## Modelling of Flood Disaster Senarios





## PARTICIPANTS PROFILE

Applicants with engineering, natural and social sciences and management background are eligible to apply for this course. Those with backgrounds in relevant fields of study or work experiences will be given priority for selection.

Applications should be made before 31st August 2009.

## LANGUAGE

The course's working language is English.

## OUTLINE

The course consists of a balanced combination of interactive lectures, workshops and real-life case studies and computer-based applications. The course should stimulate the exchange of professional experiences among participants and UNESCO-IHE/AIT staff. An interactive problem-driven exercise will be carried out during which both lecturers and participants will work out conceptual solutions for real-life cases.

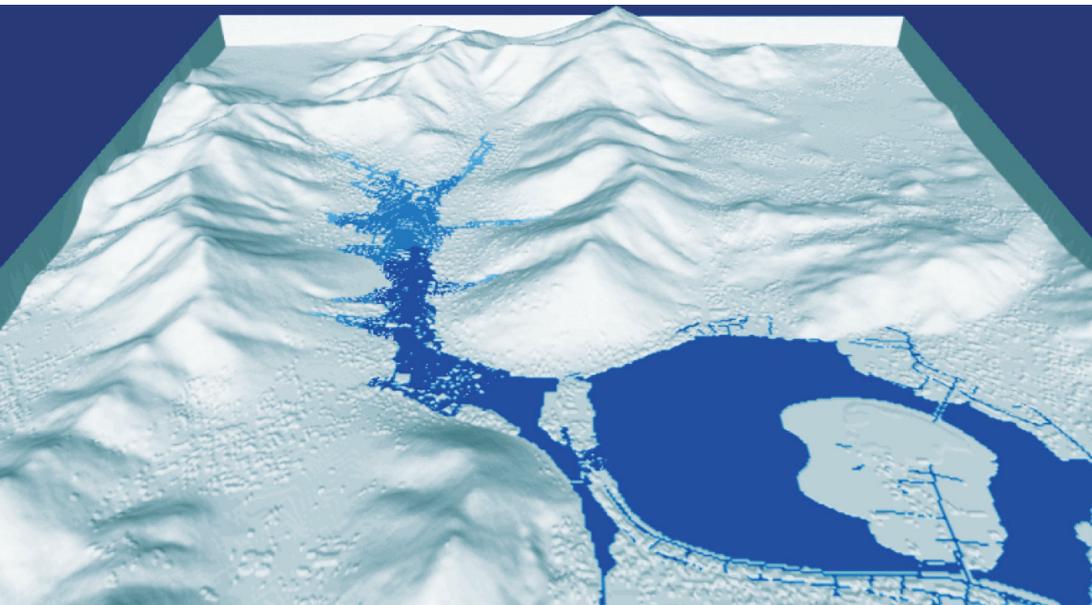
In particular, the participants will:

- Be exposed to state-of-the-art information on this fast-developing topic
- Have an opportunity to present and share their problems with course-facilitators and colleague-participants,
- Be exposed to the latest geospatial and modelling tools used in disaster management,
- Have an opportunity to learn about problems experienced in different cities around the world, and their potential solutions, and
- Be given an overview of recent results obtained from the latest real-life applications as well as research projects.

In addition to the lectures given by UNESCO-IHE/AIT course facilitators and industry representatives, there will be also presentations by invited speakers from some of the world's leading institutions involved in disaster management. Their input into the course will enrich the programme, initiate creative thinking and stimulate discussions.

## CONTENT

- Drivers for water-related disasters in urban areas
- Urban hydrology
- Urbanisation and climate change
- Public health and ecological risk management
- Key principles of proactive disaster management
- Tools for disaster management
- Geospatial technology
- Risk mapping
- Use of models
- Early warning and information systems
- EIA framework for disaster management
- Data needs for disaster preparedness, mitigation and management
- Structural and non-structural strategies for disaster management
- Community-based disaster management
- Development of disaster management plans





The UNESCO-IHE Institute for Water Education is established in 2003. It carries out research, education and capacity building activities in the fields of water, environment and infrastructure. UNESCO-IHE continues the work that began in 1957 when IHE first offered a postgraduate diploma course in hydraulic engineering to practising professionals from developing countries.

The Institute is based in Delft, the Netherlands, and is owned by all UNESCO member states. It is established as a UNESCO 'category I' institute jointly by UNESCO and the Government of the Netherlands. The Institute is the largest water education facility in the world, and the only institution in the UN system authorised to confer accredited MSc degrees.

UNESCO-IHE is instrumental in strengthening the efforts of other universities and research centres to increase the knowledge and skills of professionals working in the water sector. The member states of UNESCO have access to the knowledge and services of UNESCO-IHE in human and institutional capacity building, which is vital in their efforts to achieve the Millennium Development Goals, the Johannesburg Plan of Implementation (Agenda 21) and other global water objectives.

[WWW.UNESCO-IHE.ORG/EDUCATION](http://WWW.UNESCO-IHE.ORG/EDUCATION)

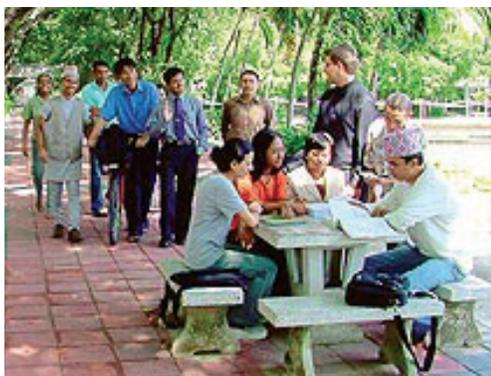


**AIT**  
Asian Institute of Technology

The Asian Institute of Technology promotes technological change and sustainable development in the Asian-Pacific region through higher education, research and outreach. Established in Bangkok in 1959, AIT has become a leading regional postgraduate institution and is actively working with public and private sector partners throughout the region and with some of the top universities in the world.

Recognized for its multinational, multi-cultural ethos, the Institute operates as a self-contained international community at its campus located 40 km (25 miles) north of Bangkok, Thailand.

Besides the usual labs and academic buildings, the main campus includes housing, sports, and medical facilities, a conference center, and a library with over 230,000 volumes and 830 print and on-line periodicals.



*All serve to fulfill the AIT mission: to develop highly qualified and committed professionals who play leading roles in the region's sustainable development and its integration into the global economy.*

For further information about the course details including fees and applications, please contact:

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